FINAL
1,4-DIOXANE GROUNDWATER SAMPLING REPORT

FOR JOINT BASE ELMENDORF–RICHARDSON RESTORATION PROGRAM SITES, ALASKA

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LIST OF ACRONYMS, ABBREVIATIONS AND SYMBOLS

%R	percent recovery
µg/L	micrograms per liter
°C	degrees Celsius
°F	degrees Fahrenheit
1,1,1-TCA	1,1,1-trichloroethane
ADEC	Alaska Department of Environmental Conservation
bgs	below ground surface
DO	dissolved oxygen
DQI	data quality indicator
DQO	data quality objectives
DUP	field duplicate sample
EB	equipment rinse blank
EMAX	EMAX Laboratories, Inc.
ERP	Environmental Restoration Program
ft	foot/feet
FYR	Five-Year Review
HGL	HydroGeoLogic, Inc.
IDW	investigation derived waste
JBER	Joint Base Elmendorf-Richardson
JBER-E	JBER-Elmendorf
JBER-R	JBER-Richardson
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LDC	Laboratory Data Consultants, Inc.
mg/L	milligram per liter
MS	matrix spike
mS/cm	millisiemens per centimeter
MSD	matrix spike duplicate
mV	millivolts
NA	not applicable
NR	not recorded

OK	results within acceptable range/requirements
OU	Operable Unit
PSL	Project Screening Level
QA	quality assurance
QC	quality control
QSM	quality systems manual
RPD	relative percent difference
RSL	Regional Screening Level
SDG	sample delivery group
UFP-QAPP	Uniform Federal Policy-Quality Assurance Project Plan
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

FINAL
1,4-DIOXANE GROUNDWATER SAMPLING REPORT FOR JOINT BASE ELMENDORF–RICHARDSON RESTORATION PROGRAM SITES, ALASKA

1.0 INTRODUCTION

This 1,4-dioxane groundwater sampling report has been prepared to document groundwater sampling activities conducted at Joint Base Elmendorf-Richardson (JBER) located in Anchorage, Alaska, from August 1, 2016, through October 5, 2016. This report has been prepared by HydroGeoLogic, Inc. (HGL) for the Air Force Civil Engineer Center in accordance with the requirements of the 4P A-E Services Contract No. FA8903-08-D-8772, Task Order 0066.

The purpose of collecting and evaluating groundwater samples for 1,4-dioxane at JBER is to address Five-Year Review (FYR) recommendations made for Operable Units (OU) 1, 4, 5, 6, and Site DP098 on JBER-Elmendorf (JBER-E), and OUs B (Site CG039) and E (Site DA089) on JBER-Richardson (JBER-R). The FYR recommendations were made for these CERCLA sites where the selected remedy includes monitoring of groundwater for chlorinated solvents. Historically, 1,4-dioxane was widely used as a stabilizer in chlorinated solvents, specifically 1,1,1-trichloroethane (1,1,1-TCA).

The scope of work includes the collection of groundwater samples from 33 existing monitoring wells located at numerous JBER Environmental Restoration Program (ERP) groundwater contamination plumes (see Figure 1.1). Groundwater samples were submitted to an off-site laboratory and analyzed for 1,4-dioxane. The groundwater samples were collected from plumes that were previously identified as being contaminated with chlorinated solvents. Validated laboratory results are compared to the current U.S. Environmental Protection Agency (USEPA) Regional Screening Level (RSL) value of 0.46 micrograms per liter (µg/L).

Groundwater sample collection and management, laboratory analysis, data verification, validation, and management were conducted according to the requirements of the final work plan - *Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska* (UFP-QAPP) (U.S. Air Force [USAF], 2016). The groundwater sampling and reporting activities documented herein were completed as a separate task during the overall performance of the JBER vapor intrusion studies.

Groundwater sample collection and management activities were supervised by a "Qualified Environmental Professional" and were conducted by "Qualified Samplers" per the Alaska Department of Environmental Conservation (ADEC) requirements in 18 Alaska Administrative Code 75.333 (ADEC, 2016a).

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2.0 PROJECT OBJECTIVES

The data quality objectives (DQO) applicable to the groundwater sampling are presented in Worksheet 11 of the UFP-QAPP. The overall objective of the groundwater sampling was to characterize potential 1,4-dioxane contamination in groundwater at numerous plumes located throughout JBER associated with chlorinated volatile organic compound (VOC) groundwater contamination. USEPA (USEPA, 2014) has identified 1,4-dioxane as a likely contaminant at many sites contaminated with certain chlorinated solvents (particularly 1,1,1-TCA) because of its widespread use as a stabilizer in these chemicals.

The DQOs require the comparison of groundwater sample results to the current USEPA RSL (Residential Tapwater) value of 0.46 µg/L per USAF policy. The USEPA has not established a Federal maximum contaminant level for 1,4-dioxane. The groundwater sampling was not intended to demonstrate compliance at any specific site or plume. The results will be evaluated by the JBER ERP to determine the potential need for further characterization associated with 1,4-dioxane.

This sampling event included the collection of one groundwater sample from 33 existing monitoring wells: 23 located at the JBER-E plumes and 10 located at JBER-R plumes (see Table 2.1, and Figures 2.1 and 2.2). Three monitoring wells originally included in this sampling event were found to have been previously abandoned; therefore, three alternate wells were selected and sampled for 1,4-dioxane. The groundwater monitoring wells selected for sampling are located within previously identified areas of chlorinated VOC contamination at JBER-E and JBER-R to provide general coverage of the groundwater contamination plumes at the subject sites. No monitoring wells were installed or abandoned by HGL during this project. The default sample collection method included low-flow sampling using non-dedicated submersible electric pumps.

Laboratory analyses of groundwater samples were conducted by EMAX Laboratories, Inc. (EMAX) located in Torrance, California. Field duplicate quality control (QC) samples were collected at a frequency of 1 per 10 groundwater samples per base. No more than one field duplicate sample (DUP) was collected from groundwater during a single workday, in accordance with ADEC field sampling guidance. Matrix spike/matrix spike duplicate (MS/MSD) samples were collected at a frequency of 1 per 20 groundwater samples. Groundwater samples were analyzed for 1,4-dioxane using method EMAX-M8270SIM.

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3.0 PHYSICAL SETTING

The following sections describe the physical setting at JBER, including the regional geology, surficial geology, and hydrogeology. Information regarding the geology and groundwater flow systems was obtained from the *Draft 2014 Annual Field Activities Report, CERCLA Sites* (USAF, 2015). Well construction information and historical depth to groundwater data for monitoring wells included in the groundwater sampling program were obtained from the *JBER Environmental Restoration Program Atlas* (USAF, 2013).

3.1 REGIONAL GEOLOGY

JBER straddles both the alluvial fan complex of the Anchorage plain and the moraine and glacial alluvium complex near the shoreline of Knik Arm. The gravel alluvium of the Anchorage plain underlies both the main cantonment area and the south training range complex on JBER-R. The northern portions of JBER are part of the Elmendorf Moraine complex that is made up of numerous east-west trending ridges that parallel Knik Arm. JBER is situated within the Eagle River and Ship Creek drainages along the Anchorage lowlands, a region of gently rolling terrain of glacial origin. East of the lowlands, the Chugach Mountains rise abruptly to elevations of 3,000 to 7,000 feet (ft). The front escarpment of the Chugach Range, near Anchorage, is predominantly composed of meta-sedimentary and meta-volcanic rocks of the McHugh Complex. The lowlands are characterized by unconsolidated glacial, glacial-marine, and glacio-alluvial deposits of Quaternary age, which range from about 230 to 322 ft thick in the vicinity of JBER, and are underlain by Tertiary sedimentary bedrock of the Kenai Formation. The unconsolidated glacial deposits thicken in a westerly direction from the base of the Chugach Mountains and reach a thickness of 700 ft in the western area of Anchorage. Drilling logs indicate shale bedrock is encountered at depths of approximately 260 to 300 ft in the vicinity of the JBER Standby Groundwater Wells, located near the Elmendorf Hospital.

Glacial drift, hummocky moraine, and drumlin fields are some of the surficial glacial landforms present, particularly along the Chugach Mountain front. The Elmendorf Moraine, another prominent feature, parallels Knik Arm. The topography flattens in a west-southwesterly direction and is characterized by gently sloping, stratified outwash plain deposits associated with the Mountain View Fan. The Mountain View Fan extends from the mouth of the Eagle River Valley to downtown Anchorage and underlies a significant portion of JBER.

Glacial units are extremely variable due to the dynamic environment in which they are deposited. Multiple advances and recessions of ice, ice damming of melt water, interactions with nearby seawater, and the highly erratic behavior of glacial melt water streams are responsible for numerous depositional environments. Thus, the alluvial formations underlying the Municipality of Anchorage and JBER are highly heterogeneous. Ship Creek flows northwest from the Chugach Mountains across the Anchorage lowlands and into Knik Arm of Cook Inlet. Most of the bedrock exposed along the northwest flank of the Chugach Mountains consists of heterogeneous assemblage of weakly metamorphosed clastic and volcanic rocks of the McHugh Complex. The McHugh Complex has been thrust over the rocks of the Valdez Group along the Eagle River fault several miles to the east. The Border Ranges Fault Zone, which marks the western limit of the Chugach Mountains, crosses Ship Creek to the west.

3.2 SURFICIAL GEOLOGY

Elmendorf Moraine, the largest physiographic feature at JBER, bisects the installation in a northeast-to-southwest direction (see Figure 1.1). North of the Elmendorf Moraine, elevations decrease over a smoother surface ground moraine to the Six Mile Creek drainage, which flows westward into Knik Arm. South of the Elmendorf Moraine, a glacial outwash plain forms the southern portion of JBER-E. The Ship Creek drainage bisects JBER and flows westward from the headwaters located to the southeast in the Chugach Mountains north and west through the outwash plain to Knik Arm to the west.

The topography of JBER can be separated into three broad subdivisions that resulted from the last glaciation. These include the ridges that run northeast to southwest through the central portion of the base, forming the terminal moraine (Elmendorf Moraine); smooth-surfaced elongate hills, linear valleys, and small lakes that characterize the ground moraine north of the Elmendorf Moraine; and a broad surface of sand and gravel (the outwash plain) that extends southward from the Elmendorf Moraine. Soils on the moraines and over much of the outwash plain are shallow and well-drained. Depressions and shallow basins typically have poorly drained soils that include coarse, fibrous peat. In most places, the south slope of the Elmendorf Moraine is steep, whereas the north slope is gentle. There are many kettles (depressions) and kames (conical hills or short irregular ridges) on the moraine surface. Many of the kettles contain ponds and lakes, such as Triangle, Gwen, and Fish Lakes, while others contain bogs.

The ground moraine forms steep bluffs along Knik Arm where slopes range from 25° to 90°. Away from the Knik Arm, the surface is pitted with kettles and many drumlins (elongated gravel hills parallel to glacial movement) that are oriented to the southwest. The ground moraine is an area of relatively low vertical relief, seldom exceeding depths of 50 to 75 ft below ground surface (bgs). Many of the kettles on the ground moraine are shallow depressions forming bog lakes or unfilled depressions, but some contain lakes such as Green, Spring, Otter, Clunie, and Hillberg Lakes.

The Bootlegger Cove Formation was deposited by running water from a melting glacier and consists primarily of thinly bedded gray to light gray silt clay to clayey silt. The Bootlegger Cove Formation is a common aquitard and confining unit in the area. The ground moraine and the Bootlegger Cove Formation form an irregular surface upon which the younger alluvial sediments were deposited.

3.3 JBER-E HYDROGEOLOGY

The following sections describe the hydrogeology and groundwater flow system for JBER-E.

3.3.1 Hydrogeology

The developed portion of JBER-E, including the airfield and supporting facilities, is located within the outwash plain to the south of the Elmendorf Moraine (see Figure 1.1). The soils of the outwash plain consist predominantly of sandy gravels and gravelly sands deposited by streams draining glaciers that were advancing out of the Knik and Matanuska valleys. The outwash varies in thickness across JBER-E, but tends to be relatively thin just south of the Elmendorf Moraine and increases to a thickness of up to about 60 ft near Ship Creek. Ship Creek, which flows roughly along the southern margin of JBER-E, has deposited an alluvial fan that overlies the outwash where

the creek flows out of the Chugach Mountains to the east; it has eroded or incised into the outwash and deposited alluvial floodplain soils on top of the Bootlegger Cove Formation in its western reaches.

3.3.2 Groundwater

JBER-E is underlain by two aquifers: a shallow water table aquifer, and a deeper confined aquifer. These aquifers are separated by the Bootlegger Cove Formation, which functions as an aquitard separating the shallow water table aquifer from the deeper confined aquifer across most of JBER-E. Groundwater flow on JBER-E, south of the Elmendorf Moraine, is generally southwesterly. JBER gets its drinking water from the JBER Water Treatment Facility, which draws water from the Ship Creek Reservoir.

Table 3.1 presents total depth and depth to groundwater information for the JBER-R monitoring wells included in the groundwater sampling event. The depth to groundwater was measured at each monitoring well prior to starting the pre-sample purge. The depth to groundwater varies between plumes due to location-specific differences in geology and the specific aquifer in which the wells are screened.

3.4 JBER-R HYDROGEOLOGY

The following sections describe the hydrogeology and groundwater flow system for JBER-R.

3.4.1 Hydrogeology

Although the developed portion of JBER-R (including the main cantonment and airfield areas) is also located south of the moraine, the surficial geology differs significantly from JBER-E (see Figure 1.1).

The geology underlying JBER-R consists of glacial deposits, alluvial deposits, and metamorphic rock. The northern and central portions of JBER-R are made up of glacial sediments deposited in the Cook Inlet basin during a number of glacial periods. Alluvial deposits on the cantonment area are bounded by the Elmendorf Moraine to the northwest and metamorphic bedrock terrain to the southeast. Glacial outwash, alluvial fan, and fluvial deposits comprise the alluvial sediments that range from gravel in the eastern portion of the plain to sand in the southwestern portion. The cantonment area is composed of well bedded deposits with well sorted gravel.

The Mountain View Fan formation is a large alluvial fan that emanates from the Eagle River Valley and extends under the JBER-R main cantonment area. The Elmendorf Moraine borders the fan to the north while low hills that protrude through younger glacial sediment border the fan to the south. The fan slopes to the west-southwest and extends beyond the base. The fan was likely deposited by ice-marginal, glacially fed streams, based on its composition (stratified outwash) during outburst flooding events from ice-dammed lakes in the Eagle River Valley. Beneath the Mountain View Fan lie older glacial and glacio-marine deposits.

3.4.2 Groundwater

As noted previously, JBER-E is underlain by two aquifers: a shallow water table aquifer, and a deeper confined aquifer. These aquifers are separated by the Bootlegger Cove Formation, which functions as an aquitard separating the shallow water table aquifer from the deeper confined aquifer on JBER-R. JBER gets its drinking water from the JBER Water Treatment Facility, which draws water from the Ship Creek Reservoir.

In general, JBER-R is underlain by two aquifers: a shallow water table aquifer and a deeper, confined aquifer. These aquifers are separated by the Bootlegger Cove Formation, which functions as an aquitard separating the shallow water table aquifer from a deeper, confined aquifer across most of JBER-R. Three separate aquifer systems exist in the cantonment area, including the shallow unconfined system, a locally confined system, and the deeper confined system.

The shallow aquifer occurs under unconfined conditions in the outwash plain deposits and in unconfined to semiconfined conditions in the till of the Elmendorf Moraine. Shallow perched groundwater of limited volume and extent exists in localized areas within the Elmendorf Moraine till deposits. Groundwater flow in the outwash plain is westerly along Ship Creek.

Groundwater in the locally unconfined aquifer system within the central part of the cantonment area changes from confined to semiconfined to unconfined, moving from south to north across the area. Overall, the direction of flow in this aquifer tends to be northwesterly. Evidence suggests, however, that flow within this aquifer is also influenced by discontinuous fine-grained units that result in local groundwater flow directions that vary widely in the central part of the cantonment area.

Groundwater in the deep confined system is, at its shallowest depths (130 ft bgs), in the northern portion of JBER-R. Groundwater flow in the deep confined system is generally toward Knik Arm in a westerly to northwesterly direction. The deep aquifer occurs under confined conditions beneath areas where the Bootlegger Cove Formation is present. When the Bootlegger Cove Formation is intermittently present or absent, the underlying aquifer can be described as a leaky confined system.

The shallow aquifers are not currently used as groundwater sources on JBER. The deep aquifer system, the Anchorage aquifer, is a major water supply source for the Municipality of Anchorage. Water use on JBER is either supplied from Ship Creek or the deep aquifer.

Table 3.1 presents total depth and depth to groundwater information for the JBER-R monitoring wells included in the groundwater sampling event. The depth to groundwater was measured at each monitoring well prior to starting the pre-sample purge. The depth to groundwater varies between plumes due to location-specific differences in geology and the specific aquifer in which the wells are screened.

4.0 FIELD DATA COLLECTION

The following sections describe the general field data collection methods applicable to groundwater sampling, laboratory sample analysis, sampling equipment decontamination, and investigation derived waste (IDW) management.

4.1 MONITORING WELL LOCATIONS

The overall scope of the 1,4-dioxane groundwater sampling event included the collection of samples from each of the following groundwater contamination plumes:

- JBER-E:
  - LF59MW-03 Plume - 2 wells
  - DP098 Plume - 3 wells
  - Fire Training Area Plume - 2 wells
  - OU4 East Plume - 1 well
  - Slammer Avenue Plume - 4 wells
  - SS022 Plume - 1 well
  - ST037 West Plume - 9 wells
  - TU091 Plume - 1 well
- JBER-R:
  - CG039 Shallow Plume - 4 wells
  - CG039 Deep Plume - 2 wells
  - DA089 Plume - 2 wells
  - SS044 Plume - 2 wells

The monitoring wells are listed in Table 2.1 and shown on Figures 2.1 (JBER-E wells) and 2.2 (JBER-R wells). The monitoring wells were selected to address numerous JBER ERP plumes with chlorinated VOC contamination in groundwater including eight plumes at JBER-E and four plumes at JBER-R. The groundwater monitoring wells selected for sampling are located within previously identified areas of chlorinated VOC contamination at JBER-E and JBER-R to provide general coverage of the groundwater contamination plumes at the subject sites.

4.2 GROUNDWATER SAMPLE COLLECTION

The following sections describe the groundwater sampling methods used during the field mobilization. A summary of all groundwater samples collected, including field quality assurance (QA)/QC samples, is provided in Table 4.1. Groundwater samples were collected from August 1 through October 5, 2016 during a vapor intrusion study field mobilization.

4.2.1 Low-Flow Sampling

Groundwater samples were collected using a low-flow sampling method and non-dedicated submersible electric pumps at all but one monitoring well. Due to access limitations, well 41755WL-08 was sampled using a bailer to remove approximately three well volumes (4 gallons

total) prior to sample collection. Because a bailer was used to sample well 41755WL-08, the laboratory analytical result is considered to be biased low (see Section 5).

Low-flow sampling for 1,4-dioxane analysis was conducted using a non-dedicated submersible 12-volt direct current pump with an electronic flow controller. Additional adjustments to pump output were made using an inline valve at the discharge point, as needed. Water quality measurements were collected using a Horiba U-52 with an inline flow-through cell.

Low-flow purging began with the measurement of the static water level and total well depth. The submersible pump was then slowly lowered to a depth approximately 3 to 5 ft from the bottom of the well. Low-flow purging was initiated and the water level continuously monitored to maintain no more than 0.3 ft of drawdown during purging and sampling. The pump discharge rate was maintained between 50 and 500 milliliters/minute during purging and sampling.

Water quality measurements were recorded at 5 minute intervals until parameter equalization was achieved for at least four consecutive readings per the following criteria:

- Temperature ± 3% (minimum of ± 0.2 degrees Celsius [°C]);
- pH ± 0.1 standard units;
- Specific conductivity (SC) ± 3% millisiemens per centimeter (mS/cm);
- Oxidation/reduction potential ± 10 millivolts (mV);
- Dissolved oxygen (DO) ± 10% milligrams per liter (mg/L); and
- Turbidity ± 10% Nephelometric Turbidity Units (NTU).

If any of the above parameters failed to equalize during purging, then purging was considered to be complete if at least four parameters achieved equalization per ADEC guidance. When parameter equalization was achieved, the discharge tubing was disconnected from the flow-through cell to allow filling of the required laboratory sample containers. At no time was a laboratory sample container filled with water that had passed through the flow-through cell.

After all laboratory sample containers were filled, pumping ceased and the pump, tubing, and water level indicator were removed from the well. If tubing of the same type and diameter was already present in the well prior to sampling, then it was replaced with the new tubing used during sampling, which was then left in the well for future use. If tubing of a different diameter/type was already present in the well prior to sampling, then it was removed during sampling and was returned to the well casing upon sample completion.

All field measurements and sampling information was recorded on a separate field data sheet for each well. Completed groundwater sampling field data sheets are presented in Appendix A of this report.

4.2.2 Bailer Sampling

The groundwater sample from one monitoring well on JBER-E was collected using a new disposable bailer. Monitoring well 41755WL-08 (DP098 Plume), is located on the edge of a marshland area and is only accessible via a footpath (thus preventing the use of the vehicle battery to power a submersible pump). A pre-sample purge was completed and included the removal of

approximately 4 gallons of purge water from the well. Water quality readings were collected from purge water in a plastic bucket.

All field measurements and sampling information was recorded on a separate field data sheet for each well. Completed groundwater sampling field data sheets are presented in Appendix A.

4.2.3 Field Quality Assurance/Quality Control Sample Collection

DUPs were collected at a frequency of 1 per 10 regular groundwater samples from JBER-E and JBER-R, respectively. No more than one DUP was collected from groundwater during a single workday, in accordance with ADEC field sampling guidance (ADEC, 2016b). MS/MSD samples were collected at a frequency of 1 per 20 regular groundwater samples. Field blank samples included one equipment rinse blank (EB) for each base and one project-wide potable source water blank (SW). All QA/QC samples were analyzed for 1,4-dioxane using method EMAX-M8270SIM per the UFP-QAPP.

4.2.4 Sample Shipping

Groundwater sample coolers were delivered to the laboratory via FedEx overnight shipping. In order to allow the laboratory sufficient time to complete sample extraction and analysis within the required holding time, groundwater samples were shipped no later than the day after collection in the field.

4.3 LABORATORY SAMPLE ANALYSIS

All groundwater samples were analyzed for 1,4-dioxane using method EMAX-M8270SIM per the UFP-QAPP. Table 4.1 includes the laboratory sample delivery group (SDG) and field sample numbers applicable to each monitoring well sampled. The information in Table 4.1 can be used as a cross-reference to identify the applicable location of the data validation and laboratory analytical data packages included in Appendix C and Appendix D, respectively.

4.4 SAMPLING EQUIPMENT DECONTAMINATION

The non-dedicated submersible pumps used during low-flow groundwater sampling were decontaminated prior to first use and after each subsequent use during the field mobilization. Decontamination was completed by running/rinsing the pump (and lower portion of the power cord) in a potable water/Alconox® solution followed by clean potable water for approximately 1 minute each. Downhole sample tubing included either existing tubing already present in the well, or new Teflon™-lined polyethylene tubing, that did not require decontamination. Spent decontamination wash and rinse water was containerized and managed as IDW.

4.5 INVESTIGATION DERIVED WASTE MANAGEMENT

The IDW inventory associated with groundwater sampling includes two 55-gallon drums of monitoring well purge water and spent decontamination water. The decontamination water was generated during groundwater sampling (submersible pump decontamination) and the vapor intrusion study (drilling equipment decontamination). No solid IDW was generated during

groundwater sampling activities. Used groundwater sampling tubing and other supplies were disposed as sanitary trash.

One waste characterization composite water sample was collected from the two drums of purge water and submitted to TestAmerica, Inc. located in Sacramento, California for the full suite of analyses identified in the UFP-QAPP. Laboratory analytical results for the IDW water waste characterization sample are included in Appendix D, although these results are not subject to data validation and are not discussed further in this report.

The shipment and disposal of the two purge water drums was conducted by NRC Alaska. The drums were transported from JBER to the NRC Viking facility in northern Anchorage on December 8, 2016. Based on the waste characterization results, the two purge water drums were disposed as non-regulated waste. Documentation associated with groundwater sampling IDW disposal is provided in Appendix B of this report.

5.0 DATA QUALITY SUMMARY

The evaluation of data quality and applicable requirements are defined in the UFP-QAPP. Two general categories of data were generated during the 1,4-dioxane groundwater sampling activities: screening data and definitive data.

Screening data are generated by rapid methods of analysis with less rigorous sample preparation, calibration, or QC requirements than are necessary to produce definitive data. Sample preparation steps may be restricted to simple procedures such as dilution with a solvent, instead of elaborate extraction/digestion and cleanup. Screening data may provide analyte identification and quantitation, although the quantitation may be relatively imprecise. Screening data may be considered of unknown quality without corresponding definitive confirmation data. Screening data for the water quality parameters described in Section 4.2.1 were generated during pre-sample purging for all wells. These screening methods have no corresponding definitive methods, and results from this screening do not require confirmation. No screening data were generated by the subcontracted laboratory during the project.

Definitive data are generated using rigorous analytical methods. Definitive data are analyte specific, and both identification and quantitation are confirmed. Definitive analytical methods have standardized QC and documentation requirements and produce data for which analytical error (bias) can be determined. To classify the data as definitive, the data must be validated after the results are reported in order to verify that the appropriate QC measures were taken and were in control. Also, the sample must be collected in a manner that is representative of current site conditions. Definitive data are not restricted in use unless quality problems identified in the validation process require data qualification. All subcontracted laboratory analyses were conducted by TestAmerica, Inc. of Sacramento, California. The laboratory used method *1,4-Dioxane by GC/MS SIM Modified Method 8270SIM, Revision 2* (EMAX, 2011), hereinafter referred to as "EMAX-M8270SIM," to complete all groundwater analyses.

5.1 DATA VERIFICATION AND VALIDATION

All laboratory analytical results for 1,4-dioxane in groundwater samples were verified and subject to validation per the requirements in the UFP-QAPP. Laboratory sample verification and validation were conducted on all samples within each SDG. In general, an SDG is comprised of a group of samples submitted to the laboratory in a single shipment or on a single chain-of-custody form. Large SDGs were divided into smaller SDGs to facilitate data verification, validation, and management.

Data verification is a check that all specified activities involved in collecting and analyzing samples have been completed and documented and the necessary records (objective evidence) are available to proceed to data validation. HGL conducted data verification to confirm the subcontracted laboratory correctly logged received samples and that samples were scheduled for the correct analyses. HGL also conducted verification upon receipt of analytical results to confirm the required data deliverables were accurate and complete. Any errors or other discrepancies identified during data verification were corrected through coordination between HGL and the laboratory on an as-needed basis.

Data validation is the evaluation of conformance to stated requirements, including those in the contract, methods, standard operating procedures, and the UFP-QAPP. Subcontracted data validation was conducted by Laboratory Data Consultants, Inc. (LDC) of Carlsbad, California. Data validation was performed under Level III guidelines using the UFP-QAPP and the following documents:

- U.S. DoD, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013 (QSM); and
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008.

The LDC data validation activities and results are documented in data validation reports included in Appendix C of this report.

The HGL Project Chemist conducted a review of each LDC data validation report as a QC check of validation results. The HGL data validation review activities included discussions of any adverse conditions identified during validation and provided a summary of any changes to the laboratory data qualifiers. The results of the HGL data validation reviews are documented in SDG-specific reports also included in Appendix C.

The HGL Project Chemist also completed an ADEC Laboratory Data Review Checklist for air samples for each SDG as required by the *ADEC Quality Assurance Technical Memorandum, March 2017* (ADEC, 2017). The ADEC checklists are included for each SDG in Appendix C.

5.2 DATA QUALITY INDICATORS

Measurement performance criteria usually are expressed in terms of the data quality indicators (DQI), which include: precision, accuracy, representativeness, comparability, completeness, and sensitivity.

Of the above parameters, precision, accuracy, completeness, and sensitivity can be quantitatively measured and assessed. The parameters of comparability and representativeness are primarily qualitative in nature. Table 5.1 provides a summary of planned, collected, analyzed, and analytical result usability for VI samples collected during both field mobilizations. Table 5.2 provides a summary of analytical result precision, accuracy, and representativeness evaluations. The results of the DQI evaluations are discussed in detail below.

5.2.1 Quantitative Data Quality Indicator Evaluation

Quantitative DQIs were measured and assessed by performing QC checks and evaluating the results against numerical acceptance criteria. Where available, the method- and matrix-specific measurement performance criteria presented in the QSM were used by the subcontracted laboratory to control quantitative DQIs. Where the QSM does not list QC criteria, the control limits for routine analyses generated by the laboratory were used. These QC limits are sufficient to ensure that the analytical methods were performed under acceptable conditions and that results can be used as reported for the intended purposes.

5.2.1.1 Precision

The laboratory performed a laboratory control sample (LCS) and LCS duplicate (LCSD) in each analytical batch. The relative percent difference (RPD) between the LCS and corresponding LCSD result for each analyte was compared to the RPD limits presented in the UFP-QAPP. All LCS/LCSD pairs met the precision criteria and no sample results require qualification.

Four DUPs were collected in association with the 33 groundwater samples and the frequency of field duplicates meets the 10% objective for this sampling event. All four field duplicate pairs met the precision requirements presented in the UFP-QAPP and no sample results required qualification.

Three MS/MSD pairs were collected in association with the 33 groundwater samples and the frequency of MS/MSD samples meets the 5% objective for this sampling event. The RPD between the MS and corresponding MSD result for each analyte was compared to the RPD limits presented in the UFP-QAPP. All MS/MSD pairs met the precision criteria and no sample results required qualification.

5.2.1.2 Accuracy

The laboratory performed a LCS and a LCSD in each analytical batch. The percent recovery (%R) in each LCS and LCSD was compared to the %R limits presented in the UFP-QAPP. All LCSs and LCSDs met the accuracy criteria and no sample results required qualification.

The laboratory spiked each sample, blank, and standard with the surrogate compound bromobenzene. All surrogate %Rs met the limits presented in the UFP-QAPP and no sample results required qualification.

5.2.1.3 Completeness

The completeness results provided in Table 5.1 indicate that all planned sample collection and analyses were conducted as planned in the UFP-QAPP. The samples collected included regular, field duplicate, MS/MSD, and equipment rinse/source water field blanks.

5.2.1.4 Sensitivity

The overall sensitivity of groundwater sample results is based on the occurrence of non-detected results with reported concentrations greater than the project screening level (PSL) of 0.46 µg/L (the current USEPA Region 9 RSL for residential tap water) specified in the UFP-QAPP.

During the project, groundwater laboratory analytical results were generated for a total of 40 individual analyses (including regular, field duplicate, EB, and SW samples) for 1,4-dioxane. Of these, a total of 34 results were non-detects (87.5%) and none of the non-detects were reported at concentrations greater than the PSL of 0.46 µg/L. The minimum and maximum reported concentrations for non-detects were 0.24 µg/L and 0.37 µg/L, respectively.

5.2.2 Qualitative Data Quality Indicator Evaluation

The following sections summarize the DQI evaluations for qualitative criteria including comparability and representativeness.

5.2.2.1 Comparability

The groundwater analytical results for 1,4-dioxane are compared only to the PSL of 04.6 µg/L per the UFP-QAPP. No other comparisons versus historical analytical results or evaluations were conducted.

5.2.2.2 Representativeness

As discussed previously in Section 4.2, the groundwater sample from JBER-E well 41755WL-08 was collected using a bailer. This sampling may result in the loss of some 1,4-dioxane during the pre-sample purge and sample collection, thus providing an analytical result considered to be biased low.

The laboratory analyzed a method blank in each batch and the method blank results were used to determine whether detected results in the associated samples were representative of site conditions or potential artifacts of the analytical process. All method blanks were free from contamination and no sample results required qualification.

One SW and two equipment rinse blanks were submitted in accordance with the frequencies specified in the UFP-QAPP. All source water and equipment blanks were free from contamination and no sample results required qualification.

5.3 DATA USABILITY

Based on the results of the DQI evaluations described above, all the laboratory analytical results generated during the 1,4-dioxane groundwater sampling event are considered usable with respect to the DQOs specified in the UFP-QAPP.

As described previously, the groundwater sample from JBER-E well 41755WL-08 was collected using a bailer. The associated analytical result is considered to be biased low. Therefore, it is possible that 1,4-dioxane may be present in groundwater at well 41755WL-08 at a concentration higher than the reported non-detect result of 0.26 µg/L.

6.0 FINDINGS AND RESULTS

The following sections present results for the groundwater sampling event. The purpose for collecting and evaluating groundwater samples for 1,4-dioxane on JBER is to address FYR recommendations made for OUs 1, 4, 5, 6, and Site DP098 on JBER-E, and OUs B (Site CG039) and E (Site DA089) on JBER-R. The FYR recommendations were made for these CERCLA sites where the selected remedy includes monitoring of groundwater for chlorinated solvents. Historically, 1,4-dioxane was widely used as a stabilizer in chlorinated solvents, specifically 1,1,1-TCA.

The 1,4-dioxane groundwater sample results are compared to the current USEPA Region 9 RSL for residential tap water value (0.46 µg/L). The groundwater sampling was intended to demonstrate whether this emerging contaminant exists at any specific site or plume. The results will be evaluated by the USAF to determine the potential need for further characterization associated with 1,4-dioxane.

6.1 LABORATORY DATA QUALITY SUMMARY

All groundwater samples were collected and laboratory sample analyses completed per the UFP-QAPP. The results for the field QA/QC samples, including EBs (one per base) and the potable water source blank, are provided in Table 6.1. There were no detections of 1,4-dioxane identified for these samples. DUP results are also included in Table 6.1 and are grouped with their associated regular groundwater samples.

Groundwater sample results were subject to 100% validation by LDC located in Carlsbad, California. Each LDC data validation report was reviewed by the HGL Project Chemist and a separate summary report was completed. There were no data quality issues that required the assignment of qualifiers by HGL. All results are considered valid and usable per the project DQOs.

6.2 GROUNDWATER QUALITY FIELD MEASUREMENTS

Groundwater quality measurements were collected during low-flow purging conducted at each monitoring well prior to sample collection as described in Section 4.2 at all but one monitoring well. As discussed previously, the pre-sample purge and groundwater sample collection at well 41755WL-08 were conducted using a bailer due to access restrictions at the site. The pre-sample purge water quality measurements were conducted in a 5-gallon bucket for five consecutive sets of readings. In general, the measurement of groundwater quality parameters during low-flow sampling was conducted to ensure the sample was collected from groundwater representative of natural conditions in the aquifer.

The groundwater quality measurements presented in Table 6.2 consist of the final low-flow purge readings prior to sample collection at each monitoring well. Average groundwater temperatures of 11.2 °C (52.2 degrees Fahrenheit [°F]) for JBER-E wells and 12.2 °C (54 °F) for JBER-R wells were recorded during sampling. Due to the relatively low flow rates used during sampling, groundwater temperatures may be influenced by the ambient air temperature at the time of sampling.

For pH, average values of 6.49 for JBER-E wells and 6.85 for JBER-R wells were recorded. The pH value of groundwater represents the relative acidity (low pH) or alkalinity (high pH) of groundwater. A pH value of 7 is considered neutral and is generally representative of natural groundwater conditions; although, some variation is expected due to local geology.

Average SC values of 0.44 mS/cm for JBER-E wells and 0.34 mS/cm for JBER-R wells were measured during sampling. SC represents the ability of groundwater to conduct electricity and is generally associated with the level of dissolved salts. A higher value relates to better conductance (higher dissolved salts concentration) and a lower value relates to lesser conductance (lower dissolved salts concentration). For example, SC values typically vary from 0.002 to 0.1 mS/cm for rain water and around 50 mS/cm for ocean water. SC values in groundwater are generally associated with natural geologic conditions; although, they may also be impacted by the presence of chemical contaminants.

All of the field measurements were consistent with historical groundwater quality in JBER-E and JBER-R wells and no unexpected conditions were identified.

6.3 GROUNDWATER SAMPLE RESULTS

The following sections provide the groundwater sample results for 1,4-dioxane at JBER-E and JBER-R wells as compared to the USEPA RSL value for residential tapwater.

6.3.1 JBER-E Results

Groundwater sample results (excluding DUPs) for JBER-E are shown on Figures 6.1 through 6.4. A summary of the groundwater sample results is provided in Table 6.1.

The 1,4-dioxane result from monitoring well LF05GW-2B (1.1 µg/L), located in the LF59MW-03 plume, is the only result that exceeds the USEPA RSL on JBER-E. The only other detection of 1,4-dioxane on JBER-E was identified at monitoring well 41755WL-04 (0.34 µg/L), located in the DP098 Plume. Neither of the detected concentrations exceed the current ADEC promulgated cleanup level of 4.6 µg/L.

6.3.2 JBER-R Results

At JBER-R, groundwater sample results (excluding DUPs) are shown on Figures 6.5 and 6.6. A summary of the groundwater sample results is provided in Table 6.1.

The 1,4-dioxane result from monitoring well AP-4413 (0.61 µg/L), located in the DA089 Plume, is the only result that exceeds the USEPA RSL on JBER-R. The only other detection of 1,4-dioxane on JBER-R was identified at monitoring well AP-4550 (0.37 µg/L), located in the CG039 Shallow Plume. No detections of 1,4-dioxane were identified in any of the wells located in the CG039 Deep Plume, and none of the detected concentrations exceed the current ADEC promulgated cleanup level of 4.6 µg/L.

6.4 SUMMARY AND CONCLUSIONS

A total of 33 groundwater samples were collected from 8 plumes at JBER-E and from 4 plumes at JBER-R with previously identified chlorinated solvent contamination. Groundwater samples were collected from August 1 through October 5, 2016. All samples were analyzed for 1,4-dioxane at an off-site subcontract laboratory per the UFP-QAPP.

Of the 23 wells sampled on JBER-E, 1,4-dioxane was detected at 2 locations: monitoring well LF05GW-2B (1.1 µg/L) in the LF59MW-03 Plume and monitoring well 41755WL-04 (0.34 µg/L) in the DP098 Plume. The result from well LF05GW-2B exceeds the current USEPA Region 9 RSL for residential tapwater value (0.46 µg/L).

Of the 10 wells sampled on JBER-R, 1,4-dioxane also was detected at 2 locations: monitoring well AP-4413 (0.61 µg/L) in the DA089 Plume and monitoring well AP-4550 (0.37 µg/L) in the CG039 Shallow Plume. The result from well AP-4413 exceeds the current USEPA Region 9 RSL for residential tapwater value (0.46 µg/L).

None of the 1,4-dioxane detected values from JBER-E or JBER-R exceeds the current promulgated ADEC cleanup value of 4.6 µg/L.

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7.0 REFERENCES

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TABLES

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Table 2.1 Monitoring Well Inventory

Plume Name	USAF Site ID	Well	Easting[1]	Northing[1]	Status
JBER-E Monitoring Wells					
DP098	DP098	41755WL-02	347422.358	6795655.075	Sampled
		41755WL-04	347432.180	6795701.581	Sampled
		41755WL-08	347413.415	6795764.777	Sampled
Fire Training Area	FT023	GW-5A	349601.979	6795291.875	Sampled
		OU4W-11	349722.303	6795347.154	Sampled
LF59MW-03	CG704	LF05GW-2B	350953.823	6792829.302	Sampled
		LF59MW-03	350417.657	6792706.365	Sampled
OU4 East	SD029	IS6-01	350899.215	6794880.776	Sampled
Slammer Avenue	ST037	GW-4A	349460.323	6792526.190	Sampled
		526MW-IN	349390.544	6792688.891	Abandoned[2]
		OU5MW-06	349406.944	6792755.959	Sampled
		OU5MW-07	349735.451	6792808.478	Sampled
		OU5MW-31	349316.840	6792411.862	Sampled[2]
SS022	SS022	SS22MW14	351394.247	6793704.656	Sampled
ST037 West	ST037	402WL-02	348081.806	6793128.261	Sampled
		403WL-01	347929.558	6792056.657	Sampled
		529MW-IN	347274.599	6792429.205	Abandoned[2]
		49WL-01	347344.641	6792812.173	Sampled[2]
		OU3MW-02	347632.147	6792277.325	Sampled
		OU3MW-11	347518.565	6793138.296	Sampled
		OU5MW-03	347911.552	6792210.642	Sampled[2]
		MWSS80-01	347657.501	6792988.268	Abandoned[2]
		OU5MW-38	347152.555	6792167.184	Sampled
		OU5MW-44	347458.305	6791972.214	Sampled
		SP1-02	347428.510	6791646.148	Sampled
TU091	TU091	TU091MW-01	349759.918	6793113.953	Sampled
JBER-R Monitoring Wells					
CG039 Shallow	CG039	AP-3747	360228.411	6799455.715	Sampled
		AP-4349	360197.487	6799256.853	Sampled
		AP-4350	360041.374	6799684.999	Sampled
		AP-4353	360120.269	6799301.565	Sampled
CG039 Deep		AP-4344	360118.783	6799504.392	Sampled
		AP-4550	360163.534	6799341.006	Sampled
DA089	DA089	AP-3468	354292.761	6794601.562	Sampled
		AP-4413	354343.330	6794420.791	Sampled
SS044	SS044	AP-2982	353943.589	6793359.472	Sampled
		AP-3231	353968.524	6793375.583	Sampled

[1] Coordinate System: WGS84 UTM Zone 6 North (meters), data from the JBER ERP Atlas (JBER, 2013).
[2] Identifies monitoring wells originally included in sampling program but found to have been previously abandoned, and alternate monitoring wells selected as replacements (locations shown in Figure 2.1).

Table 3.1 Monitoring Well Details

Plume Name	USAF Site ID	Well	Sample Date	Total Depth[1] (ft. BTOC)	Depth to Groundwater[2] (ft. BTOC)
JBER-E Monitoring Wells					
DP098	DP098	41755WL-02	10/5/16	18.6	8.59
		41755WL-04	8/22/16	33.0	18.79
		41755WL-08	9/28/16	12.7	3.68
Fire Training Area	FT023	GW-5A	9/1/16	53.8	43.68
		OU4W-11	9/1/16	57.9	46.68
LF59MW-03	CG704	LF05GW-2B	8/1/16	41.0	33.32
		LF59MW-03	8/9/16	39.4	29.40
OU4 East	SD029	IS6-01	9/27/16	59.9[2]	49.69
Slammer Avenue	ST037	GW-4A	8/1/16	12.3	5.74
		OU5MW-06	8/3/16	48.4	34.88
		OU5MW-07	8/10/16	49.2	32.75
		OU5MW-31	8/31/16	9.6	4.68
SS022	SS022	SS22MW14	8/1/16	55.2	48.35
ST037 West	ST037	402WL-02	8/30/16	18.8	16.77
		403WL-01	8/2/16	46.2	40.28
		49WL-01	8/30/16	25.4	14.58
		OU3MW-02	8/4/16	39.0	28.33
		OU3MW-11	8/3/16	45.8[2]	11.91
		OU5MW-03	8/29/16	46.6	33.65
		OU5MW-38	8/3/16	59.6	30.80
		OU5MW-44	9/16/16	41.8	31.04
		SP1-02	8/2/16	50.0	35.50
TU091	TU091	TU091MW-01	8/2/16	32.7[2]	27.30
JBER-R Monitoring Wells					
CG039 Shallow	CG039	AP-3747	8/8/16	30.0	26.30
		AP-4349	8/8/16	84.2[2]	76.30
		AP-4353	8/8/16	69.4[2]	33.58
		AP-4550	8/8/16	43.0	25.97
CG039 Deep		AP-4344	9/15/16	163.5[2]	151.00
		AP-4350	9/15/16	187.0[2]	149.33
DA089	DA089	AP-3468	9/1/16	115.5	110.50
		AP-4413	8/31/16	75.3	71.93
SS044	SS044	AP-2982	8/16/16	24.0	12.89
		AP-3231	8/16/16	22.0	15.47

[1] Values from the JBER ERP Atlas (JBER, 2013) unless noted otherwise.
[2] Field measured prior to low-flow purging.

BTOC = below top of inner casing
ft = feet

Table 4.1 Groundwater Sample Collection Summary

Well	Sample Date	Sample Delivery Group	Regular Sample Number	Field Duplicate Sample Number	MS Sample Number	MSD Sample Number
JBER-E Monitoring Wells						
LF05GW-2B	8/1/16	16H027	JBERGW0007			
LF59MW-03	8/9/16	I6H133	JBERGW0008		JBERGW0008-MS	JBERGW0008-MSD
41755WL-02	10/5/16	16J080	JBERGW0011			
41755WL-04	8/22/16	16H276	JBERGW0012	JBERGW9000		
41755WL-08	9/28/16	16I266	JBERGW0013[1]			
GW-5A	9/1/16	16I015	JBERGW0014			
OU4W-11	9/1/16	16I015	JBERGW0015			
IS6-01	9/27/16	16I266	JBERGW0016			
SS22MW14	8/1/16	16H027	JBERGW0017			
402WL-02	8/30/16	16H345	JBERGW0020	JBERGW9001		
403WL-01	8/2/16	16H042	JBERGW0021	JBERGW9003		
49WL-01	8/30/16	16H345	JBERGW0023			
GW-4A	8/1/16	16H027	JBERGW0024			
OU3MW-02	8/4/16	16H090	JBERGW0026		JBERGW0026-MS	JBERGW0026-MSD
OU3MW-11	8/3/16	16H090	JBERGW0027			
OU5MW-03	8/29/16	16H345	JBERGW0022			
OU5MW-06	8/3/16	16H090	JBERGW0028			
OU5MW-07	8/10/16	16H154	JBERGW0029			
OU5MW-31	8/31/16	16I015	JBERGW0025			
OU5MW-38	8/3/16	16H090	JBERGW0030			
OU5MW-44	9/16/16	16I157	JBERGW0031			
SP1-02	8/2/16	16H042	JBERGW0032			
TU091MW-01	8/2/16	I6H042	JBERGW0033			
JBER-R Monitoring Wells						
AP-3747	8/8/16	16H117	JBERGW0001			
AP-4344	9/15/16	16I157	JBERGW0002			
AP-4349	8/8/16	16H117	JBERGW0003			
AP-4350	9/15/16	16I157	JBERGW0004			
AP-4353	8/8/16	16H117	JBERGW0005			
AP-4550	8/8/16	16H117	JBERGW0006	JBERGW9002		
AP-3468	9/1/16	16I025	JBERGW0009			
AP-4413	8/31/16	16I015	JBERGW0010			
AP-2982	8/16/16	16H209	JBERGW0018		JBERGW0018-MS	JBERGW0018-MSD
AP-3231	8/16/16	16H209	JBERGW0019			
Equipment Rinse/Source Water Blanks						
EB (JBER-E)	8/10/16	16H154	JBEREB0001			
EB (JBER-R)	9/2/16	16I025	JBEREB0002			
SW (Project)	8/10/16	16H154	JBERSW0001			

EB = equipment rinse blank
MS = matrix spike
MSD = matrix spike duplicate
SW = source water blank

Table 5.1 Sample Collection, Completeness, and Usability Evaluation Summary

Base	Regular Samples							Duplicate Samples						
	Planned	Collected	Collection Completeness	Analyzed	Analytical Completeness	Usable	Usability Completeness	Planned	Collected	Collection Completeness	Analyzed	Analytical Completeness	Usable	Usability Completeness
JBER-E Groundwater	23	23	100%	23	100%	23	100%	3	3	100%	3	100%	3	100%
JBER-R Groundwater	10	10	100%	10	100%	10	100%	1	1	100%	1	100%	1	100%

Table 5.2 Sample Precision, Accuracy, and Representativeness Evaluation Summary

SDG	LCS/LCSD %R	LCS/LCSD RPD	MS/MSD %R	MS/MSD RPD	Surrogate %R	Method Blank	Field Blanks	Other
16H027	OK	OK	NA	NA	OK	OK	NA	NA
16H042	OK	OK	NA	NA	OK	OK	NA	NA
16H090	OK	OK	OK	OK	OK	OK	NA	NA
16H117	OK	OK	NA	NA	OK	OK	NA	NA
16H133	OK	OK	OK	OK	OK	OK	NA	NA
16H154	OK	OK	NA	NA	OK	OK	EB/SW = OK	NA
16H209	OK	OK	OK	OK	OK	OK	NA	NA
16H276	OK	OK	NA	NA	OK	OK	NA	NA
16H345	OK	OK	NA	NA	OK	OK	NA	NA
16I015	OK	OK	NA	NA	OK	OK	NA	NA
16I025	OK	OK	NA	NA	OK	OK	EB = OK	NA
16I157	OK	OK	NA	NA	OK	OK	NA	NA
16I266	OK	OK	NA	NA	OK	OK	NA	NA
16J080	OK	OK	NA	NA	OK	OK	NA	NA

%R = percent recovery
EB = equipment rinse blank
MS = matrix spike
MSD = matrix spike duplicate
NA = not applicable
OK = results within acceptable range/requirements
RPD = relative percent difference
SW = source water blank

Table 6.1 Groundwater Sample Results and Screening

Plume Name	USAF Site ID	Well	Sample Number	Sample Type	Sample Date	Result (µg/L)	Qualifier	Exceed PSL?
JBER-E Monitoring Wells								
DP098	DP098	41755WL-02	JBERGW0011	REG	10/5/16	0.25	U	N
		41755WL-04	JBERGW0012	REG	8/22/16	0.34	J	N
			JBERGW9000	DUP	8/22/16	0.37	J	N
		41755WL-08[1]	JBERGW0013	REG	9/28/16	0.26	U	N
Fire Training Area	FT023	GW-5A	JBERGW0014	REG	9/1/16	0.26	U	N
		OU4W-11	JBERGW0015	REG	9/1/16	0.27	U	N
LF59MW-03	CG704	LF05GW-2B	JBERGW0007	REG	8/1/16	**1.10**		**Y**
		LF59MW-03	JBERGW0008	REG	8/9/16	0.28	U	N
SD029	SD029	IS6-01	JBERGW0016	REG	9/27/16	0.24	U	N
Slammer Avenue	ST037	GW-4A	JBERGW0024	REG	8/1/16	0.26	U	N
		OU5MW-06	JBERGW0028	REG	8/3/16	0.25	U	N
		OU5MW-07	JBERGW0029	REG	8/10/16	0.25	U	N
		OU5MW-31	JBERGW0025	REG	8/31/16	0.25	U	N
SS022	SS022	SS22MW14	JBERGW0017	REG	8/1/16	0.27	U	N
ST037 West	ST037	402WL-02	JBERGW0020	REG	8/30/16	0.27	U	N
			JBERGW9001	DUP	8/30/16	0.27	U	N
		403WL-01	JBERGW0021	REG	8/2/16	0.25	U	N
			JBERGW9003	DUP	8/2/16	0.28	U	N
		49WL-01	JBERGW0023	REG	8/30/16	0.26	U	N
		OU3MW-02	JBERGW0026	REG	8/4/16	0.28	U	N
		OU3MW-11	JBERGW0027	REG	8/3/16	0.24	U	N
		OU5MW-03	JBERGW0022	REG	8/29/16	0.26	U	N
		OU5MW-38	JBERGW0030	REG	8/3/16	0.26	U	N
		OU5MW-44	JBERGW0031	REG	9/16/16	0.26	U	N
		SP1-02	JBERGW0032	REG	8/2/16	0.26	U	N
TU091	TU091	TU091MW-01	JBERGW0033	REG	8/2/16	0.28	U	N
JBER-R Monitoring Wells								
CG039 Shallow	CG039	AP-3747	JBERGW0001	REG	8/8/16	0.28	U	N
		AP-4349	JBERGW0003	REG	8/8/16	0.24	U	N
		AP-4353	JBERGW0005	REG	8/8/16	0.26	U	N
		AP-4550	JBERGW0006	REG	8/8/16	0.37	J	N
			JBERGW9002	DUP	8/8/16	0.28	J	N
CG039 Deep		AP-4344	JBERGW0002	REG	9/15/16	0.26	U	N
		AP-4350	JBERGW0004	REG	9/15/16	0.26	U	N
DA089	DA089	AP-3468	JBERGW0009	REG	9/1/16	0.24	U	N
		AP-4413	JBERGW0010	REG	8/31/16	**0.61**		**Y**
SS044	SS044	AP-2982	JBERGW0018	REG	8/16/16	0.24	U	N
		AP-3231	JBERGW0019	REG	8/16/16	0.24	U	N
Field QA/QC Blank Samples								
JBER-E	NA	NA	JBEREB0001	EB	8/10/16	0.25	U	NA
JBER-R	NA	NA	JBEREB0002	EB	9/2/16	0.24	U	NA
Project	NA	NA	JBERSW0001	SW	8/10/16	0.26	U	NA

[1] Laboratory result considered biased low due to sample collection using a bailer.

Note: Results > PSL (0.46 µg/L) are highlighted by bold text/shaded cells.

DUP = field duplicate sample
EB = equipment rinse blank
PSL = Project Screening Level
REG = regular sample
SW = source water blank

Table 6.2 Groundwater Quality Field Measurements

Plume Name	USAF Site ID	Well	Sample Date	DO (mg/L)	ORP (mV)	pH (SU)	SC (mS/cm)	Temp (ºC [ºF])	Turb (NTU)
JBER-E Monitoring Wells									
DP098	DP098	41755WL-02	10/5/16	3.19	-66	6.18	0.70	11.5 [52.7]	0.0
		41755WL-04	8/22/16	6.22	-127	6.80	0.93	11.1 [52]	47.0
		41755WL-08	9/28/16	10.54	186	6.40	0.46	6.47 [43.7]	18.8
Fire Training Area	FT023	GW-5A	9/1/16	5.51	-13	6.79	0.65	10.5 [50.9]	0.0
		OU4W-11	9/1/16	1.53	-119	6.80	0.73	11.7 [53.1]	0.0
LF59MW-03	CG704	LF05GW-2B	8/1/16	3.27	75	5.62	0.21	9.9 [49.8]	5.3
		LF59MW-03	8/9/16	2.47	57	6.28	0.20	18.9 [66]	319.0
OU4 East	SD029	IS6-01	9/27/16	3.38	96	6.99	0.39	6.7 [44.1]	21.0
Slammer Avenue	ST037	GW-4A	8/1/16	5.26	10	6.13	0.27	11.6 [52.9]	2.1
		OU5MW-06	8/3/16	1.93	-93	6.73	0.46	13.5 [56.3]	86.6
		OU5MW-07	8/10/16	2.71	-18	6.61	0.26	9.9 [49.8]	140.0
		OU5MW-31	8/31/16	4.28	-60	6.60	0.29	10.8 [51.4]	0.0
SS022	SS022	SS22MW14	8/1/16	9.05	259	5.92	0.17	8.3 [46.9]	0.0
ST037 West	ST037	402WL-02	8/30/16	0.73	-91	6.31	0.36	10.6 [51.1]	7.4
		403WL-01	8/2/16	3.6	-21	6.65	0.52	11.8 [53.2]	1.1
		49WL-01	8/30/16	1.23	-98	6.76	0.47	14.6 [58.3]	0.0
		OU3MW-02	8/4/16	2.09	162	6.39	0.54	13.6 [56.5]	5.1
		OU3MW-11	8/3/16	1.78	78	6.33	0.51	10.1 [50.2]	0.0
		OU5MW-03	8/29/16	1.5	-100	6.80	0.57	12.1 [53.8]	0.0
		OU5MW-38	8/3/16	1.86	69	6.46	0.46	11.7 [53.1]	0.0
		OU5MW-44	9/16/16	4.46	136	6.64	0.35	9.6 [49.3]	27.0
		SP1-02	8/2/16	1.95	38	6.75	0.40	12 [53.6]	0.0
TU091	TU091	TU091MW-01	8/2/16	2.22	97	6.34	0.25	10.6 [51.1]	27.5
JBER-R Monitoring Wells									
CG039 Shallow	CG039	AP-3747	8/8/16	5.19	11	7.42	0.22	13.6 [56.5]	37.2
		AP-4349	8/8/16	4.09	-37	7.46	0.20	12.8 [55]	223.0
		AP-4353	8/8/16	3.5	-30	6.44	0.27	13.5 [56.3]	0.0
		AP-4550	8/8/16	1.27	-82	6.27	0.46	16.8 [62.2]	125.0
CG039 Deep		AP-4344	9/15/16	8.03	164	7.43	0.25	7.4 [45.3]	50.1
		AP-4350	9/15/16	6.47	144	7.53	0.38	8.2 [46.8]	0.0
DA089	DA089	AP-3468	9/1/16	7.15	-90	7.29	0.49	10.5 [50.9]	0.0
		AP-4413	8/31/16	0.88	-88	6.42	0.94	13.3 [55.9]	NR
SS044	SS044	AP-2982	8/16/16	8.12	40	6.18	0.10	11.7 [53.1]	48.2
		AP-3231	8/16/16	7.41	185	6.01	0.09	14.3 [57.7]	11.1

Note: Water quality measurements from final low-flow purge interval prior to sample collection.

DO = dissolved oxygen
NR = not recorded
NTU = nephelometric turbidity unit
ORP = oxidation-reduction potential (eH)
SC = specific conductivity
Temp = temperature
Turb = turbidity

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FIGURES

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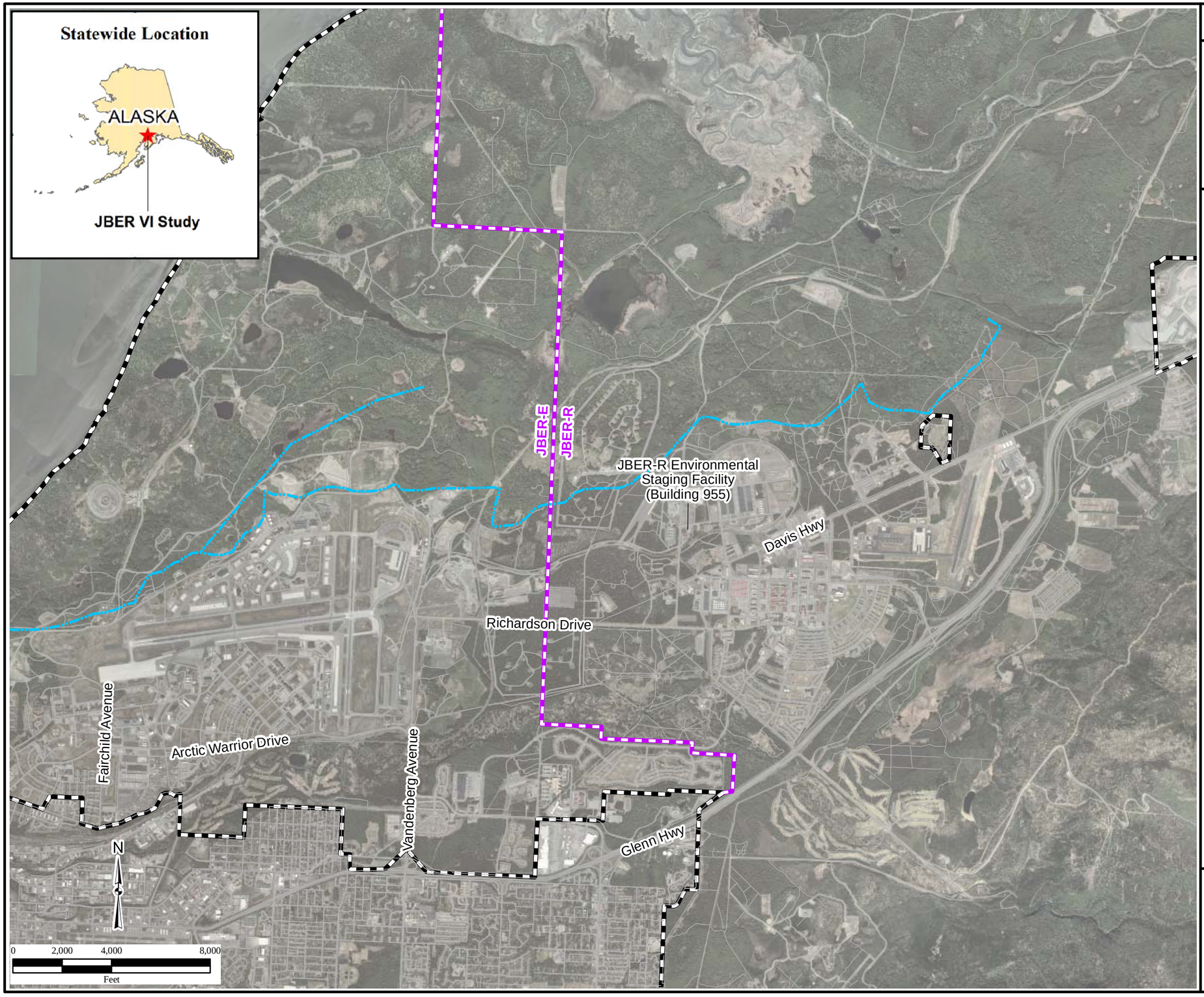

Figure 1.1
JBER General Location

Legend

- Limits of Elmendorf Moraine
- Road
- JBER Installation Boundary
- JBER-E and JBER-R Boundary

Note:
JBER=Joint Base Elmendorf-Richardson

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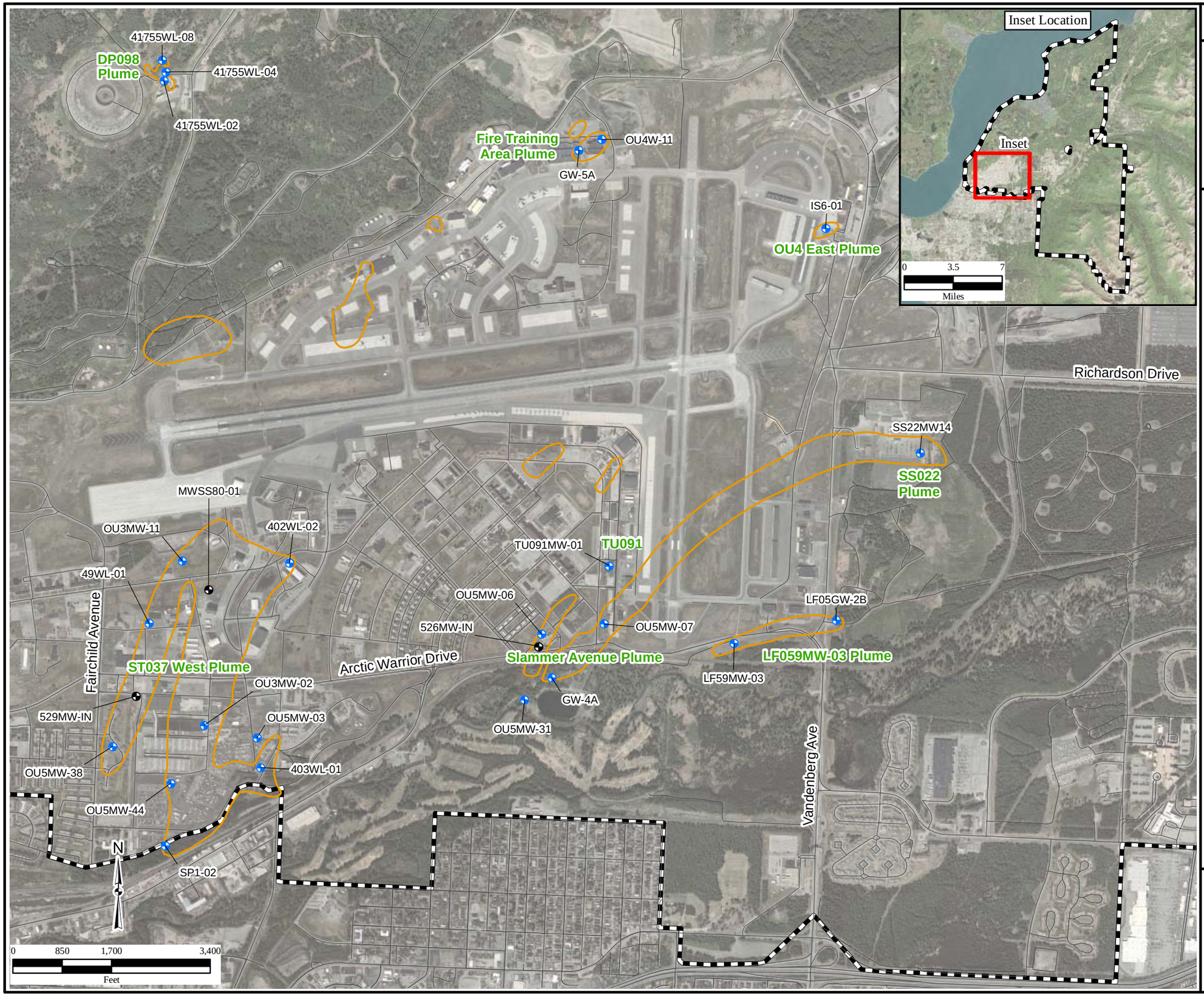
(1-01).JBER_Gen_Loc.mxd
5/18/2017 JG
Source: HGL,
ArcGIS Online Imagery

HGL HydroGeoLogic, Inc

Figure 2.1
JBER-E
Monitoring Well Locations



Legend

- Monitoring Well Sampled
- Monitoring Well Abandoned/Not Sampled
- OU5MW-06 — Monitoring Well Identification
- SS022 Plume — Site Identification
- Road
- VOC Groundwater Plume Boundary
- JBER Installation Boundary

Note:
JBER=Joint Base Elmendorf-Richardson
JBER-E = JBER - Elmendorf

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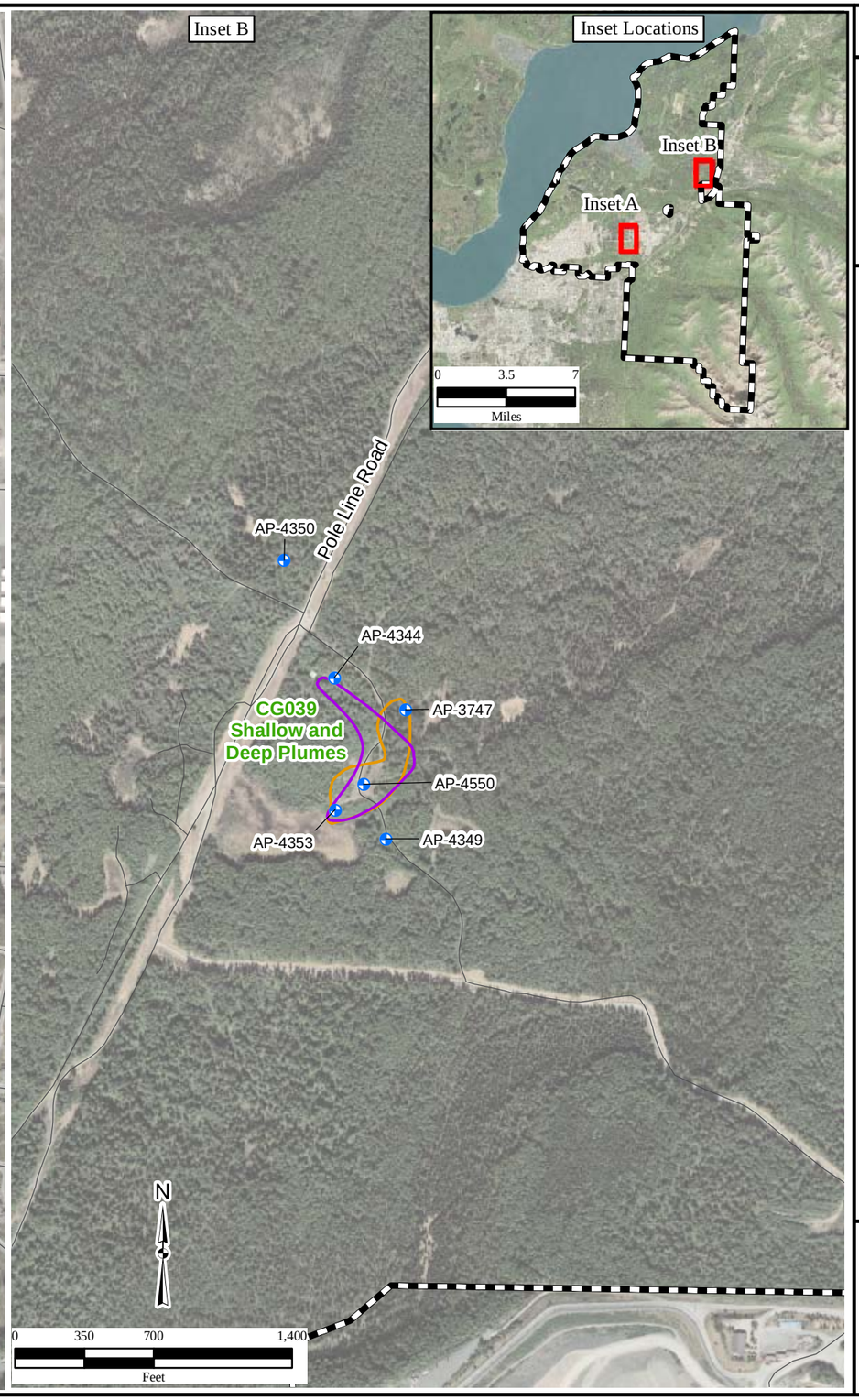
5/18/2017 JG
Source: HGL, ArcGIS Online Imagery

HGL HydroGeoLogic, Inc

Figure 2.2
JBER-R
Monitoring Well
Locations



Legend

- Monitoring Well
- AP-3468 — Monitoring Well Identification
- DA089 Plume — Site Identification
- Road
- VOC Deep Groundwater Plume Boundary
- VOC Shallow Groundwater Plume Boundary
- JBER Installation Boundary

Note:
JBER=Joint Base Elmendorf-Richardson
JBER-R = JBER - Richardson

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(2-02)JBER-R_Wells.mxd
5/18/2017 JG
Source: HGL,
ArcGIS Online Imagery

HydroGeoLogic, Inc

Figure 6.1
JBER-E LF59MW-03, Slammer Avenue, and TU091 Plumes Groundwater Sample Results

Legend

	Monitoring Well
	Monitoring Well Exceeding RSL
LF59MW-03	Monitoring Well Identification
0.28U	1,4-Dioxane Concentration (µg/L)
1.1	1,4-Dioxane Concentration (µg/L) (exceeding RSL)
TU091	Site Identification
	VOC Groundwater Plume Boundary
	JBER Installation Boundary

Notes:
All results are 1,4-dioxane µg/L screened vs USEPA Regional Screening Level (RSL) Residential Tapwater (0.46 ug/L).
JBER=Joint Base Elmendorf-Richardson
JBER-E = JBER - Elmendorf
µg/L=micrograms per liter
RSL=Regional Screening Level
U=The analyte was not detected.
USEPA=United States Environmental Protection Agency

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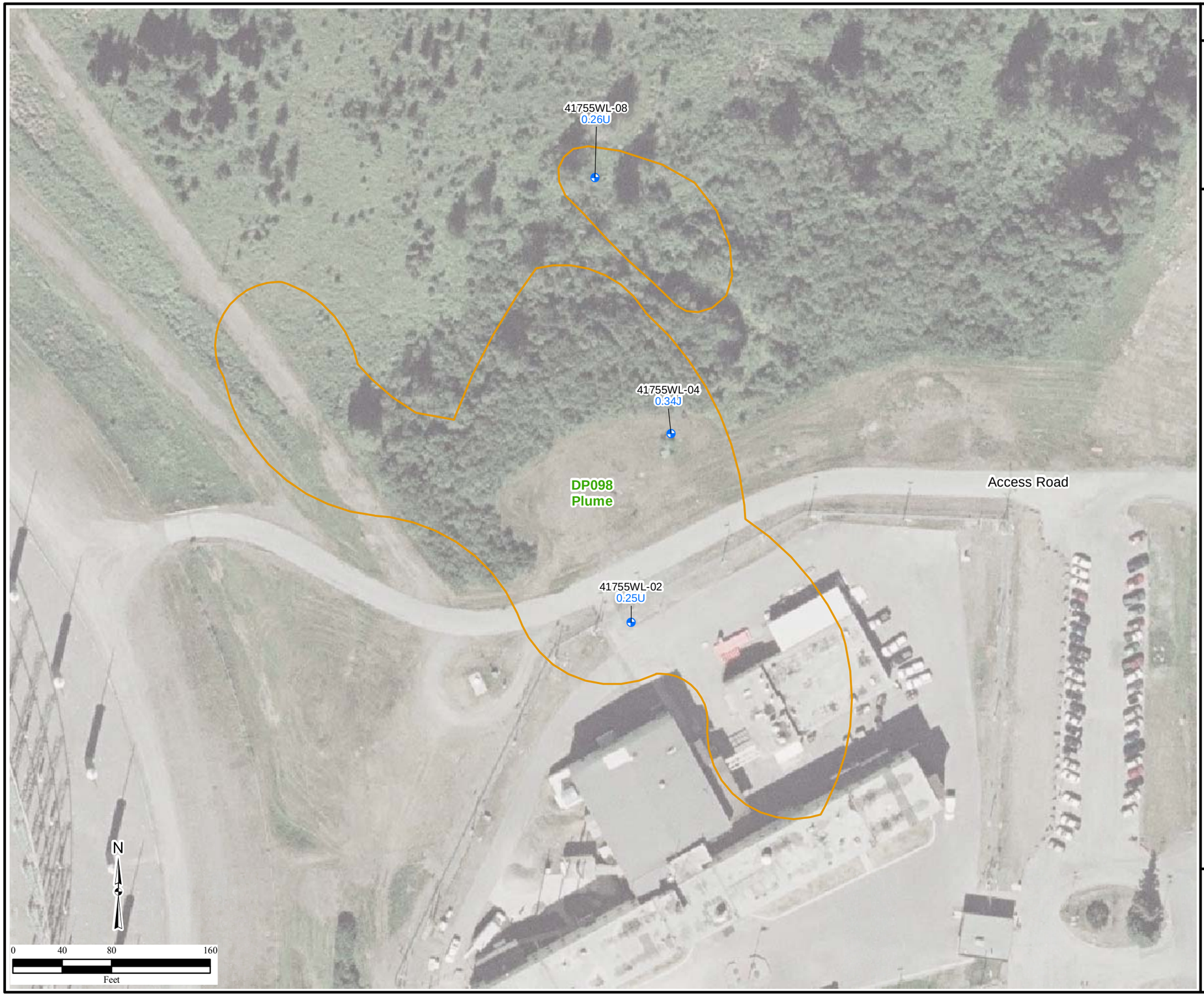
5/18/2017 JG
Source: HGL,
ArcGIS Online Imagery

HGL HydroGeoLogic, Inc

Figure 6.2
JBER-E Site DP098 Plume
Groundwater Sample Results



Legend

- Monitoring Well
- 41755WL-02 — Monitoring Well Identification
- 0.25U — 1,4-Dioxane Concentration (µg/L)
- DP098 Plume — Site Identification
- VOC Groundwater Plume Boundary

Notes:
All results are 1,4-dioxane µg/L screened vs USEPA Regional Screening Level (RSL) Residential Tapwater (0.46 ug/L).
J=Reported value is an estimated concentration.
JBER=Joint Base Elmendorf-Richardson
JBER-E = JBER - Elmendorf
µg/L=micrograms per liter
RSL=Regional Screening Level
U=The analyte was not detected.
USEPA=United States Environmental Protection Agency

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5/18/2017 JG
Source: HGL, ArcGIS Online Imagery

HydroGeoLogic, Inc

Figure 6.3
JBER-E Fire Training Area, OU4 East, and SS022 Plumes Groundwater Sample Results

Legend

- Monitoring Well
- IS6-01 — Monitoring Well Identification
- 0.24U — 1,4-Dioxane Concentration (µg/L)
- OU4 East Plume — Site Identification
- VOC Groundwater Plume Boundary
- JBER Installation Boundary

Notes:
All results are 1,4-dioxane µg/L screened vs USEPA Regional Screening Level (RSL) Residential Tapwater (0.46 ug/L).
JBER=Joint Base Elmendorf-Richardson
JBER-E = JBER - Elmendorf
µg/L=micrograms per liter
RSL=Regional Screening Level
U=The analyte was not detected.
USEPA=United States Environmental Protection Agency

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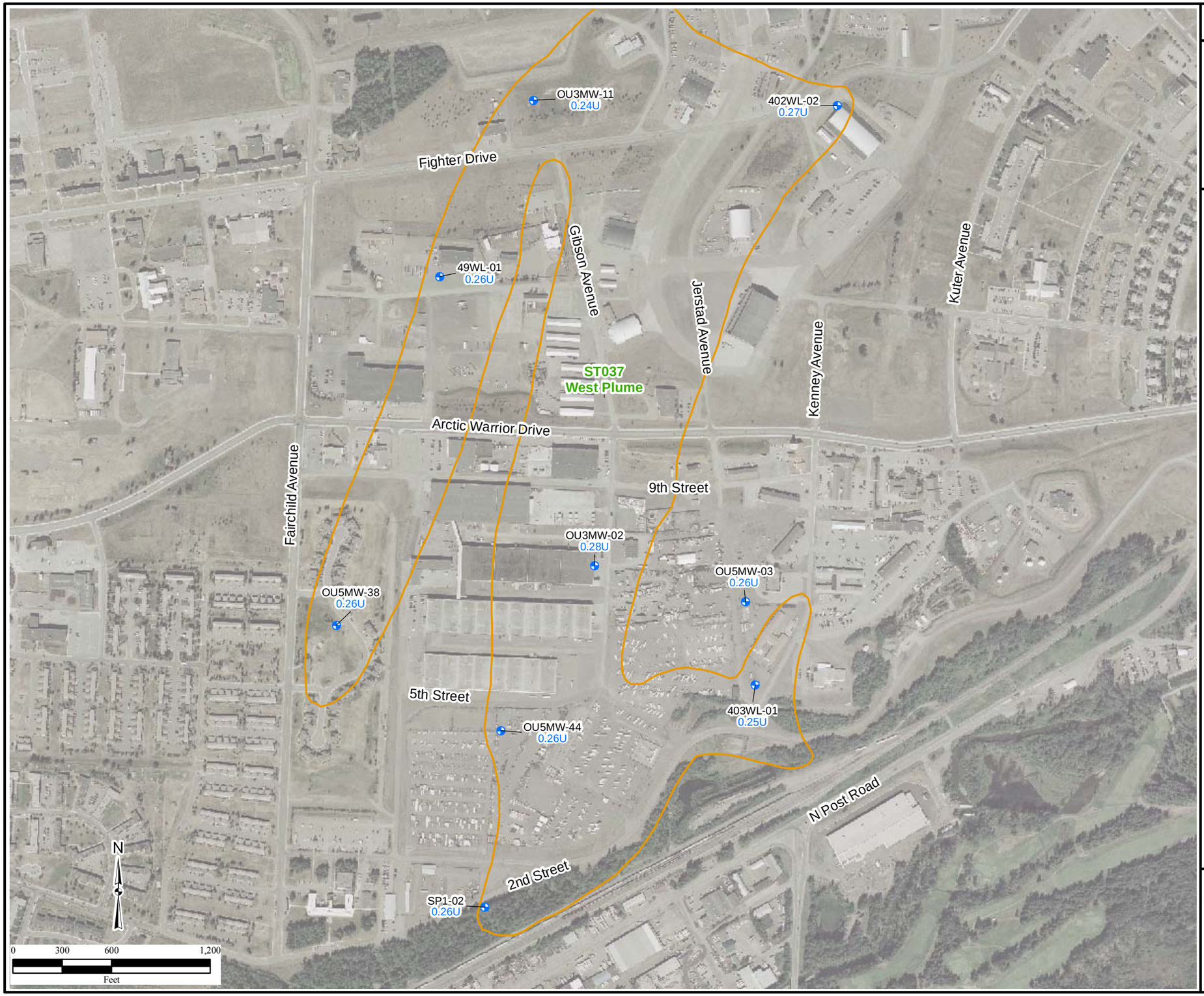
(6-03)Site_FT023-SD029-SS022.mxd
5/18/2017 JG
Source: HGL,
ArcGIS Online Imagery

HGL HydroGeoLogic, Inc

Figure 6.4
JBER-E ST037 West Plume Groundwater Sample Results



Legend

●	Monitoring Well
OU3MW-11	Monitoring Well Identification
0.24U	1,4-Dioxane Concentration (µg/L)
ST037 West Plume	Site Identification
	VOC Groundwater Plume Boundary
	JBER Installation Boundary

Notes:
All results are 1,4-dioxane µg/L screened vs USEPA Regional Screening Level (RSL) Residential Tapwater (0.46 ug/L).
JBER=Joint Base Elmendorf-Richardson
JBER-E = JBER - Elmendorf
µg/L=micrograms per liter
RSL=Regional Screening Level
U=The analyte was not detected.
USEPA=United States Environmental Protection Agency

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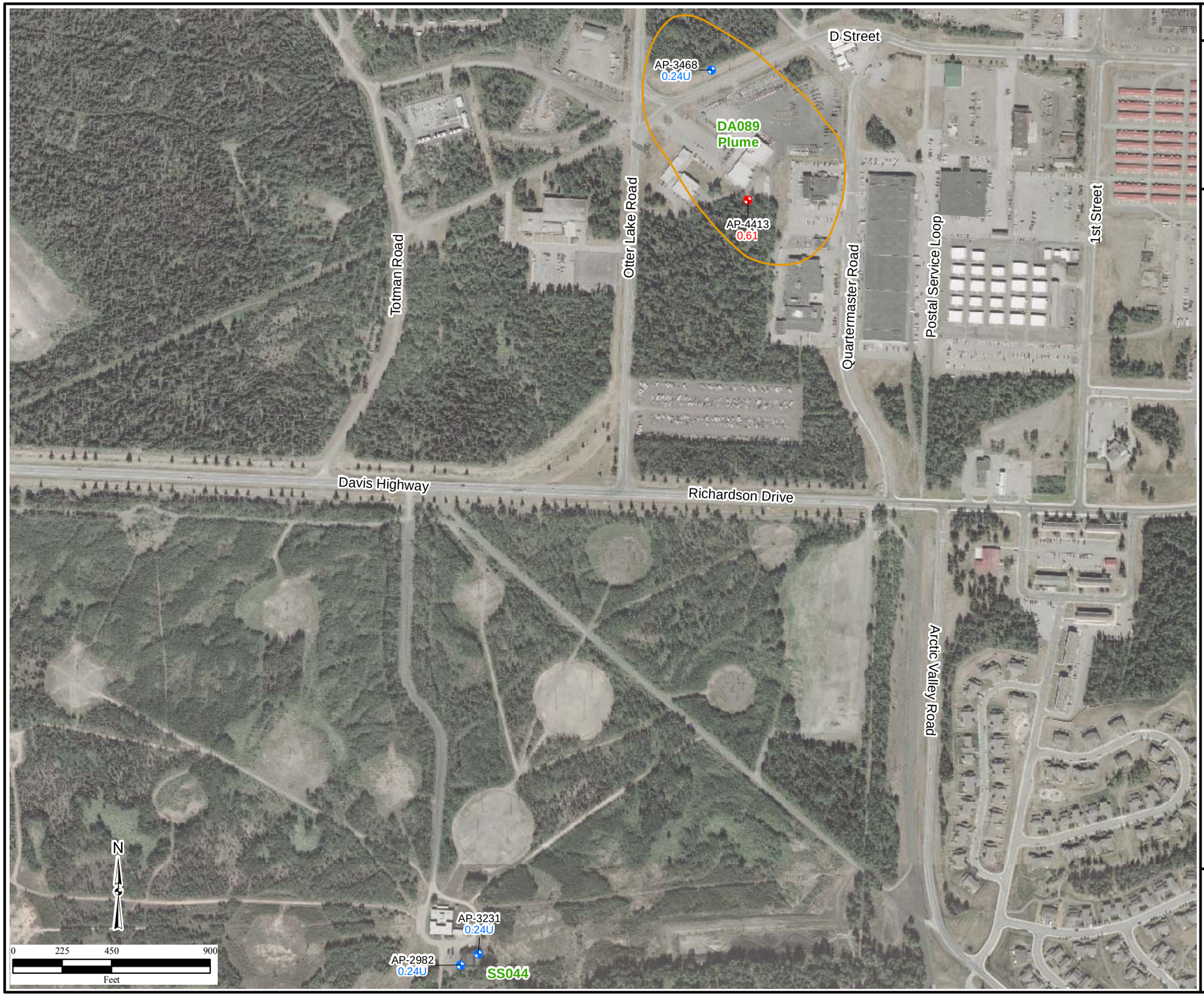
(6-04)Sites_ST037_West.mxd
5/18/2017 JG
Source: HGL,
ArcGIS Online Imagery

HGL HydroGeoLogic, Inc

Figure 6.5
JBER-R DA089 and SS044 Plumes Groundwater Sample Results



Legend

	Monitoring Well
	Monitoring Well Exceeding RSL
AP-3468	Monitoring Well Identification
0.24U	1,4-Dioxane Concentration (µg/L)
0.61	1,4-Dioxane Concentration (µg/L) (exceeding RSL)
DA089 Plume	Site Identification
	VOC Groundwater Plume Boundary
	JBER Installation Boundary

Notes:
All results are 1,4-dioxane µg/L screened vs USEPA Regional Screening Level (RSL) Residential Tapwater (0.46 ug/L).
JBER=Joint Base Elmendorf-Richardson
JBER-R = JBER - Richardson
µg/L=micrograms per liter
RSL=Regional Screening Level
U=The analyte was not detected.
USEPA=United States Environmental Protection Agency

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(6-05)Sites_DA089-SS044.mxd
5/18/2017 JG
Source: HGL,
ArcGIS Online Imagery

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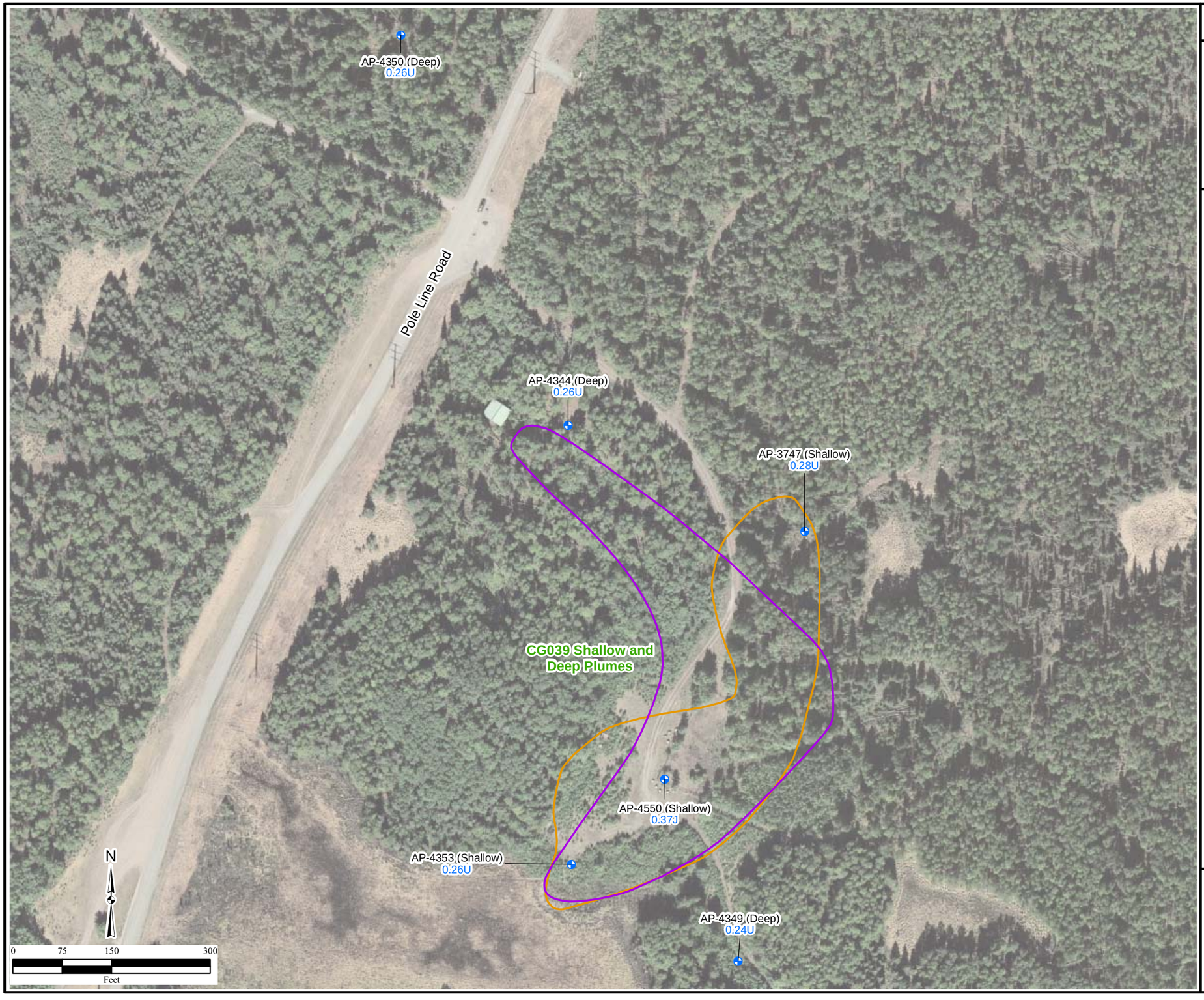
Figure 6.6
JBER-R CG039
Shallow and Deep Plumes
Groundwater Sample Results



Legend

- Monitoring Well
- AP-3747 — Monitoring Well Identification
- 0.28U — 1,4-Dioxane Concentration (µg/L)
- CG039 — Site Identification
- VOC Deep Groundwater Plume Boundary
- VOC Shallow Groundwater Plume Boundary
- JBER Installation Boundary

Notes:
All results are 1,4-dioxane µg/L screened vs USEPA Regional Screening Level (RSL) Residential Tapwater (0.46 ug/L).
J=Reported value is an estimated concentration.
JBER=Joint Base Elmendorf-Richardson
JBER-R = JBER - Richardson
µg/L=micrograms per liter
RSL=Regional Screening Level
U=The analyte was not detected.
USEPA=United States Environmental Protection Agency

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5/18/2017 JG
Source: HGL, ArcGIS Online Imagery

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APPENDIX A

GROUNDWATER SAMPLING FIELD DATA SHEETS

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GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: LF05GW-2B	Site: CG704
Sampler(s): PA/MM	Project No: AF5066.03.04
Well Depth: 44.10	Date: 8/1/2016 Time: ~~1330~~ 1335
DTW (Ft): 33.32 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain) Wind Speed/Direction, Air Temperature °F): calm, 50°F
Well Diameter (In): 2	
Placement of Pump (Ft): 40 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ L/min	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1257	Start	Purge								
1302	33.34	200	1.0	6.04	11.10	0.205	56	6.01	11.2	
1307	33.34	200	2.0	5.68	9.65	0.213	71	5.02	9.9	
1312	33.34	200	3.0	5.62	9.68	0.213	75	4.42	9.8	
1317	33.34	200	4.0	5.61	9.79	0.214	76	3.96	10.3	
1322	33.34	200	5.0	5.60	9.80	0.214	76	3.46	9.8	
1327	33.34	200	6.0	5.61	9.83	0.214	76	3.05	9.1	
1332	33.34	200	7.0	5.62	9.85	0.214	75	3.27	5.3	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: 2 gal removed
sampled @ 1335 JBERGW0007

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg Matt 8/1/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: LF59 MW-03	Site: CG704
Sampler(s): PA/MM	Project No: AF5066.03.04
Well Depth: 39.20	Date: 8/9/16 Time: 1435
DTW (Ft): 29.40 DTP (Ft):	Courier: Y FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): G
Condition of Bottom of Well: soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Calm, 50°F
Well Diameter (In): 4	
Placement of Pump (Ft): 34 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ L/min	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1400	29.40	300	Start	Purge						
1408	29.40	300	2.4	6.23	12.21	0.213	103	3.78	339	
1413	29.40	300	3.9	6.28	11.34	0.206	73	2.99	351	
1418	29.40	300	5.4	6.29	10.85	0.203	63	2.58	331	
1423	29.40	300	6.9	6.29	10.59	0.202	60	2.51	327	
1428	29.40	300	8.4	6.28	10.76	0.202	57	2.49	323	
1433	29.40	300	9.9	6.28	18.88	0.202	57	2.47	319	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

PID = 0

gallons removed:

sampled @ 1435 (SBERGW00008)

*temp out of stabilization

*take MS/MSD (SBERGW00008-MS) and (SBERGW00008-MSD)

*SIX bottles total

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg Matt 8/9/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: 41755WL-02	Site: DP096
Sampler(s): J. DeVaughn	Project No: JBER Groundwater Sampling
Well Depth: NR	Date: 10/5/16 Time:
DTW (Ft): 8.59' btoc DTP (Ft): ~~19.33' TD~~	Courier: X FedEx ___ Hand ~~X~~ Lab Courier
MP Height AGS/BGS (Ft): 19.33' btoc	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: Soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2" ID	
Placement of Pump (Ft):	

FIELD PARAMETERS

Time	btoc DTW (Ft)	Flow Rate (GPM) mL/min	Total Volume (Gal) L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1510	9.41	200	0	6.28	11.4	0.723	-32	8.09	1.0	Initial
1513	9.33	200		6.23	11.4	0.720	-41	5.91	0	
1517	9.60	200		6.21	11.5	0.715	-52	4.95	0	
1520	9.61	200		6.20	11.5	0.714	-56	4.62	0	
1523	9.62	175		6.19	11.5	0.712	-59	4.37	0	
1528	9.62	175		6.19	11.5	0.709	-62	3.98	0	
1533	9.62	175	↓	6.18	11.5	0.706	-64	3.58	0	
1538	9.62	175	4.8	6.18	11.5	0.704	-66	3.19	0	

OBSERVATIONS

Color: ___ Clear ___ Other (Describe):

Odor: ___ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: Flush mount well. Strong sulfur odor in purge water.

Sample JBERGW00011 @ 1540 hrs

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): J. DeVaughn 10/5/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: 41755WL-04	Site: DP098
Sampler(s): AH/MM/CW JDV	Project No: AF5066.03.04
Well Depth: ~~34 (HM) 32.98 (MM) 18.69~~	Date: 8/22/16 Time: 1550
DTW (Ft): ~~23.62~~ JDV DTP (Ft): N/A	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft):	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm, 50°F
Well Diameter (In): 2	
Placement of Pump (Ft): 27 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (L/min) (~~GPM~~)	Total Volume (~~Gal~~) (L)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1515	start		purge							DTW = 18.79 Flow = 300 mL/min
1525	18.79	300	1.5	6.85	10.78	0.938	-104	7.67	235	
1530	18.72	300	3.0	6.82	11.23	0.925	-118	6.81	188	
1535	18.71	300	4.5	6.82	11.14	0.926	-117	6.73	119	
1540	18.71	300	6.0	6.80	11.07	0.926	-126	6.26	70.4	
1545	18.71	300	7.5	6.80	11.07	0.927	-127	6.22	47.0	Initial DTW 18.79' btoc

OBSERVATIONS

Color: ___ Clear ___ Other (Describe): Gray at start of purge

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

gallons removed:

PID = 0

sampled @1550 (JBERGW0012)

* duplicate taken @1550 (JBERGW9000)

* turbidity out of stabilization, but decreasing

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): J. DeDauphn for M. Mathezzi

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: 41755WL-08	Site: DP098
Sampler(s): PA / CW	Project No:
Well Depth: 10.91	Date: 9-28-16 Time: 0955
DTW (Ft): 3.68 DTP (Ft): 0	Courier: X FedEx ~~X~~ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): ~~7.30 x .17 = 1.24~~ BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): Bailer
Condition of Bottom of Well: HARD	Type of Pump: Proactive 12 Volt DC Stainless Steel HAND BAIL
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2"	Clear / COLD 44'
Placement of Pump (Ft): N/A	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
0932	3.68	-	INT.	7.09	5.52	.351	175	13.15	21.4	
0934	4.30	-	1	6.79	6.00	.418	182	10.64	19.0	
0936	5.10	-	2	6.38	6.55	.459	186	10.51	19.3	
0938	6.40	-	3	6.45	6.47	.462	185	10.59	18.9	
0940	8.70	-	4	6.40	6.47	.461	186	10.54	18.8	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

Well was HAND Bailed, unable to get vehicle close enough to well to use battery to operate pump.

Sampled @ 0955 JBERGW0013 JW

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Pete Arroyo 9-28-16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: GW-5A	Site: JBER-E FT023
Sampler(s): AH SG	Project No: AF
Well Depth: 53.80	Date: 9/1/16 Time: 1040
DTW (Ft): 43.68 btoc DTP (Ft): —	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): —	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Hard bottom	Type of Pump: Proactive 12 Volt DC Stainless Steel 12.5 volts
Screen Interval (Ft): —	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2"	Clear, sunny, 55°F Wind from NE 5mph
Placement of Pump (Ft): 48 ft btoc	

FIELD PARAMETERS

952 PS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
955	43.65	.06	|	7.02	10.61	.639	-87	8.13	0.0	
959 1000	43.66	|	|	6.84	9.82	.647	-56	7.44	0.0	
1005	43.69	|	|	6.82	9.89	.648	-48	7.13	0.0	
1010	43.68	|	|	6.80	10.09	.648	-39	6.80	0.0	
1015	43.65	|	|	6.80	10.19	.648	-33	6.56	0.0	
1020	43.65	|	|	6.79	10.24	.648	-27	6.31	0.0	
1025	43.65	|	|	6.79	10.40	.647	-22	6.04	0.0	
1030	43.65	|	|	6.79	10.33	.648	-19	5.90	0.0	
1035	43.65	|	|	6.79	10.42	.648	-17	5.71	0.0	
1040	43.65	—	2.7	6.79	10.53	.648	-13	5.51	0.0	
									9/1/16	

OBSERVATIONS

Color: ☒ Clear ___ Other (Describe):

Odor: ___ None ☒ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

Sample JBERGW0014 @ 1040 hrs.

JDV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Scott Grant 9/1/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: ~~SU OU4-MW11~~ OU4W-11	Site: JBER-E FT023
Sampler(s): AH/SG	Project No: AF
Well Depth: 57.20	Date: 9/1/16 Time: 932
DTW (Ft): 46.68 DTP (Ft): —	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC —	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Hard bottom	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft): —	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2"	Sunny, clear, 48°F, Wind from NE 6mph
Placement of Pump (Ft): 54 ft bgs	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
829 PS										
832	46.68	.06		6.63	8.87	.714	-44	12.54	7.9	
837	46.68			6.76	9.73	.717	-84	8.83	5.4	
842	46.68			6.77	9.91	.721	-97	7.53	4.9	
847	46.68			6.82	10.43	.726	-110	2.69	0.0	
852	46.68			6.80	10.42	.728	-110	2.52	0.0	
857	46.68			6.79	10.68	.729	-112	2.23	0.0	
902	46.68			6.79	10.69	.732	-113	2.12	0.0	
907	46.68			6.80	11.21	.733	-115	1.90	0.0	
912	46.68			6.80	11.36	.733	-116	1.79	0.0	
917	46.68			6.81	11.57	.733	-118	1.67	0.0	
922	46.68			6.80	11.59	.732	-118	1.61	0.0	Spec Cond: .731
927	46.68			6.80	11.63	.731	-119	1.54	0.0	Orp: -119
932	46.68	↓	3.6	6.80	11.70	OBSERVATIONS		1.53	0.0	

Color: X Clear ___ Other (Describe):

Odor: ___ None X Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

~~Grant~~

~~(907) 227-0981~~

Sample JBERGW0015 @ 0932 hrs

JDV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): J. McDaylin for A. Hedgepath

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: IS6-01	Site: JBER-E SD029
Sampler(s): BA/CW	Project No:
Well Depth: 59.85	Date: 9/27/16 Time: 0903
DTW (Ft): 49.69 DTP (Ft):	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: Hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In):	
Placement of Pump (Ft):	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (~~GPM~~)	Total Volume (~~Gal~~)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
0905	49.69	300	1000	—	—	—	—	—	—	
0910	49.69	300	1300	7.68	6.92	.397	166	3.90	480	
0913	49.69	300	1600	7.12	6.74	.395	131	3.56	203	
0916	49.69	300	1900	7.04	6.75	.393	108	3.49	116	
0919	49.69	300	2200	7.02	6.71	.391	101	3.45	51.0	
0922	49.69	300	2500	7.00	6.71	.391	99	3.42	24.8	
0925	49.69	300	2800	6.99	6.72	.390	97	3.40	22.6	
0928	49.69	300	3100	6.99	6.71	.390	96	3.38	21.0	

OBSERVATIONS

Color: ___ Clear ___ Other (Describe):

Odor: ___ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: Sample taken @ 0930 JBERGW0016

JDV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] = ~~300~~

Recorded By (Print/Sign/Date): J. Dalton for P. Arroyo

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: SSØ2 MW 14	Site: SSØ22
Sampler(s): PA/MM	Project No: AFSØ66.Ø3.Ø4
Well Depth: 55.35	Date: 8/1/16 Time: 1515
DTW (Ft): 48.35 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Calm, 50°F
Well Diameter (In): 2	
Placement of Pump (Ft): 52 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ mL/min	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1422		300	Start Purge							very turbid
1430	48.39	300	2.4	6.09	9.79	Ø.17Ø	87	6.22	OR	
1495	48.40	300	6.9	5.76	8.49	Ø.221	218	10.36	413	
1450	48.40	300	8.4	5.90	8.05	Ø.181	236	9.93	175	
1500	48.40	300	11.4	5.90	8.30	Ø.174	251	9.43	32.6	
1505	48.40	300	12.9	5.91	8.20	Ø.174	257	9.27	2.5	
1510	48.39	300	13.41	5.92	8.28	Ø.173	259	9.05	Ø.Ø	

OBSERVATIONS

Color: ___ Clear ___ Other (Describe): Turbid - pump had Sediment When pulled, cleared up w/purge

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: obstruction in well at ~5 ft BTOC
* OR = Over Range
1435 - Recalibrated Meter, Turbidity was not working.

Sampled @ 1515 JBERGW0017

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi 8/1/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: 402WL-02	Site: JBER GW ST037
Sampler(s): NH SG	Project No: AF
Well Depth: 21.60	Date: 8.30.16 Time: ~~835~~ 937
DTW (Ft): 16.77 DTP (Ft): 19	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC –	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: Soft	Type of Pump: Proactive 12 Volt DC Stainless Steel 9.8 volts
Screen Interval (Ft): –	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2 in	Sunny/clear N wind 58°F
Placement of Pump (Ft): 19'	

FIELD PARAMETERS

835 purge start

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
842	16.82	275		6.19	10.55	.199	-32	1.46	82.4	
847	16.79			6.22	10.71	.200	-36	1.39	77.9	
852	16.78			6.18	10.61	.202	-45	1.28	66.9	
857	16.78			6.18	10.59	.204	-50	1.23	65.7	
902	16.78			6.18	10.60	.206	-53	1.16	61.6	
907	16.79			6.19	10.64	.207	-59	1.08	40.2	
912	16.81			5.95	10.50	.265	-52	1.06	1.8	
917	16.84			6.24	10.61	.303	-76	.90	0.4	
922	16.84			6.27	10.55	.327	-82	0.82	1.2	
927	16.84			6.28	10.56	.332	-85	0.80	4.9	
932	16.88			6.30	10.59	.349	-89	0.74	8.6	
937	16.89	275	4.00	6.31	10.60	.358	-91	0.73	7.4	
					.2	±3%	±10	10%	10%	

OBSERVATIONS

Color: ___ Clear ___ Other (Describe):

Odor: ___ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: Product found on tubing. Oily sheen on purge water

Sample JBERGW00206 0937 hrs and duplicate JBERGW 9001

JDV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): 8.30.16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: 403WL-01	Site: ST037
Sampler(s): PA/MM	Project No: MM ~~ST037~~ AF5066.03.04
Well Depth: 46.15	Date: 8/2/16 Time: 1345
DTW (Ft): 40.28 BTOC DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft):	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: Soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Calm 50°F
Well Diameter (In): 2	
Placement of Pump (Ft): 43 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	~~Flow Rate (GPM)~~ L/min	~~Total Volume (Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1305		350	Start		Purge					
1310	40.31	350	1.75	6.70	11.11	0.514	39	7.64	26.3	
1315	40.31	350	4.5	6.71	11.50	0.517	13	5.47	20.3	
1320	40.31	350	6.25	6.73	11.59	0.518	5	5.02	22.7	
1325	40.31	350	8.0	6.66	11.73	0.519	-12	3.89	5.3	
1330	40.31	350	9.75	6.65	12.34	0.518	-22	3.75	2.5	
1335	40.31	350	11.25	6.65	12.59	0.518	-18	3.67	1.7	
1340	40.31	350	13.0	6.65	11.77	0.518	-21	3.60	1.1	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:
sampled @ 1345 (JBERGW0021)
PID = 0

* temp out of stabilization
2 gal removed

duplicate taken @ 1345,
sample ID: JBERGW9003

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi MM ~~MM~~ 8/2/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: 49WL-01	Site: JBER ST037
Sampler(s): AH/SG	Project No:
Well Depth: 24.95	Date: 8/30/16 Time: 1130
DTW (Ft): 14.58 BTOC DTP (Ft):	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): —	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Hard bottom	Type of Pump: Proactive 12 Volt DC Stainless Steel 9 volts
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2"	Clear, Sunny, 65° F, Wind from South 5mph
Placement of Pump (Ft): 21 ft bgs	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1000	14.58	200 ml/min		7.13	11.31	.493	-74	5.08	51.8	
1005	14.58			6.81	11.50	.495	-71	4.91	36.7	
1010	14.54			6.74	11.76	.499	-70	4.73	56.6	
1015	14.54			6.75	12.06	.500	-71	4.51	53.5	
1020	14.55			6.75	12.41	.497	-74	4.26	42.2	
1025	14.55			6.77	12.66	.492	-77	3.97	37.1	
1030	14.55			6.76	12.95	.488	-84	3.54	27.8	
1035	14.55			6.76	13.21	.485	-88	3.20	17.3	
1040	14.58			6.76	13.44	.483	-90	2.92	8.5	
1045	14.54			6.77	13.64	.481	-92	2.67	5.6	
1050	14.54			6.76	13.80	.479	-94	2.43	0.0	
1055	14.58	—		6.76	13.92	.477	-95	2.25	0.0	
				.1	.2	.02	5	10%	10%	

OBSERVATIONS

Color: ✓ Clear ___ Other (Describe):

Odor: ✓ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: Per ADEC guidance, 4 of 6 parameters were stable. Sample collected.

Sample JBERGW0023 @ 1130 hrs

JJV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Scott Grant / [signature] / 8/30/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: 49WL-01	Site: JBER ST037
Sampler(s): AH/SG	Project No:
Well Depth: 24.95	Date: 8/30/16 Time: 1130
DTW (Ft): 14.58 DTP (Ft):	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC —	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Hard Diatom	Type of Pump: Proactive 12 Volt DC Stainless Steel 9 volts
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2"	Sunny, clear, 65°F, wind from south 5mph
Placement of Pump (Ft): 21 ft bgs	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
~~1055~~ 1100	14.58	200 mL/min		6.77	14.04	.476	-96	2.05	0.0	
1105	14.55			6.77	14.16	.475	-96	1.89	0.0	
1110	14.55			6.76	14.30	.474	-97	1.71	0.0	
1115	14.55			6.76	14.36	.471	-97	1.60	0.0	
1120	14.55			6.76	14.43	.470	-97	1.45	0.0	Per ADEC guidance,
1125	14.56			6.76	14.51	.470	-98	1.33	0.0	4 of 6 parameters
1130	14.56			6.76	14.60	.469	-98	1.23	0.0	were stable. Sample
										collected

.2 10%

OBSERVATIONS

Color: ✓ Clear ___ Other (Describe):

Odor: ✓ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Scott Grant / [signature] / 8/30/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: GW-4A	Site: ST037
Sampler(s): PA/MM	Project No: AF5066.03.04
Well Depth: 12.0 ft BTOC	Date: 8/1/2016 Time: 1135
DTW (Ft): 5.74 ft BTOC DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft):	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain), Wind Speed/Direction, Air Temperature °F): Calm, 50°F
Well Diameter (In): 2 inch	
Placement of Pump (Ft): 10 ft BTOC	

Start pumping at 1110

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ mL/min	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1113	5.73	200	600	6.04	12.85	0.256	45	7.11	2.6	
1118	5.72	200	1.6	6.05	12.67	0.262	32	5.86	2.4	
1123	5.78	200	2.6	6.16	12.34	0.266	19	5.46	2.3	
1128	5.78	200	3.6	6.13	11.66	0271	11	5.24	2.5	
1133	5.78	200	4.6	6.13	11.61	0.269	10	5.26	2.1	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

Sampled @ 1135 JBERGW0024 JDV 8/1/16

Removed 2.5 gal.

No lock on well

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Pete Arroyo 8-1-16

GROUNDWATER SAMPLING FIELD DATA SHEET

OU3MW-02

Well No: ~~OU3-MW02~~ MM	Site: ST037
Sampler(s): PA/MM	Project No: AF5066.03.04
Well Depth: 39.00	Date: 8/4/16 Time: 0920
DTW (Ft): 28.33 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm, 50°F
Well Diameter (In): 2	
Placement of Pump (Ft): 34 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ L/M	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
0846	28.39	200	Start	Purge						
0851	28.39	200	1.0	6.37	13.86	0.510	171	6.35	13.2	
0856	28.39	200	2.0	6.43	13.90	0.522	167	3.52	5.8	
0901	28.39	200	3.0	6.41	13.53	0.546	163	2.13	10.1	
0906	28.39	200	4.0	6.41	13.58	0.544	164	2.17	9.8	
0911	28.39	200	5.0	6.40	13.56	0.544	162	2.13	5.6	
0916	28.39	200	6.0	6.39	13.58	0.544	162	2.09	5.1	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

sampled @ 0920 (JBERGW0026)

PID = 0

gallons removed: 1.5

* take MS/MSD (JBERGW0026-MS + JBERGW0026-MSD)

* turbidity out of stabilization, but last 3 readings are <10 NTU

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg 8/4/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: OU3MW-11	Site: ST037
Sampler(s): PA/MM	Project No: AF5066.03.04
Well Depth: 45.75	Date: 8/3/16 Time: 1335
DTW (Ft): 11.91 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Calm, 70°F
Well Diameter (In): 2	
Placement of Pump (Ft): ~~26~~ MM 40 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ LPM	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1300		300	Start			Purge				
1305	11.96	300	1.5	6.25	12.12	0.517	104	5.11	0.0	
1310	11.96	300	3.0	6.28	10.93	0.515	91	3.80	0.0	
1315	11.96	300	4.5	6.29	10.63	0.512	84	2.77	0.0	
1320	11.96	300	6.0	6.30	10.22	0.512	80	1.94	0.0	
1325	11.96	300	7.5	6.31	10.37	0.512	80	1.88	0.0	
1330	11.96	300	9.0	6.33	10.24	0.513	79	1.81	0.0	
1335	11.96	300	10.5	6.33	10.14	0.514	78	1.78	0.0	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:
PID = 0
Sampled @ 1335 (SBERGW0027)
gallons removed: 2.5

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi 8/3/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: OUSMW-03	Site: JBER ST037
Sampler(s): AH + SG	Project No: AF
Well Depth: 46.45	Date: 8/29/16 Time: ~~1420~~ 1505
DTW (Ft): 33.65 DTP (Ft): —	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC —	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Hard	Type of Pump: Proactive 12 Volt DC Stainless Steel 11.2 volts
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Sunny/clear 73°F E blwly
Well Diameter (In): 2"	
Placement of Pump (Ft): 43' BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1425	33.64	.053		6.68	10.90	.574	-43	2.60	0.0	
1430	33.66			6.76	11.13	.573	-66	2.38	0.0	
1435	33.67			6.80	11.39	.571	-82	2.12	0.0	
1440	33.67			6.81	11.54	.571	-87	1.95	0.0	
1445	33.67			6.81	11.68	.570	-91	1.86	0.0	
1450	33.67			6.81	11.98	.571	-95	1.69	0.0	
1455	33.67			6.81	12.06	.571	-96	1.62	0.0	
1500	33.67			6.81	12.06	.572	-98	1.54	0.0	
1505	33.67		.424	6.80	12.11	.572	-100	1.50	0.0	
				.1	3%	3%	±10	10%	10%	

OBSERVATIONS

Color: ✓ Clear ___ Other (Describe):

Odor: ✓ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: None

Sample JBERGW0022 @ 1505 hrs

JDV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Scott Grant / [signature] / 8/29/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: OU5MW-06	Site: ST037
Sampler(s): PA/MM	Project No: AF5066 03.04
Well Depth: 48.25	Date: 8/3/16 Time: 1525
DTW (Ft): 34.88 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm, 70°F
Well Diameter (In): 2	
Placement of Pump (Ft): 43 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ mL/min	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1454	34.96	300	Start	Purge						
1459	34.95	300	1.5	6.76	11.61	0.475	-84	4.43	85.5	
1504	34.95	300	3.0	6.78	12.97	0.463	-99	2.46	82.9	
1509	34.95	300	4.5	6.77	13.39	0.455	-98	2.06	81.9	
1514	34.95	300	6.0	6.77	13.39	0.457	-98	2.11	81.9	
1519	34.95	300	7.5	6.73	13.42	0.457	-96	1.97	87.3	
1524	34.95	300	9.0	6.73	13.49	0.457	-93	1.93	86.6	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

PID=0

sampled @ 1525 (SBERGW0028)

gallons removed = 2.5

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg 8/3/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: OU5MW-07	Site: ST037
Sampler(s): PA/MM/CW	Project No: AF5066.03.04
Well Depth: 49.25	Date: 8/10/16 Time: 1515
DTW (Ft): 32.75 DTP (Ft): ~	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm 60°F
Well Diameter (In): 2	
Placement of Pump (Ft): 44 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (~~GPM~~) mL/min	Total Volume (~~Gal~~) L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1430	~~2000~~	200	start	purge						DTW = 32.75
1435	~~2000~~	2000	1.0	6.70	9.33	0.312	-66	4.46	181	DTW = 32.75
1440	32.75	200	2.0	6.71	9.39	0.289	-68	3.65	204	
1445	32.75	200	3.0	6.71	9.51	0.273	-60	3.36	187	
1450	32.75	200	4.0	6.58	9.80	0.266	-42	3.01	143	
1455	32.75	200	5.0	6.61	10.05	0.258	-25	2.71	150	
1500	32.75	200	6.0	6.61	10.00	0.258	-25	2.72	147	
1505	32.75	200	7.0	6.61	10.02	0.259	-19	~~0.~~	142	D.O. = 2.70
1510	32.75	200	8.0	6.61	9.93	0.259	-18	2.71	140	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

PID = 0

gallons removed:

sampled @ 1515 (SBERGW0029)

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg Matteazzi 8/10/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: QU5-MW31	Site: JBER ST037
Sampler(s): AH/SG	Project No:
Well Depth: 9.55	Date: 8/31/16 Time: 908
DTW (Ft): 4.68 DTP (Ft): —	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Hard bottom	Type of Pump: Proactive 12 Volt DC Stainless Steel 5 volts
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2"	Sunny, clear, 46°F, Wind from N 1-3 mph
Placement of Pump (Ft): 7 ft bgs	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
828	4.68	.066		6.55	10.29	.292	6	8.83	0.0	
833	4.66			6.41	10.12	.294	-19	7.41	0.0	
838	4.66			6.48	10.26	.294	-32	6.61	0.0	
843	4.66			6.58	10.46	.292	-41	5.96	0.0	
848	4.66			6.56	10.62	.292	-48	5.47	0.0	
853	4.66			6.58	10.70	.292	-52	5.10	0.0	
858	4.66			6.59	10.85	.290	-56	4.72	0.0	
~~903~~ 903	4.66			6.60	10.79	.291	-58	4.46	0.0	
908	4.66			6.60	10.75	.292	-60	4.28	0.0	Batteries died in Horiba
~~913~~										
								8/31/16		

OBSERVATIONS

Color: ✓ Clear ___ Other (Describe):

Odor: ✓ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

None

Sample JBERGW0025 @ 0908 hrs

JDV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Scott Grant / [signature] / 8/31/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: OUSMW-38	Site: ST037
Sampler(s): PA/MM	Project No: AF5066.03.04
Well Depth: 59.40	Date: 8/3/16 Time: 1435
DTW (Ft): 30.80 DTP (Ft):	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm 70°F
Well Diameter (In): 2	
Placement of Pump (Ft): 55 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal) L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1357	30.82	300	start		Purge					
1402	30.82	300	1.5	6.60	11.94	0.449	6	3.40	0.0	
1407	30.82	300	3.0	6.49	11.58	0.464	25	2.50	0.0	
1412	30.82	300	4.5	6.47	11.57	0.463	38	2.00	0.0	
1417	30.82	300	6.0	6.46	11.58	0.463	61	1.81	0.0	
1422	30.82	300	7.5	6.48	11.88	0.461	62	1.79	0.0	
1427	30.82	300	9.0	6.46	11.82	0.462	66	1.82	0.0	
1432	30.82	300	10.5	6.46	11.72	0.463	69	1.86	0.0	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:
PID=0
Sampled @1435 (SBERGW0030)
gallons removed: 2.5

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg Matt 8/3/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: 045MW-44	Site: JBER-E ST037
Sampler(s): PA | CW	Project No: AFSØ66.Ø4.Ø5
Well Depth: 41.55	Date: 9|16|2016 Time: 0928
DTW (Ft): 31.04' BTOC DTP (Ft): 36'	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft):	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Overcast, Light Rain, 47°
Well Diameter (In): 2"	
Placement of Pump (Ft): 36'	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
0945	31.04	400	2000	6.27	9.67	0.337	142	6.17	176	
0948	31.04	400	3600	6.46	9.62	.338	143	5.77	100	
0951	31.04	400	4800	6.55	9.62	.348	145	5.32	46	
0954	31.04	400	5200	6.58	9.62	.355	145	5.00	39	
0957	31.04	400	6400	6.61	9.61	.353	139	4.64	36	
1000	31.04	400	7600	6.62	9.63	.352	135	4.46	30	
1003	31.04	400	8800	6.63	9.61	.352	137	4.49	28	
1006	31.04	400	9000	6.64	9.63	.352	136	4.46	27	

OBSERVATIONS

Color: ___ Clear ✓ Other (Describe): Cloudy

Odor: ✓ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: PID = Ø PPM
Sample ID: JBERGW0031
Time: 1010
Date: 9/16/2016

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Carla White / Candace White (mcuc) / 9/16/2016

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: SP1-02	Site: ST0037
Sampler(s): PA/MM	Project No: AF5066 03.04
Well Depth: 50.75	Date: 8/2/16 Time: 1510
DTW (Ft): 35.50 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Calm 50°F
Well Diameter (In): 2 in.	
Placement of Pump (Ft): 42 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ LPM	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1430	begin		purge		350	mL/min				
1435	35.80	300	1.5	6.92	10.05	0.407	19	5.23	6.9	
1440	35.76	300	3.0	6.82	9.76	0.410	26	3.65	0.5	
1445	35.75	300	4.5	6.79	9.76	0.408	29	2.79	0.0	
1450	35.75	300	6.0	6.77	11.73	0.398	33	2.07	0.0	
1455	35.75	300	7.5	6.76	11.97	0.397	36	2.01	0.0	
1500	35.75	300	9.0	6.76	11.93	0.397	36	1.97	0.0	D.O. = 1.97 mg/L
1505	35.75	300	10.5	6.75	11.95	0.397	38	1.95	0.0	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

PID=0

sampled @1510 (JBERGW0032)

removed 3 gal

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg MT 8/2/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: TU 091 MW-01	Site: TU 091
Sampler(s): PA / MM	Project No: AF5066.04.03
Well Depth: 32.70	Date: 8/2/16 Time: 1648
DTW (Ft): 27.30 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm 55°F
Well Diameter (In): 2	
Placement of Pump (Ft): 30 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate L/min ~~(GPM)~~	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1538	27.44	300	Start	Purge					100	turbid for Horiba
1557	27.43	300	~~6~~ MM 5.7	6.52	11.63	0.234	74	3.68	949	
1602	27.44	300	7.2	6.42	10.87	0.244	81	3.20	826	
1607	27.43	300	8.7	6.39	10.51	0.249	87	3.01	429	
1612	27.43	300	10.2	6.35	11.13	0.247	81	3.08	229	
1617	27.44	300	11.7	6.35	10.42	0.251	86	2.65	92.8	wait for turbidity to drop
1630	27.44	300	~~13.2~~ MM 15.9	6.34	10.49	0.254	91	2.36	30.2	
1635	27.44	300	17.4	6.34	10.54	0.254	92	2.31	29.4	
1640	27.44	300	18.9	6.34	10.59	0.254	93	2.26	28.7	
1645	27.44	300	20.4	6.34	10.62	0.254	97	2.22	27.5	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

PID = 0

sampled @ 1648 (JBERGW00033)

gallons removed: ~5

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan MatHazzi Meg M 8/2/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-3747	Site: CG039
Sampler(s): PA/MM/CW	Project No: AF5066-03.04
Well Depth: 32.00	Date: 8/8/16 Time: 1350
DTW (Ft): 26.30 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm, 60°F
Well Diameter (In): 4	
Placement of Pump (Ft): 29.0 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ L/min	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1315	26.63	300	Start	Purge						
1320	26.72	300	1.5	7.50	9.44	0.224	0	7.98	26.4	
1325	26.76	300	3.0	7.48	9.74	0.220	2	6.35	31.2	
1330	26.78	300	4.5	7.42	11.35	0.214	4	5.19	41.2	
1335	26.79	300	6.0	7.43	12.85	0.215	5	5.18	40.7	
1340	26.82	300	7.5	7.42	13.69	0.215	7	5.19	39.3	
1345	26.87	300	9.0	7.42	13.56	0.215	11	5.19	~~37.2~~	turb = 37.2

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:
PID = 0
gallons removed = 2
sampled @ 1350 (SBEMW0001)
* temp out of stabilization

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg Matt 8/8/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-4344	Site: JBER-R CG039
Sampler(s): PA/CW	Project No: AF5PL66.04.05
Well Depth: 163.45	Date: 9/15/16 Time: 0940
DTW (Ft): 151.0 DTP (Ft): N/A	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Overcast/Rain @ 48°
Well Diameter (In): 2"	
Placement of Pump (Ft): 158'	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume ~~(Gal)~~ mL	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1001	151.05	300mL	1000	6.35	7.17	0.255	164	11.28	142	
1004	151.05	300	1900	6.84	7.11	.253	166	10.50	150	
1007	151.05	300	2800	7.01	7.04	.252	167	10.25	147	
1010	151.05	300	3700	7.20	7.03	.252	168	9.76	110	
1013	151.05	300	4600	7.28	7.03	.252	168	9.37	90.6	
1016	151.05	300	5500	7.34	7.17	.251	167	8.92	73.8	
1019	151.05	300	6400	7.37	7.32	.251	166	8.55	50.8	
1022	151.05	300	7300	7.41	7.25	.251	165	8.26	52.4	
1025	151.05	300	8200	7.43	7.40	.250	164	8.03	50.1	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

START Pump @ 0945

Sample ID @ 0940 / JBERGW0002

Sampled @ 1037

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Candace White (mccc) / Candace White / 9/16/2016

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-4349	Site: CG039
Sampler(s): PA/MM/CW	Project No: AF5066.03.04
Well Depth: 84.20	Date: 8/8/16 Time: 1240
DTW (Ft): 76.32 DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm, 50°F
Well Diameter (In): 2	
Placement of Pump (Ft): 79 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ mL	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1205	77.05	300	Start Purge							
1210	76.96	300	1.5	7.07	13.79	0.191	-34	5.44	236	
1215	76.90	300	3.0	7.30	13.84	0.195	-45	5.09	237	
1220	76.90	300	4.5	7.40	13.45	0.198	-46	4.06	232	
1225	76.89	300	6.0	7.42	13.25	0.198	-43	4.07	231	
1230	76.88	300	7.5	7.44	13.17	0.198	-39	4.09	223	
1235	76.91	300	9.0	7.46	12.75	0.198	-37	4.09	223	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

PID=0

gallons removed: 2

Sampled @1240 (JBEMGW0003)

*temp not stabilized

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi 8/8/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-4350	Site: JBER-R CG039
Sampler(s): PA / CW	Project No: AF5066, 04.05
Well Depth: 187	Date: 9/15/16 Time: 1104
DTW (Ft): 149.33 DTP (Ft):	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Cloudy 51°F
Well Diameter (In): 2"	
Placement of Pump (Ft): 170'	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal/mL)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1130	149.33	400	1200	7.61	7.90	.365	144	7.11	0.0	Water Clear.
1133	149.33	400	2400	7.61	7.82	.367	144	6.95	0.0	
1136	149.33	400	3600	7.62	7.84	.369	142	6.79	0.0	
1139	149.33	400	4800	7.63	7.93	.370	141	6.65	0.0	
1142	149.33	400	5000	7.63	8.16	.372	140	6.55	0.0	
1145	149.33	400	6200	7.62	8.32	.374	142	6.54	0.0	
1148	149.33	400	7400	7.43	8.08	.378	149	6.56	0.0	
1151	149.33	400	8600	7.53	8.18	.379	144	6.47	0.0	

OBSERVATIONS

Color: ✓ Clear ___ Other (Describe):

Odor: ✓ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: Could not find bottom of well to confirm depth. Depth recorded taken from well depth
JBERGW0004 1153

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Candace White / Candace White (mcllc) / 9/16/2016

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-4353	Site: CG0039
Sampler(s): PA/MM/CW	Project No: AF50660304
Well Depth: 69.35	Date: 8/8/16 Time: 1015
DTW (Ft): 33.58 DTP (Ft):	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: Hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Calm, 50°F
Well Diameter (In): 2	
Placement of Pump (Ft): 64 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	~~Flow Rate (GPM)~~ mL/min	~~Total Volume (Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
0940	34.33	350	Start Purge							
0945	34.23	350	1.75	6.34	13.65	0.275	18	4.18	0.0	
0950	34.18	300	3.25	6.44	13.45	0.271	-30	3.45	0.0	
0955	34.14	~~300~~ 100	3.75	6.44	13.45	0.271	-30	3.50	0.0	Flow rate decreased to 100 mL/min
1000	34.11	~~300~~ 100	4.25	6.44	13.45	0.271	-30	3.50	0.0	
1005	34.08	100	4.75	6.44	13.45	0.271	-31	3.50	0.0	
1010	34.09	100	5.25	6.44	13.45	0.271	-30	3.50	0.0	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

PID = 0 *drawdown > 1/3 ft.

sampled @ 1015 (JBERGW0005)

gallons removed: 1.5

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg Matt 8/8/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-45-50	Site: C G039
Sampler(s): PA/MM/CW	Project No: AF5066.04.03
Well Depth: 42.75	Date: 8/8/16 Time: 1125
DTW (Ft): 25.97 BTOC DTP (Ft): —	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft):	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: hard	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm, 50°F
Well Diameter (In): 2	
Placement of Pump (Ft): 37 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ L/min	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1040	26.96	200								
1049	27.78	200	~~1.0~~ MM	6.57	14.84	0.369	-89	4.55	139	Vol = 1.8L
1054	26.79	200	2.8	6.50	15.26	0.374	-88	2.57	129	
1059	26.69	200	3.8	6.46	15.77	0.372	-88	2.01	130	
1104	26.69	200	4.8	6.44	16.34	0.387	-90	1.68	129	
1109	6 MM	200	5.8	6.28	16.71	0.460	-85	1.31	129	DTW: 26.65
1114	26.69	200	6.8	6.28	16.79	0.461	-85	1.30	127	
1119	26.69	200	7.8	6.27	16.81	0.461	-84	1.29	121	
1124	26.69	200	8.8	6.27	16.81	0.461	-82	1.27	125	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

PID = 0

gallons removed: 2

sampled @ 1125 (JBERGW0006)

* dup taken; sample time: 1125 (JBERGW9002)

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Matteazzi Meg Mat 8/8/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-3468	Site: JBER-R DA089
Sampler(s): AH SG	Project No: AF
Well Depth: 114.65	Date: 9/1/16 Time: 1526
DTW (Ft): 110.50 BTOC DTP (Ft):	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft):	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP
Condition of Bottom of Well: Hard bottom	Type of Pump: Proactive 12 Volt DC Stainless Steel 21 volts
Screen Interval (Ft): —	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):
Well Diameter (In): 2"	Sunny, 64°F, wind from SE 7 mph
Placement of Pump (Ft): 113 ft btoc	

FIELD PARAMETERS

PS 1428

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1431	110.55	.053		7.35	14.86	.473	-57	9.95	4.1	
1436	110.69	|		7.38	11.91	.470	-70	9.31	3.5	
1441	110.83	|		7.34	11.16	.482	-71	8.33	55.6	
1446	111.01	|		7.34	10.65	.492	-74	8.46	23.8	
1451	111.28	|		7.29	10.55	.494	-84	8.08	18.4	
1456	110.99	|		7.26	12.50	.476	-91	7.03	12.2	
1501	110.97	|		7.25	12.36	.472	-92	6.79	12.4	
1506	110.07	|		7.10	12.35	.490	-98	6.50	13.3	
1511	111.18	|		7.13	10.49	.502	-99	6.91	10.2	
1516	111.33	|		7.23	10.63	.493	-94	7.07	1.9	
1521	111.36	|		7.26	10.43	.492	-92	7.07	0.0	
1526	111.39	—		7.29	10.45	.492	-90	7.15	0.0	

OBSERVATIONS

Color: ___ Clear ___ Other (Describe):

Odor: ___ None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

Sample JBERGW0009 @ 1526 hrs

JDV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): J. VanDaylen for A. Hedgepath

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-4413	Site: JBER-R DA089
Sampler(s): AA SG	Project No: AF
Well Depth: 75.30	Date: 8.31.16 Time: 1533
DTW (Ft): 71.93 DTP (Ft): 74.5	Courier: ___ FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft): BTOC	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP 16 volts
Condition of Bottom of Well: Soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft): —	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): 75° Sunny, wind from NE 5mph
Well Diameter (In): 2 in	
Placement of Pump (Ft): 74.5	

FIELD PARAMETERS

PS 1415

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1418	71.95	.053		6.57	11.11	.975	-93	5.87	130	
1423	71.95			6.55	12.08	.970	-98	4.89	132	
1428	71.95			6.54	12.57	.977	-100	4.50	123	
1433	71.99			6.56	12.58	1.00	-109	2.79	150	
1438	72.00			6.49	12.59	.993	-97	2.11	147	WL 72.01
1443	72.10			6.42	12.52	.986	-89	1.39	140	
1448	72.11			6.42	12.56	.967	-89	1.42	143	
1453	72.11			6.42	12.54	.959	-88	1.28	150	
1458	72.12			6.42	12.67	.958	-88	1.23	152	
1503	72.12			6.42	12.78	.958	-88	1.13	144	
1508	72.13			6.42	12.93	.955	-89	1.08	138	
1513	72.12	—	2.9	6.42	13.21	.949	-89	.99	129	

OBSERVATIONS

Color: ~~X~~ Clear ___ Other (Describe):

Odor: ___ None ___ Low X Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: Water has an odor, but not sure of what.

Sample JBERGW0010 @ 1533 hrs

JAV

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): J. VanDenym for S. Grant

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-4413		Site: JBER-R DAPB9	
Sampler(s): AH/SG		Project No: AF	
Well Depth: 75.30		Date: 8/31/16	Time: 1533
DTW (Ft): 71.93	DTP (Ft):	Courier: ___ FedEx ___ Hand ___ Lab Courier	
MP Height AGS/BGS (Ft): BTOC		Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump): SP 16 volts	
Condition of Bottom of Well: Soft		Type of Pump: Proactive 12 Volt DC Stainless Steel	
Screen Interval (Ft): -		Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F):	
Well Diameter (In): 2"		75°F, Sunny, wind from N @ 5mph	
Placement of Pump (Ft): 74.5			

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU) ✓	Temp (°C) ✓	Spec. Cond. (mS/cm) ✓	ORP (mV) ✓	D.O. (mg/L)	Turb (NTU)	Comments
1518	72.08	.053	3.2	6.42	13.23	.942	-89	.95	139	
1523	72.01			6.42	13.22	.941	-89	.89	128	
1528	71.95			6.42	13.32	.941	-89	.93	126	
1533				6.42	13.28	.941	-88	.88		

OBSERVATIONS

Color: ✓ Clear ___ Other (Describe):

Odor: ___ None ___ Low X Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes: Water has an odor, but not sure of what.

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): J. VanDam for S. Grant

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-2982	Site: SS044
Sampler(s): PA	Project No: AF5066.03.04
Well Depth: 23.90	Date: 8-16-16 Time: 1245
DTW (Ft): 12.89 BTOC DTP (Ft): —	Courier: ___ FedEx X Hand ___ Lab Courier
MP Height AGS/BGS (Ft):	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: Soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): Sunny/Cloudy calm, 55°F
Well Diameter (In): 2"	
Placement of Pump (Ft): 18'	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate (GPM)	Total Volume (Gal)	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
1210	12.91	200	—	5.94	14.93	0.144	119	7.43	359	
1215	12.93	200	1L	6.00	12.48	0.124	81	10.70	281	
1220	12.92	200	2L	6.09	11.75	0.118	63	10.09	174	
1225	12.92	200	3L	6.12	11.56	0.114	56	9.37	114	
1230	12.92	200	4L	6.16	11.59	0.109	46	8.29	62.4	
1235	12.92	200	5L	6.17	11.61	0.108	44	8.11	57.6	
1240	12.92	200	6L	6.18	11.65	0.105	41	8.16	52.4	
1245	12.92	200	7L	6.18	11.67	0.104	40	8.12	48.2	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:

Start Pumping @ 1204

PID = 0

Sampled @ 1245 (SBERGW0018)

* took MS (SBERGW0018-MS) and MSD (SBERGW0018-MSD)

gallons removed: 2.5

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Pete Arroyo 8/16/16

GROUNDWATER SAMPLING FIELD DATA SHEET

Well No: AP-3231	Site: SS 044
Sampler(s): MM / CW	Project No: AF5066.03.04
Well Depth: 23.41	Date: 8/16/16 Time: 1320
DTW (Ft): 15.47 BTOC DTP (Ft):	Courier: X FedEx ___ Hand ___ Lab Courier
MP Height AGS/BGS (Ft):	Sampling Method (G=Grab, B=Bailer, SP=Submersible Pump):
Condition of Bottom of Well: Soft	Type of Pump: Proactive 12 Volt DC Stainless Steel
Screen Interval (Ft):	Weather (Sun/Clear, Overcast/Rain, Wind Speed/Direction, Air Temperature °F): calm, 55°F
Well Diameter (In): 2	
Placement of Pump (Ft): 18 ft BTOC	

FIELD PARAMETERS

Time	DTW (Ft)	Flow Rate ~~(GPM)~~ L/min	Total Volume ~~(Gal)~~ L	pH (SU)	Temp (°C)	Spec. Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turb (NTU)	Comments
~~1200~~	15.47	300		Start		purge				time: 1258
1255	15.48	300	1.5	6.00	13.49	0.092	175	9.50	18.7	
1300	15.48	300	3.0	6.06	13.75	0.091	180	9.26	14.0	
1305	15.48	300	4.5	6.01	14.09	0.091	178	7.72	12.0	
1310	15.48	300	6.0	6.02	14.10	0.091	188	7.67	11.7	
1315	15.48	300	7.5	6.02	14.21	0.092	187	7.59	11.4	
1320	15.48	300	9.0	6.01	14.26	0.092	185	7.41	11.1	

OBSERVATIONS

Color: X Clear ___ Other (Describe):

Odor: X None ___ Low ___ Medium ___ High ___ Very Strong ___ H_2S ___ Fuel-Like

Notes:
Sampled @ 1320 (JBERGW 0019)
gallons removed: 2.0
PID = 0

Purge Volume Calculation: Well Casing Volume = (Well TD [Ft] - Static Water Level [Ft]) * 3.14 * (Casing Radius [Ft])^2 * 7.48 [Gal/Ft^3] =

Recorded By (Print/Sign/Date): Megan Maffazzi Meg Maff 8/16/16

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APPENDIX B

WASTE DISPOSAL DOCUMENTATION

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Waste Material Profile Report
EA0707

Profile Information

EW Profile #: N4963 **Status** A

Common Name: IDW BORE CUTTINGS

Product: SOLIDS **Process:** DISPOSAL **Type:** S SOLID WASTE

Company Information

Generator	Mailing Address	Disposal Facility
673 CES/CEIEC	HydroGeoLogic, Inc.	NRC ALASKA LLC
BLDG 724	581 Boston Mills Road	2020 VIKING DRIVE
AK8570028649	Suite 600	
JBER, AK 99505	Hudson, OH 44236	ANCHORAGE, AK 99501

DOT Information

DOT Name: Material Not Regulated by DOT

Container Type: **Container Size:** **State Waste Code:**

Regulatory Information

Source: **Form:** **Mgmt Method:** **Generating**

Compositions

Generator Knowledge

Constituent	Low	High	Ind.	UM
ARSENIC	0	5	<	
BARIUM	0	100	<	
WATER	1	20		
SUMP GRIT AND SAND	90	99		
SILVER	0	5	<	
SELENIUM	0	1	<	
OIL	1	5		
CADMIUM	0	1	<	
CHROMIUM	0	5	<	
LEAD	0	5	<	
MERCURY	0	.2	<	

Physical

Constituent	Low	High	Ind.	UM
% LIQUID				
FLASH POINT	200		>	
COLOR				
% SOLID				
% SLUDGE				
ODOR				

Waste Codes

I authorize _____ to make corrections to this waste profile. I understand that I will be given written confirmation of any changes ☐ *Yes* ☐ *No*

I hereby avow that any pertinent information that is known by the generator conerning possible hazards has been disclosed. I certify that, to the best of my knowledge, all statements and attachments are correct and accurate representations of this waste material.

Signee Name	Signee Date	Signee Title
_____	_____	_____

Company _____

Waste Material Profile Report
EA0302

Profile Information

EW Profile #: N4964 **Status** A

Common Name: IDW DECON WATER/GROUNDWATER

Product: DISPOSAL **Process:** DISPOSAL **Type:** S SOLID WASTE

Company Information

Generator	Mailing Address	Disposal Facility
673 CES/CEIEC	HydroGeoLogic, Inc.	NRC ALASKA LLC
BLDG 724	581 Boston Mills Road	2020 VIKING DRIVE
AK8570028649	Suite 600	
JBER, AK 99505	Hudson, OH 44236	ANCHORAGE, AK 99501

DOT Information

DOT Name: Material Not Regulated by DOT

Container Type: **Container Size:** **State Waste Code:**

Regulatory Information

Source: **Form:** **Mgmt Method:** **Generating**

Compositions

Generator Knowledge

Constituent	Low	High	Ind.	UM
ARSENIC	0	5	<	
BARIUM	0	100	<	
WATER	90	100		
SILVER	0	5	<	
SELENIUM	0	1	<	
OIL	1	10		
CADMIUM	0	1	<	
CHROMIUM	0	5	<	
DIESEL	1	5		
LEAD	0	5	<	
MERCURY	0	.2	<	

Physical

Constituent	Low	High	Ind.	UM
% SOLID				
% SLUDGE				
% LIQUID				
COLOR				
ODOR				

Waste Codes

I authorize _____ to make corrections to this waste profile. I understand that I will be given written confirmation of any changes ☐ *Yes* ☐ *No*

I hereby avow that any pertinent information that is known by the generator conerning possible hazards has been disclosed. I certify that, to the best of my knowledge, all statements and attachments are correct and accurate representations of this waste material.

Signee Name	Signee Date	Signee Title
_____	_____	_____

Company _____

*** IN CASE OF EMERGENCY CALL 1-800-899-4672 ***

109166 (RF

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

86

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. AK8570028649

Manifest Document No. 109166

2. Page 1 of 1

3. Generator's Name and Mailing Address
673 CES/CEIEC
730 QUARTERMASTER DRIVE
JBER, AK 99505

673 CES/CEIEC
BLDG 724
JBER, AK 99505

4. Generator's Phone ( )

5. Transporter 1 Company Name: NRC ALASKA LLC

6. US EPA ID Number: AKR000004184

A. State Transporter's ID

B. Transporter 1 Phone ~~(907) 258-1558~~

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
NRC ALASKA LLC
2020 VIKING DRIVE
ANCHORAGE, AK 99501

10. US EPA ID Number: AKR000004184

E. State Facility's ID

F. Facility's Phone (907) 258-1558

GENERATOR

HM	11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	MATERIAL NOT REGULATED BY D.O.T. (NON-RCRA/TSCA CONTAMINATED SOIL)		1 DM	800	P
b.	MATERIAL NOT REGULATED BY D.O.T. (NON-RCRA/TSCA CONTAMINATED WATER)		2 DF	800	P
c.					
d.					

G. Additional Descriptions for Materials Listed Above
1) EA0707 IDW BORE CUTTINGS
2) EA0302 IDW DECON WATER/GROUNDWATER

H. Handling Codes for Wastes Listed Above
D6913

15. Special Handling Instructions and Additional Information
Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month / Day / Year)
WAYNE A. HUGHES	Wayne A. Hughes	12 / 8 / 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
ROY C TRISDALE JR	Roy C Trisdale Jr	12 / 8 / 16

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month / Day / Year)
Patricia L. Beasley	Patricia L Beasley	12 / 20 / 16

NON-HAZARDOUS WASTE

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109166 (RF

NON-HAZARDOUS WASTE MANIFEST

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86

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. AKR570028649	Manifest Document No. 109166	2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
673 CES/CEIEC
730 QUARTERMASTER DRIVE
JBER, AK 99505

673 CES/CEIEC
BLDG 724
JBER, AK 99505

4. Generator's Phone ( )

5. Transporter 1 Company Name: NRC ALASKA LLC
6. US EPA ID Number: AKR000004184
A. State Transporter's ID
B. Transporter 1 Phone: (907) 258-1558

7. Transporter 2 Company Name
8. US EPA ID Number
C. State Transporter's ID
D. Transporter 2 Phone

9. Designated Facility Name and Site Address
NRC ALASKA LLC
2020 VIKING DRIVE
ANCHORAGE, AK 99501

10. US EPA ID Number: AKR000004184
E. State Facility's ID
F. Facility's Phone (907) 258-1558

HM	11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	MATERIAL NOT REGULATED BY D.O.T. (NON-RCRA/TSCA CONTAMINATED SOIL)	1	DM	800	P
b.	MATERIAL NOT REGULATED BY D.O.T. (NON-RCRA/TSCA CONTAMINATED WATER)	2	DF	800	P
c.					
d.					

G. Additional Descriptions for Materials Listed Above
1) EA0707 IDW BORE CUTTINGS
2) EA0302 IDW DECON WATER/GROUNDWATER

H. Handling Codes for Wastes Listed Above
D3913

15. Special Handling Instructions and Additional Information
Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
WAYNE A. HUGHES	Wayne A. Hughes	12 8 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Patricia Beasley JR	Patricia Beasley JR	12 8 16

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Patricia L. Beasley	Patricia L Beasley	12 20 16

NON-HAZARDOUS WASTE

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NON-HAZARDOUS WASTE MANIFEST

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NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1 of

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

5. Transporter 1 Company Name

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY D.O.T. (NONRCRA/TSCA CONTAMINATED SOIL)			800	P
b. MATERIAL NOT REGULATED BY D.O.T. (NONRCRA/TSCA CONTAMINATED WATER)			200	P
c.				
d.				

G. Additional Descriptions for Materials Listed Above

1) LA0707 IDW BORE CUTTINGS

2) LA0302 IDW DECON WATER/GROUNDWATER

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Shipper's Certification: this is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: WAYNE A. HUGHES Signature: Date: Month 12 Day 8 Year 12

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: Patricia L. Bradley Signature: Date: Month 12 Day 29 Year 16

NON-HAZARDOUS WASTE

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Drum Tracking Log for Manifest Number 109166

Manifest 109166 **Arrived** 08-DEC-16 **Gen** 673 CES/CEIEC **Tsdf** NRC ALASKA LLC

Document	Item	Line	Profile	Type	Size	Oil Fuel	Water	Antifreeze	Sludge	Solids	Location
D6913	1	1	EA0707	DM	55	0	0	0	0	50	PAD2: 417.25 P, 50.00 GA
D6913	2	2	EA0302	DF	55	0	55	0	0	0	WATER: 458.98 P, 55.00 C
D6913	3	2	EA0302	DF	55	0	55	0	0	0	WATER: 458.98 P, 55.00 C
				Totals:		0	110	0	0	50	

PLB

CERTIFICATE OF DISPOSAL/RECYCLE

GENERATOR: 673 CES/CEIEC
BLDG 724
JBER, AK 99505

DISPOSAL FACILITY: NRC ALASKA LLC
2020 VIKING DRIVE
ANCHORAGE, AK 99501

EPA ID NUMBER: AK8570028649
MANIFEST/DOCUMENT #: 109166
DATE OF DISPOSAL/RECYCLE: DEC-08-2016

LINE	WASTE DESCRIPTION	CONTAINERS	TYPE	QUANTITY	UOM
1	IDW BORE CUTTINGS	1	DM	800	P
2	IDW DECON WATER/GROUNDWATER	2	DF	800	P

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

PREPARED BY: PLB

SIGNATURE: Patricia L Beasley **DATE:** DEC 20 2016

425 Outer Springer Loop Road - Palmer, AK 99645 - (907) 258-1558 - Fax (907) 746-3651 - Toll Free (877) 375-5040

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APPENDIX C

DATA VALIDATION REPORTS

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LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H027

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0024	16H027-01	Water	08/01/16
JBERGW0007	16H027-02	Water	08/01/16
JBERGW0017	16H027-03	Water	08/01/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H027	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H027

Sample	Compound	Flag	A or P	Reason
JBERGW0024 JBERGW0007 JBERGW0017	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H027

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H027

No Sample Data Qualified in this SDG

LDC #: 37436A2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16H027 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration / Endrin	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	JBERSW0001 (16H054)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0024	16H027-01	Water	08/01/16
2	JBERGW0007	16H027-02	Water	08/01/16
3	JBERGW0017	16H027-03	Water	08/01/16
4				
5				
6				
7				
8				

Notes:

The attached zipped file contains fourteen files:

File	Format	Description	
01) Readme_JBER_111116.doc	MS Word 2003	A "Readme" file (this document).	
	MS Excel 2007	A spreadsheet for the following SDG(s):	
02) EMXT_16H027_201610_100QC_LDC.xlsx		16H027	37436A
03) EMXT_16H042_201610_100QC_LDC.xlsx		16H042	37436B
04) EMXT_16H090_201610_100QC_LDC.xlsx		16H090	37436C
05) EMXT_16H117_201610_100QC_LDC.xlsx		16H117	37436D
06) EMXT_16H133_201610_100QC_LDC.xlsx		16H133	37436E
07) EMXT_16H154_201610_100QC_LDC.xlsx		16H154	37436F
08) EMXT_16H209_201610_100QC_LDC.xlsx		16H209	37436G
09) EMXT_16H276_201610_100QC_LDC.xlsx		16H276	37436H
10) EMXT_16H345_201610_100QC_LDC.xlsx		16H345	37436I
11) EMXT_16I015_201610_100QC_LDC.xlsx		16I015	37436J
12) EMXT_16I025_201610_100QC_LDC.xlsx		16I025	37436K
13) EMXT_16I157_201610_100QC_LDC.xlsx		16I157	37436L
14) EMXT_16I266_201610_100QC_LDC.xlsx		16I266	37436M

No discrepancies were observed between the hardcopy data packages and the electronic data deliverables during EDD population of validation qualifiers. A 100% verification of the EDD was not performed.

Please contact Pei Geng at (760) 827-1100 if you have any questions regarding this electronic data submittal.

LDC #: 37436

EDD POPULATION COMPLETENESS WORKSHEET

Date: 11/11/16
Page: 1 of 1
2nd Reviewer:

The LDC job number listed above was entered by CG.

	EDD Process		Comments/Action
I.	EDD Completeness	-	
Ia.	- All methods present?	y	
Ib.	- All samples present/match report?	y	
Ic.	- All reported analytes present?	y	
Id.	- 10% or 100% verification of EDD?	y	
II.	EDD Preparation/Entry	-	
IIa.	- Carryover U/J?	y	
IIb.	- Reason Codes used? If so, note which codes.	y	LDC
IIc.	- Additional Information (QC Level, Validator, Validated Y/N, etc.)	N	
III.	Reasonableness Checks	-	
IIIa.	- Do all qualified ND results have ND qualifier (e.g. UJ)?	y	
IIIb.	- Do all qualified detect results have detect qualifier (e.g. J)?	y	
IIIc.	- If reason codes are used, do all qualified results have reason code field populated, and vice versa?	NA	NO val. quals added.
IIId.	-Does the detect flag require changing for blank qualifier? If so, are all U results marked ND?	Y/NA	
IIIe.	- Do blank concentrations in report match EDD where data was qualified due to blank contamination?	NA	
IIIf.	- Were any results reported above calibration range? If so, were results qualified appropriately?	Y/NA	
IIIg.	-Is the readme complete? If applicable, were edits or discrepancies listed in the readme?	y	

Notes: *see discrepancy sheet

Validator: LDC
Data Package: 37436A (SDG 16H027)
HGL Reviewer: Ken Rapuano
Review Date: 11.16.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 20, 2017

CS Report Name:

Report Date:

August 15, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H027

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      Label correction discrepancy noted; receipt form indicates that HGL was contacted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; no field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

NA

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

NA

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H042

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0021	16H042-01	Water	08/02/16
JBERGW9003	16H042-02	Water	08/02/16
JBERGW0032	16H042-03	Water	08/02/16
JBERGW0032	16H042-03	Water	08/02/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples JBERGW0021 and JBERGW9003 were identified as field duplicates. No results were detected in any of the samples.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H042	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H042

Sample	Compound	Flag	A or P	Reason
JBERGW0021 JBERGW9003 JBERGW0032 JBERGW0032	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H042

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H042

No Sample Data Qualified in this SDG

LDC #: 37436M2b

VALIDATION COMPLETENESS WORKSHEET

Level III

SDG #: 16H042

Laboratory: EMAX Laboratories, Inc.

Date: 11/9/16

Page: 1 of 1

Reviewer: CT

2nd Reviewer: MC

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	%RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration / Endeg	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	JBERSW0001 (16H154)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	ND	D = 1+2
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0021	16H042-01	Water	08/02/16
2	JBERGW9003	16H042-02	Water	08/02/16
3	JBERGW0032	16H042-03	Water	08/02/16
4	JBERGW0032	16H042-03	Water	08/02/16
5				
6				
7				
8				
9				
10				
11				
12				
13				

Validator: LDC
Data Package: 37436M (SDG 16H042)
HGL Reviewer: Ken Rapuano
Review Date: 11.16.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 20, 2017

CS Report Name:

Report Date:

August 17, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H042

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      No discrepancies noted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; one field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

Both results in the duplicate pair were non-detections.

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H090

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0027	16H090-01	Water	08/03/16
JBERGW0030	16H090-02	Water	08/03/16
JBERGW0028	16H090-03	Water	08/03/16
JBERGW0026	16H090-04	Water	08/04/16
JBERGW0026MS	16H090-04MS	Water	08/04/16
JBERGW0026MSD	16H090-04MSD	Water	08/04/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H090	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H090

Sample	Compound	Flag	A or P	Reason
JBERGW0027 JBERGW0030 JBERGW0028 JBERGW0026	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H090

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H090

No Sample Data Qualified in this SDG

LDC #: 37436B2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16H090 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: CT
2nd Reviewer: MC

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration / Endrin.	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SW=JBERSW0001 (16H154)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	JBERGW0027	16H090-01	Water	08/03/16
2	JBERGW0030	16H090-02	Water	08/03/16
3	JBERGW0028	16H090-03	Water	08/03/16
4	JBERGW0026	16H090-04	Water	08/04/16
5	JBERGW0026MS	16H090-04MS	Water	08/04/16
6	JBERGW0026MSD	16H090-04MSD	Water	08/04/16
7				
8				
9				
10				
11				
12				
13				

Validator: LDC
Data Package: 37436B (SDG 16H090)
HGL Reviewer: Ken Rapuano
Review Date: 11.16.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 20, 2017

CS Report Name:

Report Date:

August 18, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H090

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☐ Yes ☒ No Comments:

   The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

   ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

   ☒ Yes ☐ No Comments:

   Only 5 total bottles submitted for sample/MS/MSD set.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD and MS/MSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; no field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H117

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0005	16H117-01	Water	08/08/16
JBERGW0006	16H117-02	Water	08/08/16
JBERGW9002	16H117-03	Water	08/08/16
JBERGW0003	16H117-04	Water	08/08/16
JBERGW0001	16H117-05	Water	08/08/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples JBERGW0006 and JBERGW9002 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	JBERGW0006	JBERGW9002				
1,4-Dioxane	0.37	0.28	-	0.09 (≤0.55)	-	-

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H117	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H117

Sample	Compound	Flag	A or P	Reason
JBERGW0005 JBERGW0006 JBERGW9002 JBERGW0003 JBERGW0001	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H117

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H117

No Sample Data Qualified in this SDG

LDC #: 37436C2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16H117 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A A	RSD ≤ 15%, ICV ≤ 20%
IV.	Continuing calibration (Endrin)	A	CCV ≤ 20%/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SW=JBERSW0001(16H152)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	NN	D=2+3
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0005	16H117-01	Water	08/08/16
2	JBERGW0006	16H117-02	Water	08/08/16
3	JBERGW9002	16H117-03	Water	08/08/16
4	JBERGW0003	16H117-04	Water	08/08/16
5	JBERGW0001	16H117-05	Water	08/08/16
6				
7				
8				
9				
10				
11				
12				
13				

LDC#: 37436C2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: PG
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤30%)	Difference (ug/L)	Limits (ug/L)	Qualifications (Parent Only)
	2	3				
1,4-Dioxane	0.37	0.28		0.09	≤0.55	

V:\FIELD DUPLICATES\37436C2b_JBER.wpd

Validator: LDC
Data Package: 37436C (SDG 16H117)
HGL Reviewer: Ken Rapuano
Review Date: 11.16.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 20, 2017

CS Report Name:

Report Date:

August 30, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H117

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      No discrepancies noted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; one field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

Both results in pair <LOQ; used absolute difference to evaluate.

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

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LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H133

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0008	16H133-01	Water	08/09/16
JBERGW0008MS	16H133-01MS	Water	08/09/16
JBERGW0008MSD	16H133-01MSD	Water	08/09/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H133	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H133

Sample	Compound	Flag	A or P	Reason
JBERGW0008 JBERGW0008MS JBERGW0008MSD	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H133

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H133

No Sample Data Qualified in this SDG

LDC #: 37436D2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16H133 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration pending	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SW = JBERSW0001 (16H154)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0008	16H133-01	Water	08/09/16
2	JBERGW0008MS	16H133-01MS	Water	08/09/16
3	JBERGW0008MSD	16H133-01MSD	Water	08/09/16
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

Validator: LDC
Data Package: 37436D (SDG 16H133)
HGL Reviewer: Ken Rapuano
Review Date: 11.17.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 20, 2017

CS Report Name:

Report Date:

August 30, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H133

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      No discrepancies noted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD and MS/MSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; no field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H154

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0029	16H154-01	Water	08/10/16
JBEREB0001	16H154-02	Water	08/10/16
JBERSW0001	16H154-03	Water	08/10/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBEREB0001 was identified as an equipment blank. No contaminants were found.

Sample JBERSW0001 was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H154	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H154

Sample	Compound	Flag	A or P	Reason
JBERGW0029 JBEREB0001 JBERSW0001	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H154

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H154

No Sample Data Qualified in this SDG

LDC #: 37436E2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16H154 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD≤15%. ICV≤20%
IV.	Continuing calibration / endings	A	CCV≤20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=2. ~~SW~~ SW=3
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/A
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0029	16H154-01	Water	08/10/16
2	JBEREB0001	16H154-02	Water	08/10/16
3	JBERSW0001	16H154-03	Water	08/10/16
4				
5				
6				
7				
8				
9				
10				
11				
12				
13	MB 1W			

Validator: LDC
Data Package: 37436E (SDG 16H154)
HGL Reviewer: Ken Rapuano
Review Date: 11.17.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 21, 2017

CS Report Name:

Report Date:

August 29, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H154

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☐ Yes ☒ No Comments:

   The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

   ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

   ☒ Yes ☐ No Comments:

   Label correction discrepancy noted; receipt form indicates "R8" as corrective action. In other SDGs, that code indicates that HGL was contacted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; no field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

A material blank and an equipment blank were submitted in this SDG; no contamination detected.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
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Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
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M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H209

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0018	16H209-01	Water	08/16/16
JBERGW0019	16H209-02	Water	08/16/16
JBERGW0018MS	16H209-01MS	Water	08/16/16
JBERGW0018MSD	16H209-01MSD	Water	08/16/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

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X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H209	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H209

Sample	Compound	Flag	A or P	Reason
JBERGW0018 JBERGW0019	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H209

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H209

No Sample Data Qualified in this SDG

LDC #: 37436F2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16H209 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: A

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration / Endrin	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SW=JBERSW0001
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0018	16H209-01	Water	08/16/16
2	JBERGW0019	16H209-02	Water	08/16/16
3	JBERGW0018MS	16H209-01MS	Water	08/16/16
4	JBERGW0018MSD	16H209-01MSD	Water	08/16/16
5				
6				
7				
8				
9				
10				
11				
12				
13				

Validator: LDC
Data Package: 37436F (SDG 16H209)
HGL Reviewer: Ken Rapuano
Review Date: 11.17.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 22, 2017

CS Report Name:

Report Date:

September 14, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H209

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      No discrepancies noted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD and MS/MSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; no field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H276

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0012	16H276-01	Water	08/22/16
JBERGW9000	16H276-02	Water	08/22/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples JBERGW0012 and JBERGW9000 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	JBERGW0012	JBERGW9000				
1,4-Dioxane	0.34	0.37	-	0.03 (≤0.51)	-	-

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H276	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H276

Sample	Compound	Flag	A or P	Reason
JBERGW0012 JBERGW9000	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H276

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H276

No Sample Data Qualified in this SDG

LDC #: 37436H2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16H276 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: Q
2nd Reviewer: R

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A+A	RSD≤15%. ICV≤20%
IV.	Continuing calibration / Endrin	A	CCV≤20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	D=1+2 SW=JBERSW0001 (16H154)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	SW	D=1+2
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0012	16H276-01	Water	08/22/16
2	JBERGW9000	16H276-02	Water	08/22/16
3				
4				
5				
6				
7				

Notes:

LDC#: 37436H2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: PG
2nd Reviewer: AC

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤30%)	Difference (ug/L)	Limits (ug/L)	Qualifications (Parent Only)
	1	2				
1,4-Dioxane	0.34	0.37		0.03	≤0.51	

V:\FIELD DUPLICATES\37436H2b_JBER.wpd

Validator: LDC
Data Package: 37436H (SDG 16H276)
HGL Reviewer: Ken Rapuano
Review Date: 11.17.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 22, 2017

CS Report Name:

Report Date:

September 14, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H276

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      No discrepancies noted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; one field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☑ Yes ☐ No Comments:

Both results in pair <LOQ; used absolute difference to evaluate.

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☑ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☑ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☑ Yes ☐ No Comments:

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LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16H345

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0020	16H345-01	Water	08/30/16
JBERGW9001	16H345-02	Water	08/30/16
JBERGW0023	16H345-03	Water	08/30/16
JBERGW0022	16H345-04	Water	08/29/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples JBERGW0020 and JBERGW9001 were identified as field duplicates. No results were detected in any of the samples.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16H345	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16H345

Sample	Compound	Flag	A or P	Reason
JBERGW0020 JBERGW9001 JBERGW0023 JBERGW0022	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16H345

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16H345

No Sample Data Qualified in this SDG

LDC #: 37436I2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16H345 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: a
2nd Reviewer: 2

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration /ending	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	FB SW=JBERSW0001 (16H154)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	ND	D = 1+2
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; ND = No compounds detected; D = Duplicate; SB=Source blank
N = Not provided/applicable; R = Rinsate; TB = Trip blank; OTHER:
SW = See worksheet; FB = Field blank; EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	JBERGW0020	16H345-01	Water	8/30/16
2	JBERGW9001	16H345-02	Water	"
3	JBERGW0023	16H345-03	Water	"
4	JBERGW0022	16H345-04	Water	8/29/16
5				
6				
7				
8				
9				

Validator: LDC
Data Package: 37436I (SDG 16H345)
HGL Reviewer: Ken Rapuano
Review Date: 11.17.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 22, 2017

CS Report Name:

Report Date:

September 19, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16H345

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      Label correction discrepancy noted; receipt form indicates that HGL was contacted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; one field duplicate submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

Both results in the duplicate pair were non-detections.

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
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- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
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H	16H276	11/01/16	11/15/16	2	0																												
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K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16I015

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JERBGW0025	16I015-01	Water	08/31/16
JERBGW0010	16I015-02	Water	08/31/16
JERBGW0015	16I015-03	Water	09/01/16
JERBGW0014	16I015-04	Water	09/01/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

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U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16I015	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16I015

Sample	Compound	Flag	A or P	Reason
JERBGW0025 JERBGW0010 JERBGW0015 JERBGW0014	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16I015

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16I015

No Sample Data Qualified in this SDG

LDC #: 37436J2b

SDG #: 16I015

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/9/16

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration Ending	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SW: JBERSW0001 (16H15A)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JERBGW0025	16I015-01	Water	08/31/16
2	JERBGW0010	16I015-02	Water	08/31/16
3	JERBGW0015	16I015-03	Water	09/01/16
4	JERBGW0014	16I015-04	Water	09/01/16
5				
6				
7				
8				
9	MBKIN			

Validator: LDC
Data Package: 37436J (SDG 16I015)
HGL Reviewer: Ken Rapuano
Review Date: 11.17.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 22, 2017

CS Report Name:

Report Date:

September 19, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16I015

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      Label correction discrepancy noted; receipt form indicates that HGL was contacted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; field duplicate not submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

NA

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

NA

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16I025

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0009	16I025-01	Water	09/01/16
JBEREB0002	16I025-02	Water	09/02/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBEREB0002 was identified as an equipment blank. No contaminants were found.

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16I025	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16I025

Sample	Compound	Flag	A or P	Reason
JBERGW0009 JBEREB0002	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16I025

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16I025

No Sample Data Qualified in this SDG

LDC #: 37436K2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16I025 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD ≤ 15%. ICV ≤ 20%
IV.	Continuing calibration	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 2. ~~FB~~ SW = JBERSW0001(16H:54)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0009	16I025-01	Water	09/01/16
2	JBEREB0002	16I025-02	Water	09/02/16
3				
4				
5				
6				
7				

Notes:

	MB&LW						

Validator: LDC
Data Package: 37436K (SDG 16I025)
HGL Reviewer: Ken Rapuano
Review Date: 11.17.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 22, 2017

CS Report Name:

Report Date:

September 16, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16I025

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☐ Yes ☒ No Comments:

   The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

   ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

   ☒ Yes ☐ No Comments:

   Supplemental CoC form was generated by HGL showing the correct sample ID for the equipment blank.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; field duplicate not submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

NA

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

NA

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank submitted in another SDG. Equipment blank submitted in this SDG clean.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16I157

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0002	16I157-01	Water	09/15/16
JBERGW0004	16I157-02	Water	09/15/16
JBERGW0031	16I157-03	Water	09/16/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16I157	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16I157

Sample	Compound	Flag	A or P	Reason
JBERGW0002 JBERGW0004 JBERGW0031	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16I157

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16I157

No Sample Data Qualified in this SDG

LDC #: 37436L2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: 16I157 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: Q
2nd Reviewer: YC

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	~~RSD≤15%~~. ICV≤20%
IV.	Continuing calibration	A	CCV≤20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	NO	SW=JBERSW0001 (16H154)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	CS
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	JBERGW0002	16I157-01	Water	09/15/16
2	JBERGW0004	16I157-02	Water	09/15/16
3	JBERGW0031	16I157-03	Water	09/16/16
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

Validator: LDC
Data Package: 37436L (SDG 16I157)
HGL Reviewer: Ken Rapuano
Review Date: 11.18.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 22, 2017

CS Report Name:

Report Date:

October 11, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16I157

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      Supplemental CoC form was generated by HGL showing the correct sample time for samples.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; field duplicate not submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

NA

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

NA

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37436:

SDG #	Fraction
16H027, 16H090, 16H117, 16H133, 16H154 16H209, 16I266, 16H276, 16H345, 16I015 16I025, 16I157, 16H042	1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

671 pages-DL

Attachment 1

EDD Level III

LDC #37436 (HydroGeoLogic Inc. - Hudson, OH / JBER, GW Sampling)

LDC	SDG#	DATE REC'D	(2) DATE DUE	1,4-Dioxane (8270C-S)																													
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	16H027	11/01/16	11/15/16	3	0																												
B	16H090	11/01/16	11/15/16	4	0																												
C	16H117	11/01/16	11/15/16	5	0																												
D	16H133	11/01/16	11/15/16	1	0																												
E	16H154	11/01/16	11/15/16	3	0																												
F	16H209	11/01/16	11/15/16	2	0																												
G	16I266	11/01/16	11/15/16	2	0																												
H	16H276	11/01/16	11/15/16	2	0																												
I	16H345	11/01/16	11/15/16	4	0																												
J	16I015	11/01/16	11/15/16	4	0																												
K	16I025	11/01/16	11/15/16	2	0																												
L	16I157	11/01/16	11/15/16	3	0																												
M	16H042	11/01/16	11/15/16	4	0																												
Total	J/PG			39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37436ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 10, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16I266

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0016	16I266-01	Water	09/27/16
JBERGW0013	16I266-02	Water	09/28/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample JBERSW0001 (from SDG 16H154) was identified as a source blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16I266	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16I266

Sample	Compound	Flag	A or P	Reason
JBERGW0016 JBERGW0013	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16I266

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16I266

No Sample Data Qualified in this SDG

LDC #: 37436G2b **VALIDATION COMPLETENESS WORKSHEET** Date: 11/9/16
SDG #: ~~16H266~~ 16I266 Level III Page: 1 of 1
Laboratory: EMAX Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	RSD≤15%. ICV≤20%
IV.	Continuing calibration / Endrin	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SW=JBERSW0001 (16H154)
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0016	16I266-01	Water	09/27/16
2	JBERGW0013	16I266-02	Water	09/28/16
3				
4				
5				
6				
7				

Notes:

Validator: LDC
Data Package: 37436G (SDG 16I266)
HGL Reviewer: Ken Rapuano
Review Date: 11.18.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 22, 2017

CS Report Name:

Report Date:

October 19, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16I266

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☐ Yes ☒ No Comments:

      The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☒ Yes ☐ No Comments:

      No discrepancies noted.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; field duplicate not submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

NA

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

NA

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

HydroGeoLogic
404 E. Ramsey Road, Suite 210
San Antonio, Texas 708216
ATTN: Ms. Jennifer Spies

November 11, 2016

SUBJECT: JBER, VI Study Sampling/GW Sampling, Data Validation

Dear Ms. Spies,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on November 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC project #37420:

SDG #	Fraction
320-22604-1, 320-22608-4, 16J080	Volatiles & Gasoline Range Organics, 1,4-Dioxane

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Uniform Federal Policy - Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf - Richardson Restoration Program Sites, Alaska, July 2016
- U.S. Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

3,606 pages-DL

Attachment 1

EDD Level III **LDC #37420 (HydroGeoLogic Inc. - Hudson, OH / JBER, VI Study Sampling/GW Sampling)**

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (TO-15)		GRO (TO-15)		VOA (TO-15 -SIM)		TCE (TO-15 -SIM)		1,4-Dioxane (8270C-S)																							
Matrix:	Air/Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	320-22604-1	11/01/16	11/15/16	8	0	8	0	10	0	7	0	-	-																				
B	320-22608-4	11/01/16	11/15/16	14	0	26	0	33	0	-	-	-	-																				
C	16J080	11/01/16	11/15/16	-	-	-	-	-	-	-	-	1	0																				
Total	T/PG			22	0	34	0	43	0	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107

Shaded cells indicate Level IV review (all other cells are Level III review). These sample counts do not include MS/MSD, DL, RE and DUPs

L:\HGL\JBER\37420ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JBER, GW Sampling

LDC Report Date: November 11, 2016

Parameters: 1,4-Dioxane

Validation Level: Level III

Laboratory: EMAX Laboratories, Inc.

Sample Delivery Group (SDG): 16J080

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
JBERGW0011	16J080-01	Water	10/05/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Uniform Federal Policy – Quality Assurance Project Plan, Vapor Intrusion Studies for Joint Base Elmendorf – Richardson Restoration Program Sites, Alaska (July 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

1,4-Dioxane by Environmental Protection Agency (EPA) SW 846 Method 8270C in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation. These qualifier definitions are general and apply only to the data validation process; the data user should refer to the project QAPP for project-specific data qualifier definitions.

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

X (Excluded): The data point is associated with reanalyses or diluted analyses and is excluded because another result has been selected as the definitive result for the analyte.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

Average relative response factors (RRF) were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0%.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0%.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compounds reported below the limit of quantitation (LOQ) were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 16J080	All compounds reported below the LOQ.	J (all detects)	A

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results less than the LOQ, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

JBER, GW Sampling
1,4-Dioxane - Data Qualification Summary - SDG 16J080

Sample	Compound	Flag	A or P	Reason
JBERGW0011	All compounds reported below the LOQ.	J (all detects)	A	Compound quantitation

JBER, GW Sampling
1,4-Dioxane - Laboratory Blank Data Qualification Summary - SDG 16J080

No Sample Data Qualified in this SDG

JBER, GW Sampling
1,4-Dioxane - Field Blank Data Qualification Summary - SDG 16J080

No Sample Data Qualified in this SDG

LDC #: 37420C2b

SDG #: X16J080

Laboratory: EMAX Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 11/8/16

Page: 1 of 1

Reviewer: Q

2nd Reviewer: JV6

METHOD: GC/MS 1,4-Dioxane (EPA SW 846 Method 8270C-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSD ≤ 15% ICV ≤ 20%
IV.	Continuing calibration	A	CCV ≤ 20/50%
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	MS
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	JBERGW0011	16J080-01	Water	10/05/16
2				
3				
4				
5				
6				
7				
8				

Notes:

	MBK1W						

Validator: LDC
Data Package: 37420C (SDG 16J080)
HGL Reviewer: Ken Rapuano
Review Date: 11.18.16

General Issues: No issues noted.

1) 1,4-Dioxane (8270C-SIM): The validation report indicates "A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals." Although this method is 8270C-SIM, the tuning compound is 4-bromofluorobenzene instead of DFTPP. This appears to be a template error from using an already-existing 8270 data validation report as the basis for this report.

The HGL reviewer confirmed that the laboratory was comparing IS performance to the midpoint standard of the initial calibration, in accordance with the QSM and QAPP requirements.

Qualifier Changes (only shows results that are changed by HGL):

None

Laboratory Data Review Checklist

Completed by:

Kenneth F. Rapuano

Title:

Senior Chemist

Date:

March 22, 2017

CS Report Name:

Report Date:

October 27, 2016

Consultant Firm:

HydroGeoLogic, Inc.

Laboratory Name:

EMAX Laboratories, Inc.

Laboratory Report Number:

16J080

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☐ Yes ☒ No Comments:

   The analytical method/analyte is not in ADEC's fields of accreditation.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☐ No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ☒ Yes ☐ No Comments:

   b. Correct analyses requested?

   ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☒ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☒ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☒ Yes ☐ No Comments:

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

   ☒ Yes ☐ No Comments:

   There is a potential error in the station ID noted by the HGL project manager; however, the laboratory does not use this field to identify samples.

e. Data quality or usability affected?

Comments:

No

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

No discrepancies noted.

c. Were all corrective actions documented?

☑ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☑ Yes ☐ No Comments:

NA - groundwater samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☑ No Comments:

All ND results considered to be equivalent to "LOD U"; laboratory LOD < tapwater RSL

e. Data quality or usability affected?

Comments:

No

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

NA - no metals/inorganics analytical results reported.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

LCS/LCSD performed

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

vii. Data quality or usability affected?

Comments:

No results required qualification.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

No results required qualification.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☑ No Comments:

NA - no VOCs analyses requested

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

No results required qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

Overall rate met; field duplicate not submitted in this SDG.

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

NA

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

NA

iv. Data quality or usability affected?

Comments:

No results required qualification.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒ Yes ☐ No ☐ Not Applicable

i. All results less than LOQ?

☒ Yes ☐ No Comments:

Material blank and equipment blanks submitted in other SDGs.

ii. If above LOQ, what samples are affected?

Comments:

iii. Data quality or usability affected?

Comments:

No results required qualification.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

APPENDIX D

LABORATORY ANALYTICAL DATA PACKAGES

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TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H027**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1004
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3033
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 08-15-2016
EMAX Batch No.: 16H027

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/03/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0024	H027-01	08/01/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0007	H027-02	08/01/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0017	H027-03	08/01/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

16H027

Date: 8/1/2016

Page 1 of 1

COC #: GW-01

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) Megan Mattearri (Printed Name)

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
1	GW-4A	JBERGW0024	NA	8/1/16	1135	GW	X	2	
2	LF05GW-2B	JBERGW0007	NA	8/1/16	1335	GW	X	2	
3	SS22MW14	JBERGW0017	NA	8/1/16	1515	GW	X	2	

Relinquished by	Date	Received by	Date
Megan Mattearri (Signature)	8/2/16	Cecilia Chavez (Signature)	8/3/16
Megan Mattearri (Printed Name)	Time 1300	Cecilia Chavez (Printed Name)	Time 09:05
HGL (Company)		EMAX (Company)	
Relinquished by	Date	Received by	Date
Signature	Time	Signature	Time
Printed Name		Printed Name	
Company		Company	

Total No. of Containers (this page): 6
Total (entire COC): 6

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

Total # of coolers: 1
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

1001

2.3°

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 164027
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7837 2572 1131	Recipient C. Chavez
☐ EMAX Courier ☐ Client Delivery		Date 8/3/16 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: _____

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 2-3 °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 130532505 Spanish	B - S/N 140252070	C - S/N 140252067	(B) 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	3	D10		R8

C 8/3/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NB 8/3/16

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	Informed client
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 _____ **SRF** _____ **PM** NB

Date 8/3/16 8/3/16 **Date** 8/3/16 **Date** 8/3/16

ORIGIN ID:GSTA (330) 840-9449
JEFF DEVAUGHN
AF50660304
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 02AUG16
ACTWGT: 48.90 LB
CAD: 6990280/SSF01704
DIMS: 25x14x13 IN

BILL THIRD PARTY

Part # 156297-435 RIT2 10/15
*4411/1370/14FR

TO **EMAX LAB INC**
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J1620160705011uv

TRK# 0201 **7837 2572 1131**

WED - 03 AUG 10:30A
PRIORITY OVERNIGHT

XH HHRA

DSR
90501
CA-US **LAX**

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H027

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H027

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of three (3) water samples were received on 08/03/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RHL003) and CCV(Datafile ID:RHL024). 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. SVH015WB - 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. SVH015WL/SVH015WC was within LCS limits. Refer to LCS summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING

SDG NO. : 16H027
Instrument ID : T-0E9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVH015WB	1	NA	08/05/1613:15	08/04/1613:00	RHL013	RAL010	SVH015W	Method Blank
LCS1W	SVH015WL	1	NA	08/05/1613:27	08/04/1613:00	RHL014	RAL010	SVH015W	Lab Control Sample (LCS)
LCD1W	SVH015WC	1	NA	08/05/1613:42	08/04/1613:00	RHL015	RAL010	SVH015W	LCS Duplicate
JBERGW0024	H027-01	1.05	NA	08/05/1613:58	08/04/1613:00	RHL016	RAL010	SVH015W	Field Sample
JBERGW0007	H027-02	1.09	NA	08/05/1614:14	08/04/1613:00	RHL017	RAL010	SVH015W	Field Sample
JBERGW0017	H027-03	1.08	NA	08/05/1614:30	08/04/1613:00	RHL018	RAL010	SVH015W	Field Sample

FN - Filename
% Moist - Percent Moisture

2005

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 08/01/16
Project : JBER GW SAMPLING	Date Received: 08/03/16
Batch No. : 16H027	Date Extracted: 08/04/16 13:00
Sample ID: JBERGW0024	Date Analyzed: 08/05/16 13:58
Lab Samp ID: H027-01	Dilution Factor: 1.05
Lab File ID: RHL016	Matrix : WATER
Ext Btch ID: SVH015W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.52	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	37.9	42.00	90.3	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/01/16
Project	: JBER GW SAMPLING	Date Received:	08/03/16
Batch No.	: 16H027	Date Extracted:	08/04/16 13:00
Sample ID:	JBERGW0007	Date Analyzed:	08/05/16 14:14
Lab Samp ID:	H027-02	Dilution Factor:	1.09
Lab File ID:	RHL017	Matrix :	WATER
Ext Btch ID:	SVH015W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	1.1	0.55	0.14	0.27

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	38.8	43.60	89.0	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 08/01/16
Project : JBER GW SAMPLING	Date Received: 08/03/16
Batch No. : 16H027	Date Extracted: 08/04/16 13:00
Sample ID: JBERGW0017	Date Analyzed: 08/05/16 14:30
Lab Samp ID: H027-03	Dilution Factor: 1.08
Lab File ID: RHL018	Matrix : WATER
Ext Btch ID: SVH015W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.54	0.14	0.27

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	37.7	43.20	87.3	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	08/04/16
Batch No.	: 16H027	Date Extracted:	08/04/16 13:00
Sample ID:	MBLK1W	Date Analyzed:	08/05/16 13:15
Lab Samp ID:	SVH015WB	Dilution Factor:	1
Lab File ID:	RHL013	Matrix :	WATER
Ext Btch ID:	SVH015W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	35.0	40.00	87.4	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H027
METHOD: SW 3520C/8270C SIM

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVH015WB	SVH015WL	SVH015WC		
LAB FILE ID:	RHL013	RHL014	RHL015		
DATE EXTRACTED:	08/04/1613:00	08/04/1613:00	08/04/1613:00	DATE COLLECTED:	NA
DATE ANALYZED:	08/05/1613:15	08/05/1613:27	08/05/1613:42	DATE RECEIVED:	08/04/16
PREP. BATCH:	SVH015W	SVH015W	SVH015W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	29.6	74	40.0	31.6	79	7	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	40.5	101	40.0	41.5	104	30-130

INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H027

Lab File ID: RAL002 BFB Injection Date : 01/12/16

Instrument ID: TOE9 BFB Injection Time : 10:33

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H027

Lab File ID: RHL002 BFB Injection Date : 08/05/16

Instrument ID: TOE9 BFB Injection Time : 08:52

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.70
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	6.16
173	Less than 2.0% of mass 174	0.78(0.9)1
174	50.0- 100.0% of mass 95	85.87
175	5.0 - 9.0% of mass 174	6.83(8.0)1
176	95.0 - 101.0% of mass 174	84.43(98.3)1
177	5.0 - 9.0% of mass 176	5.07(6.0)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	SSTD020	CSVE9A1233	RHL003	08/05/16	09:06
2	MBLK1W	SVH015WB	RHL013	08/05/16	13:15
3	LCS1W	SVH015WL	RHL014	08/05/16	13:27
4	LCD1W	SVH015WC	RHL015	08/05/16	13:42
5	JBERGW0024	H027-01	RHL016	08/05/16	13:58
6	JBERGW0007	H027-02	RHL017	08/05/16	14:14
7	JBERGW0017	H027-03	RHL018	08/05/16	14:30
8	SSTD020	CSVE9A1234	RHL024	08/05/16	16:09

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:JBER GW SAMPLING
SDG No.: 16H027
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8)	
		AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.26
	LOWER LIMIT	528004	1.92
	SAMPLE ID		
1	SSTD020	945126	2.07
2	MBLK1W	890538	2.07
3	LCS1W	886490	2.07
4	LCD1W	839619	2.07
5	JBERGW0024	904051	2.08
6	JBERGW0007	884112	2.07
7	JBERGW0017	931139	2.07
8	SSTD020	962818	2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :DSQ
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL003
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/05/16 09:06

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-Dioxane-d8	20.000	0	945126	1	1	2.072	2.087	0				
2	1,4-Dioxane	18.657	-6.7	1570140	1.661	1.781	2.097	2.113	5.77				
3	Bromobenzene	19.608	-2.0	1945434	2.058	2.100	4.240	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :DSQ
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL024
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/05/16 16:09

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-Dioxane-d8	20.000	0	962818	1	1	2.072	2.087	0				
2	1,4-Dioxane	18.796	-6.0	1611454	1.674	1.781	2.097	2.113	5.77				
3	Bromobenzene	20.421	2.1	2064084	2.144	2.100	4.241	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H05\RHL003.D Vial: 3
Acq On : 05 Aug 2016 09:06 Operator: KVu
Sample : CSVE9A1213 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 05 09:58:15 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	89	-0.02
2	T	1,4-Dioxane	20.000	18.657	6.7	83	-0.02
3	S	Bromobenzene	20.000	19.608	2.0	81	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H05\RHL003.D Vial: 3
Acq On : 05 Aug 2016 09:06 Operator: KVu
Sample : CSVE9A1213 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 05 09:58:15 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	89	-0.02
2	T	1,4-Dioxane	1.781	1.661	6.7	83	-0.02
3	S	Bromobenzene	2.100	2.058	2.0	81	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H05\RHL024.D Vial: 24
Acq On : 05 Aug 2016 16:09 Operator: KVu
Sample : CSVE9A1214 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 08 10:18:14 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	91	-0.02
2	T	1,4-Dioxane	20.000	18.796	6.0	86	-0.02
3	S	Bromobenzene	20.000	20.421	-2.1	85	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H05\RHL024.D Vial: 24
Acq On : 05 Aug 2016 16:09 Operator: KVu
Sample : CSVE9A1214 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 08 10:18:14 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	91	-0.02
2	T	1,4-Dioxane	1.781	1.674	6.0	86	-0.02
3	S	Bromobenzene	2.100	2.144	-2.1	85	0.00

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

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 8/5/16 8:52 End Date/Time: 8/5/16 16:09

ANALYTICAL BATCH: csVE9A1233

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RHL 001	IBE9A1233				
	2	BFBE9A1233				
	3	CSVE9A1233				
SVH004W	4	SVH004WB	1		x	
	5	WL				
	6	WC				
	7	16G344-02M				
	8	02S				
	9	02				
	10	08				
	11	16				
	12	17				
SVH015W	13	SVH015WB	1		x	
	14	WL				
	15	WC				
	16	16H027-01				
	17	02				
	18	03				
	19	16H042-01				
	20	02				
	21	03				
	22	04				
	23	16H047-06				
	24	CSVE9A1234				
		MV 8/8/16				

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name	ID / Conc. (mg/L)
DFTPP	
INT. STD.	SS2A-13-01-15 / 1000
ICV	30
DCC	SS2C-14-~~28~~-07 / 20
BENZIDINE	
APP 9	MV 8/5/16
APP 9 ADD	
BFB	SS2C-14-28-03 / 50
Solvent	ID
CH_2Cl_2	55219
DATA FILE	16H05
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO000-01 Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: MV

Date Disposed: 8/8/16

Disposed By: MV

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
↓	2	BFBE9A1201	↓			
↓	3	SVE9A12 1	↓			0.05 ppm 14 Dio
↓	4	↓ 2	↓			.075
↓	5	3	↓			.15
↓	6	4	↓			.2
↓	7	5	↓			.5
↓	8	6	↓			1
↓	9	7	↓			5
↓	10	8	↓			20
↓	11	9	↓			60
↓	12	↓ 10	↓			100
↓	13	ISVE9A12 1	↓			ICV
SVA001W	14	LOQ-01	1		X	
↓	15	LOD-01	↓		↓	
SVA002S	16	LOQ-02	1	X		
↓	↓ 17	LOD-02	↓	↓		
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name	ID / Conc. (mg/L)
DFTPP	
INT. STD.	SS2A-13-01-15 / 1000
ICV	SS2C-14-19-01 / 20
DCC / ICAL	SS2C-14-18-03 / .05-100
BENZIDINE	
APP 9	
APP 9 ADD	
BFB	SS2C-14-18-02 / 50
Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

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.

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-092
Preparation Batch: SVH015W
Matrix: Water
Micropipette ID: 100 uL: PE97C-03 ✓
Micropipette ID: 1000 uL: PE00-03 ✓

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1 ✓
LCS/MS 1,4 Dioxane	SS2B-12-21-03	1.0 ✓
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	55219
Na_2SO_4	SWIB-003-12-16
H_2SO_4	–
NaOH	SPIB-08-81-04
Silica Sand	–
Silica Gel	–
Reagent Water	SWIA-006-01-22
Residual Chlorine Strip	6124
pH Strip	MC6081919
Filter Paper	9728559 B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVH015WB			1
-WL			1
-WC			1
H027-01			1
-02			1
-03			1
H042-01			2
-02			2
-03			2
-04			2
H047-06			2

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3		
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: JM Witnessed By: TW
Standard Added By: JM Checked By: ML
Extract Received By: KV 8/5/16 Location: SE01#4
Disposed By: Disposed On:

FileID: SVH015W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVH015W01	SVH015WB	1000	ml	8/4/16 14:40	2	1000	2	1	1,4 Dioxane
16SVH015W02	SVH015WL	1000	ml	8/4/16 14:40	2	1000	2	1	
16SVH015W03	SVH015WC	1000	ml	8/4/16 14:40	2	1000	2	1	
16SVH015W04	H027-01	950	ml	8/4/16 14:40	2	1000	2	1.05	yellow
16SVH015W05	H027-02	920	ml	8/4/16 14:40	2	1000	2	1.09	
16SVH015W06	H027-03	930	ml	8/4/16 14:40	2	1000	2	1.08	
16SVH015W07	H042-01	1000	ml	8/4/16 14:40	2	1000	2	1	
16SVH015W08	H042-02	890	ml	8/4/16 14:40	2	1000	2	1.12	
16SVH015W09	H042-03	940	ml	8/4/16 14:40	2	1000	2	1.06	
16SVH015W10	H042-04	890	ml	8/4/16 14:40	2	1000	2	1.12	light yellow
16SVH015W11	H047-06	1000	ml	8/4/16 14:40	2	1000	2	1	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 8/4/16 13:00 ☐ pHAdj(≤2) @

Prepared By: JMuert

☑ Extraction Ended @ 8/5/16 7:00 ☑ pHAdj(≥11) @ 8/4/16 13:00

Checked By: ML

Comments: volume entered after extraction started, pH 6-7, no Cl detected

Date 8/5/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H042**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1005
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3034
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 08-17-2016
EMAX Batch No.: 16H042

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/04/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0021	H042-01	08/02/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW9003	H042-02	08/02/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0032	H042-03	08/02/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0033	H042-04	08/02/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

16H042

Date: 8/2/2016

Page 1 of 1

COC #: GW-02

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Megan Mattea zzi
Sampler: (Signature) (Printed Name)

8/04/16

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
403WL-01	JBERGW0021	NA	8/2/16	1345	GW	X	2	
403WL-01	JBERGW9003	NA	8/2/16	1345	GW	X	2	
SP1-02	JBERGW0032	NA	8/2/16	1510	GW	X	2	
TU091MW-01	JBERGW0033	NA	8/2/16	1648	GW	X	2	

1 2 3 4

Meg
8/3/16

Total No. of Containers (this page): 8
Total (entire COC): 8

Relinquished by	Date	Received by	Date
Signature: Meg	8/3/16	Signature:	
Printed Name: Megan Mattea zzi	Time: 0900	Printed Name:	Time
Company: HGL		Company:	
Relinquished by	Date	Received by	Date
Signature:		Signature:	8/04/16
Printed Name:	Time	Printed Name: Miguel Limon	Time: 9:10
Company:		Company: EMAX	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

Total # of coolers: 1
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

TU091

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16H042
☑ Fedex ☐ UPS ☐ GSO ☐ Others	msfc 7837 3514 3509	Recipient Miguel
☐ EMAX Courier ☐ Client Delivery		Date 8/04/16 Time 9:10

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☐ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 1.0 °C	☑ Cooler 2 1.2 °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 Southern	*B - S/N* 140252070	*C - S/N* 140252067	*D - S/N* 150553630	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

8/4/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

MB 8/4/16

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 _____ **SRF** _____ **PM** MB

Date 8/04/16 8/4/16 **Date** 8/4/16 **Date** 8/4/16

ORIGIN ID:G9TA (330) 840-9449
J DEVAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD STE 600

HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 03AUG16
ACTWGT: 42.80 LB
CAD: 6990280/SSF01704
DIMS: 24x13x14 IN

BILL THIRD PARTY

Part # 156297-435 RITE 10/15

TO **EMAX LABORATORIES INC**
ATTN: SAMPLERECEIVING(AF5066.03.04)
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J1620460/0501

1 of 2

TRK# 0201 **7837 3514 3509**

MASTER

XH HHRA

THU - 04 AUG 10:30A
PRIORITY OVERNIGHT

DSR AHS
90501
CA-US **LAX**

ORIGIN ID:GSTA (330) 840-9449
J DEVAUGHN
GEOLOGIC INC
581 BOSTON MILLS RD STE 600

HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 03AUG16
ACTWGT: 41.90 LB
CAD: 6990280/SSFO1704
DIMS: 24x13x14 IN

BILL THIRD PARTY

Part # 156997-435 REV 12 10/15

TO EMAX LABORATORIES INC
ATTN: SAMPLERECEIVING(AF5066.03.04)
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J162016070501uv

2 of 2
MPS# 7837 3514 3510
0263
Mstr# 7837 3514 3509
0201

XH HHRA

THU - 04 AUG 10:30A
PRIORITY OVERNIGHT
DSR AHS
90501
CA-US LAX

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H042

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H042

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of four (4) water samples were received on 08/04/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RHL003) and CCV(Datafile ID:RHL024). 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. SVH015WB - 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. SVH015WL/SVH015WC 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
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING

SDG NO. : 16H042
Instrument ID : T-0E9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVH015WB	1	NA	08/05/1613:15	08/04/1613:00	RHL013	RAL010	SVH015W	Method Blank
LCS1W	SVH015WL	1	NA	08/05/1613:27	08/04/1613:00	RHL014	RAL010	SVH015W	Lab Control Sample (LCS)
LCD1W	SVH015WC	1	NA	08/05/1613:42	08/04/1613:00	RHL015	RAL010	SVH015W	LCS Duplicate
JBERGW0021	H042-01	1	NA	08/05/1614:47	08/04/1613:00	RHL019	RAL010	SVH015W	Field Sample
JBERGW9003	H042-02	1.12	NA	08/05/1615:03	08/04/1613:00	RHL020	RAL010	SVH015W	Field Sample
JBERGW0032	H042-03	1.06	NA	08/05/1615:19	08/04/1613:00	RHL021	RAL010	SVH015W	Field Sample
JBERGW0033	H042-04	1.12	NA	08/05/1615:36	08/04/1613:00	RHL022	RAL010	SVH015W	Field Sample

FN - Filename
% Moist - Percent Moisture

SGS

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/02/16
Project	: JBER GW SAMPLING	Date Received:	08/04/16
Batch No.	: 16H042	Date Extracted:	08/04/16 13:00
Sample ID:	JBERGW0021	Date Analyzed:	08/05/16 14:47
Lab Samp ID:	H042-01	Dilution Factor:	1
Lab File ID:	RHL019	Matrix :	WATER
Ext Btch ID:	SVH015W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	38.7	40.00	96.9	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/02/16
Project	: JBER GW SAMPLING	Date Received:	08/04/16
Batch No.	: 16H042	Date Extracted:	08/04/16 13:00
Sample ID:	JBERGW9003	Date Analyzed:	08/05/16 15:03
Lab Samp ID:	H042-02	Dilution Factor:	1.12
Lab File ID:	RHL020	Matrix :	WATER
Ext Btch ID:	SVH015W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-QE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.56	0.15	0.28

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	40.7	44.80	90.9	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/02/16
Project	: JBER GW SAMPLING	Date Received:	08/04/16
Batch No.	: 16H042	Date Extracted:	08/04/16 13:00
Sample ID:	JBERGW0032	Date Analyzed:	08/05/16 15:19
Lab Samp ID:	H042-03	Dilution Factor:	1.06
Lab File ID:	RHL021	Matrix :	WATER
Ext Btch ID:	SVH015W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.53	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	39.3	42.40	92.7	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/02/16
Project	: JBER GW SAMPLING	Date Received:	08/04/16
Batch No.	: 16H042	Date Extracted:	08/04/16 13:00
Sample ID:	JBERGW0033	Date Analyzed:	08/05/16 15:36
Lab Samp ID:	H042-04	Dilution Factor:	1.12
Lab File ID:	RHL022	Matrix :	WATER
Ext Btch ID:	SVH015W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.56	0.15	0.28

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	39.4	44.80	87.9	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	08/04/16
Batch No.	: 16H042	Date Extracted:	08/04/16 13:00
Sample ID	: MBLK1W	Date Analyzed:	08/05/16 13:15
Lab Samp ID	: SVH015WB	Dilution Factor:	1
Lab File ID	: RHL013	Matrix :	WATER
Ext Btch ID	: SVH015W	% Moisture :	NA
Calib. Ref.	: RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	35.0	40.00	87.4	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H042
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVH015WB	SVH015WL	SVH015WC		
LAB FILE ID:	RHL013	RHL014	RHL015		
DATE EXTRACTED:	08/04/1613:00	08/04/1613:00	08/04/1613:00	DATE COLLECTED:	NA
DATE ANALYZED:	08/05/1613:15	08/05/1613:27	08/05/1613:42	DATE RECEIVED:	08/04/16
PREP. BATCH:	SVH015W	SVH015W	SVH015W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	29.6	74	40.0	31.6	79	7	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	40.5	101	40.0	41.5	104	30-130

INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H042

Lab File ID: RAL002 BFB Injection Date : 01/12/16

Instrument ID: TOE9 BFB Injection Time : 10:33

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H042
Lab File ID: RHL002 BFB Injection Date : 08/05/16
Instrument ID: TOE9 BFB Injection Time : 08:52
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.70
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	6.16
173	Less than 2.0% of mass 174	0.78(0.9)1
174	50.0- 100.0% of mass 95	85.87
175	5.0 - 9.0% of mass 174	6.83(8.0)1
176	95.0 - 101.0% of mass 174	84.43(98.3)1
177	5.0 - 9.0% of mass 176	5.07(6.0)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	SSTD020	CSVE9A1233	RHL003	08/05/16	09:06
2	MBLK1W	SVH015WB	RHL013	08/05/16	13:15
3	LCS1W	SVH015WL	RHL014	08/05/16	13:27
4	LCD1W	SVH015WC	RHL015	08/05/16	13:42
5	JBERGW0021	H042-01	RHL019	08/05/16	14:47
6	JBERGW9003	H042-02	RHL020	08/05/16	15:03
7	JBERGW0032	H042-03	RHL021	08/05/16	15:19
8	JBERGW0033	H042-04	RHL022	08/05/16	15:36
9	SSTD020	CSVE9A1234	RHL024	08/05/16	16:09

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16H042
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.26
	LOWER LIMIT	528004	1.92
	SAMPLE ID		
1	SSTD020	945126	2.07
2	MBLK1W	890538	2.07
3	LCS1W	886490	2.07
4	LCD1W	839619	2.07
5	JBERGW0021	918389	2.07
6	JBERGW9003	892162	2.07
7	JBERGW0032	843545	2.07
8	JBERGW0033	923017	2.07
9	SSTD020	962818	2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.167 minutes (10 sec) of internal standard RT
RT LOWER LIMIT = - 0.167 minutes (10 sec) 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL003
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/05/16 09:06

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-Dioxane-d8	20.000	0	945126	1	1	2.072	2.087	0				
	2	1,4-Dioxane	18.657	-6.7	1570140	1.661	1.781	2.097	2.113	5.77				
	3	Bromobenzene	19.608	-2.0	1945434	2.058	2.100	4.240	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL024
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/05/16 16:09

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-Dioxane-d8	20.000	0	962818	1	1	2.072	2.087	0				
2	1,4-Dioxane	18.796	-6.0	1611454	1.674	1.781	2.097	2.113	5.77				
3	Bromobenzene	20.421	2.1	2064084	2.144	2.100	4.241	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H05\RHL003.D Vial: 3
Acq On : 05 Aug 2016 09:06 Operator: KVu
Sample : CSVE9A1213 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 05 09:58:15 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	89	-0.02
2	T	1,4-Dioxane	20.000	18.657	6.7	83	-0.02
3	S	Bromobenzene	20.000	19.608	2.0	81	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H05\RHL003.D Vial: 3
Acq On : 05 Aug 2016 09:06 Operator: KVu
Sample : CSVE9A1213 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 05 09:58:15 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	89	-0.02
2	T	1,4-Dioxane	1.781	1.661	6.7	83	-0.02
3	S	Bromobenzene	2.100	2.058	2.0	81	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H05\RHL024.D Vial: 24
Acq On : 05 Aug 2016 16:09 Operator: KVu
Sample : CSVE9A1214 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 08 10:18:14 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	91	-0.02
2	T	1,4-Dioxane	20.000	18.796	6.0	86	-0.02
3	S	Bromobenzene	20.000	20.421	-2.1	85	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H05\RHL024.D Vial: 24
Acq On : 05 Aug 2016 16:09 Operator: KVu
Sample : CSVE9A1214 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 08 10:18:14 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	91	-0.02
2	T	1,4-Dioxane	1.781	1.674	6.0	86	-0.02
3	S	Bromobenzene	2.100	2.144	-2.1	85	0.00

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

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
↓	2	BFBE9A1201	↓			
↓	3	SVE9A12 1	↓			0.05 ppm 14 DIOX
↓	4	↓ 2	↓			.075
↓	5	3	↓			.15
↓	6	4	↓			.2
↓	7	5	↓			.5
↓	8	6	↓			1
↓	9	7	↓			5
↓	10	8	↓			20
↓	11	9	↓			60
↓	12	↓ 10	↓			100 ↓
↓	13	ISVE9A12 1	↓			ICV
SVA001W	14	LOQ-01	1		X	
↓	15	LOD-01	↓		↓	
SVA002S	16	LOQ-02	1	X		
↓	↓ 17	LOD-02	↓	↓		
						MV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC / ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: MV

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 8/5/16 8:52 End Date/Time: 8/5/16 16:09

ANALYTICAL BATCH: CSVE9A1233

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RHL001	IBE9A1233				
	2	BFBE9A1233				
	3	CSVE9A1233				
SVH004W	4	SVH004WB	1		x	
↓	5	↓ WL	↓		↓	
	6	↓ WC				
	7	16G344-02M				
	8	02S				
	9	02				
	10	08				
	11	16				
↓	12	↓ 17	↓		↓	
SVH015W	13	SVH015WB	1		x	
↓	14	↓ WL	↓		↓	
	15	↓ WC				
	16	16H027-01				
	17	02				
	18	↓ 03				
	19	16H042-01				
	20	02				
	21	↓ 03				
	22	↓ 04				
↓	23	16H047-06	↓		↓	
	↓ 24	CSVE9A1234				
		VW 8/8/16				

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name / ID / Conc. (mg/L)	
DFTPP	
INT. STD.	SS2A-13-01-15 — 1000
ICV	30
DCC	SS2C-14-~~28~~30-02 — 20
BENZIDINE	
APP 9	VW 8/5/16
APP 9 ADD	
BFB	SS2C-14-28-03 — 50
Solvent	ID
CH_2Cl_2	55219
DATA FILE	16H05
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: VV

Date Disposed: 8/8/16

Disposed By: VV

This page is checked during data review.

T3-09-2013

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-092
Preparation Batch: SVH015W
Matrix: Water
Micropipette ID: 100 ML: PE97C-03 ✓
Micropipette ID: 1000 ML: PE00-03 ✓

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1 ✓
LCS/MS 1,4 Dioxane	SS2B-12-21-03	1.0 ✓
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	55219
Na_2SO_4	SWIB-003-12-16
H_2SO_4	–
NaOH	SPIB-08-81-04
Silica Sand	–
Silica Gel	–
Reagent Water	SWIA-006-01-22
Residual Chlorine Strip	6124
pH Strip	MC6B1919
Filter Paper	9728559 B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVH015WB			1
-WL			1
-WC			1
H027-01			1
-02			1
-03			1
H042-01			2
-02			2
-03			2
-04			2
H047-06			2

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3		
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: JM — Witnessed By: TW
Standard Added By: JM — Checked By: ML
Extract Received By: KV 8/5/16 — Location: SE01#4
Disposed By: — Disposed On:

FileID: SVH015W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVH015W01	SVH015WB	1000	ml	8/4/16 14:40	2	1000	2	1	1,4 Dioxane
16SVH015W02	SVH015WL	1000	ml	8/4/16 14:40	2	1000	2	1	
16SVH015W03	SVH015WC	1000	ml	8/4/16 14:40	2	1000	2	1	
16SVH015W04	H027-01	950	ml	8/4/16 14:40	2	1000	2	1.05	yellow
16SVH015W05	H027-02	920	ml	8/4/16 14:40	2	1000	2	1.09	
16SVH015W06	H027-03	930	ml	8/4/16 14:40	2	1000	2	1.08	
16SVH015W07	H042-01	1000	ml	8/4/16 14:40	2	1000	2	1	
16SVH015W08	H042-02	890	ml	8/4/16 14:40	2	1000	2	1.12	
16SVH015W09	H042-03	940	ml	8/4/16 14:40	2	1000	2	1.06	
16SVH015W10	H042-04	890	ml	8/4/16 14:40	2	1000	2	1.12	light yellow
16SVH015W11	H047-06	1000	ml	8/4/16 14:40	2	1000	2	1	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 8/4/16 13:00 ☐ pHAdj(≤2) @

Prepared By: JMuert

☑ Extraction Ended @ 8/5/16 7:00 ☑ pHAdj(≥11) @ 8/4/16 13:00

Checked By: ML

Comments: volume entered after extraction started, pH 6-7, no Cl detected

Date 8/5/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H090**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1005
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3035
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 08-18-2016
EMAX Batch No.: 16H090

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/05/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0027	H090-01	08/03/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0030	H090-02	08/03/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0028	H090-03	08/03/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0026	H090-04	08/04/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0026MS	H090-04M	08/04/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0026MSD	H090-04S	08/04/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc. Exceeding Expectations

Laboratory Chain of Custody Record

16H090

Date: 8/3/16 Page 1 of 1 COC #: GW- 03

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #: AF5066-03.04

Megan Matteazzi Meg M 8/3/16

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
							GW		
1	OU3MW-11	JBERGW0027	N/A	8/3/16	1335	GW	X	2	
2	OU5MW-38	JBERGW0030	N/A	8/3/16	1435	GW	X	2	
3	OU5MW-06	JBERGW0028	N/A	8/3/16	1525	GW	X	2	
4	OU3MW-02	JBERGW0026	N/A	8/4/16	0920	GW	X	2	
		JBERGW0026-MS	N/A	8/4/16	0920	GW	X	2	
		JBERGW0026-MSD	N/A	8/4/16	0920	GW	X	2	

Meg M 8/4/16

Relinquished by	Date	Received by	Date
Signature: Meg M	8/4/16	Signature:	
Printed Name: Megan Matteazzi	Time: 1100	Printed Name:	Time
Company: HGL		Company:	
Relinquished by	Date	Received by	Date
Signature:		Signature: Miguel Limon	8/05/16
Printed Name:	Time	Printed Name: EMAX	Time: 8:55
Company:		Company:	

Total No. of Containers (this page): 12 6 MM
Total (entire COC): 12 6 MM

Total # of coolers: 2
FedEx airbill #(s):

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

T= 1.4
2.3°

1431

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16H090
☑ Fedex ☐ UPS ☐ GSO ☐ Others	'mstr' 7837 4713 1440	Recipient Miguel
☐ EMAX Courier ☐ Client Delivery		Date 8/05/16 Time 8:55

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☐ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☐ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool. >6 °C but not frozen)	☑ Cooler 1 1.4 °C	☑ Cooler 2 2.3 °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	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
* 4	7-11	D11	Actual container count 5	R8

8/5/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

MS 8/5/16

NOTES/OBSERVATIONS: * Only 5 Bottles provided for MS/MSD

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	Informed client
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 8/05/16 8/5/16

SRF Date 8/5/16

PM Date 8/5/16

ORIGIN ID:GSTA (330) 840-9449
J DEVAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 04AUG16
ACTWGT: 52.30 LB
CAD: 6990280/SSF01704
DIMS: 27x15x15 IN

BILL THIRD PARTY

Part # 156297-435 RITE 10/15

TO **EMAX LAB INC**
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J1620160705010

2 of 2
MPS# 0263 7837 4713 1450
Mstr# 7837 4713 1440 0201

XH HHRA

FRI - 05 AUG 10:30A
PRIORITY OVERNIGHT
DSR
90501
CA-US LAX

ORIGIN ID:GSTA (330) 840-9449
J DEVAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 04AUG16
ACTWGT: 52.70 LB
CAD: 6990280/SSF01704
DIMS: 27x15x15 IN

BILL THIRD PARTY

TO EMAX LAB INC
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J162016070501uv

1 of 2

TRK# 0201 7837 4713 1440

MASTER

XH HHRA

FRI - 05 AUG 10:30A
PRIORITY OVERNIGHT

DSR
90501
CA-US LAX

RT 477 1 A
ST 3 08.05
1440

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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H090

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H090

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of four (4) water samples were received on 08/05/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RHL027) and CCV(Datafile ID:RHL039). 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. SVH024WB - 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. SVH024WL/SVH024WC was 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) set of MS/MSD was analyzed. 1,4-Dioxane was within MS QC limits in H090-04M/S. Refer to Matrix QC summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING
SDG NO. : 16H090
Instrument ID : T-0E9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVH024WB	1	NA	08/11/1613:27	08/09/1610:00	RHL028	RAL010	SVH024W	Method Blank
LCS1W	SVH024WL	1	NA	08/11/1613:38	08/09/1610:00	RHL029	RAL010	SVH024W	Lab Control Sample (LCS)
LCD1W	SVH024WC	1	NA	08/11/1613:54	08/09/1610:00	RHL030	RAL010	SVH024W	LCS Duplicate
JBERGW0027	H090-01	0.95	NA	08/11/1614:42	08/09/1610:00	RHL033	RAL010	SVH024W	Field Sample
JBERGW0030	H090-02	1.05	NA	08/11/1614:58	08/09/1610:00	RHL034	RAL010	SVH024W	Field Sample
JBERGW0028	H090-03	1.01	NA	08/11/1615:14	08/09/1610:00	RHL035	RAL010	SVH024W	Field Sample
JBERGW0026	H090-04	1.12	NA	08/11/1615:30	08/09/1610:00	RHL036	RAL010	SVH024W	Field Sample
JBERGW0026MS	H090-04M	1.14	NA	08/11/1615:46	08/09/1610:00	RHL037	RAL010	SVH024W	Matrix Spike Sample (MS)
JBERGW0026MSD	H090-04S	1.22	NA	08/11/1616:02	08/09/1610:00	RHL038	RAL010	SVH024W	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

2SDG

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/03/16
Project	: JBER GW SAMPLING	Date Received:	08/05/16
Batch No.	: 16H090	Date Extracted:	08/09/16 10:00
Sample ID:	JBERGW0027	Date Analyzed:	08/11/16 14:42
Lab Samp ID:	H090-01	Dilution Factor:	0.95
Lab File ID:	RHL033	Matrix :	WATER
Ext Btch ID:	SVH024W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-QE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.48	0.12	0.24

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	33.8	38.00	89.0	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/03/16
Project	: JBER GW SAMPLING	Date Received:	08/05/16
Batch No.	: 16H090	Date Extracted:	08/09/16 10:00
Sample ID:	JBERGW0030	Date Analyzed:	08/11/16 14:58
Lab Samp ID:	H090-02	Dilution Factor:	1.05
Lab File ID:	RHL034	Matrix :	WATER
Ext Btch ID:	SVH024W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.52	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	24.8	42.00	59.1	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/03/16
Project	: JBER GW SAMPLING	Date Received:	08/05/16
Batch No.	: 16H090	Date Extracted:	08/09/16 10:00
Sample ID:	JBERGW0028	Date Analyzed:	08/11/16 15:14
Lab Samp ID:	H090-03	Dilution Factor:	1.01
Lab File ID:	RHL035	Matrix :	WATER
Ext Btch ID:	SVH024W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.51	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	38.1	40.40	94.3	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/04/16
Project	: JBER GW SAMPLING	Date Received:	08/05/16
Batch No.	: 16H090	Date Extracted:	08/09/16 10:00
Sample ID:	JBERGW0026	Date Analyzed:	08/11/16 15:30
Lab Samp ID:	H090-04	Dilution Factor:	1.12
Lab File ID:	RHL036	Matrix :	WATER
Ext Btch ID:	SVH024W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.56	0.15	0.28

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	39.9	44.80	89.0	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	08/09/16
Batch No.	: 16H090	Date Extracted:	08/09/16 10:00
Sample ID:	MBLK1W	Date Analyzed:	08/11/16 13:27
Lab Samp ID:	SVH024WB	Dilution Factor:	1
Lab File ID:	RHL028	Matrix :	WATER
Ext Btch ID:	SVH024W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	34.9	40.00	87.2	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H090
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVH024WB	SVH024WL	SVH024WC		
LAB FILE ID:	RHL028	RHL029	RHL030		
DATE EXTRACTED:	08/09/1610:00	08/09/1610:00	08/09/1610:00	DATE COLLECTED:	NA
DATE ANALYZED:	08/11/1613:27	08/11/1613:38	08/11/1613:54	DATE RECEIVED:	08/09/16
PREP. BATCH:	SVH024W	SVH024W	SVH024W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	28.1	70	40.0	29.4	73	5	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	35.3	88	40.0	36.4	91	30-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H090
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1.12	1.14	1.22		
SAMPLE ID:	JBERGW0026				
LAB SAMP ID:	H090-04	H090-04M	H090-04S		
LAB FILE ID:	RHL036	RHL037	RHL038		
DATE EXTRACTED:	08/09/1610:00	08/09/1610:00	08/09/1610:00	DATE COLLECTED:	08/04/16
DATE ANALYZED:	08/11/1615:30	08/11/1615:46	08/11/1616:02	DATE RECEIVED:	08/05/16
PREP. BATCH:	SVH024W	SVH024W	SVH024W		
CALIB. REF:	RAL010	RAL010	RAL010		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,4-Dioxane	ND	45.6	31.6	69	48.8	34.8	71	3	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
Bromobenzene	45.6	42.5	93	48.8	44.8	92	30-130

INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc | Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: | SAS No.: SDG No.: 16H090
Lab File ID: RAL002 | BFB Injection Date : 01/12/16
Instrument ID: TOE9 | BFB Injection Time : 10:33
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

jw
02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H090
Lab File ID: RHL026 BFB Injection Date : 08/11/16
Instrument ID: TOE9 BFB Injection Time : 12:45
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.82
75	30.0 - 60.0% of mass 95	44.49
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.44
173	Less than 2.0% of mass 174	0.00(0.0)1
174	50.0- 100.0% of mass 95	87.62
175	5.0 - 9.0% of mass 174	6.81(7.8)1
176	95.0 - 101.0% of mass 174	86.07(98.2)1
177	5.0 - 9.0% of mass 176	5.48(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	SSTD020	CSVE9A1235	RHL027	08/11/16	13:04
2	MBLK1W	SVH024WB	RHL028	08/11/16	13:27
3	LCS1W	SVH024WL	RHL029	08/11/16	13:38
4	LCD1W	SVH024WC	RHL030	08/11/16	13:54
5	JBERGW0027	H090-01	RHL033	08/11/16	14:42
6	JBERGW0030	H090-02	RHL034	08/11/16	14:58
7	JBERGW0028	H090-03	RHL035	08/11/16	15:14
8	JBERGW0026	H090-04	RHL036	08/11/16	15:30
9	JBERGW0026MS	H090-04M	RHL037	08/11/16	15:46
10	JBERGW0026MSD	H090-04S	RHL038	08/11/16	16:02
11	SSTD020	CSVE9A1236	RHL039	08/11/16	16:18

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16H090
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT	#
	12 HOUR STD	1056008		2.09	
	UPPER LIMIT	2112016		2.26	
	LOWER LIMIT	528004		1.92	
	SAMPLE ID				
1	SSTD020	1028056		2.07	
2	MBLK1W	847647		2.07	
3	LCS1W	873500		2.07	
4	LCD1W	886644		2.07	
5	JBERGW0027	938599		2.08	
6	JBERGW0030	929514		2.07	
7	JBERGW0028	862512		2.07	
8	JBERGW0026	911339		2.07	
9	JBERGW0026MS	855433		2.07	
10	JBERGW0026MSD	901121		2.07	
11	SSTD020	1007381		2.07	

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL027
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/11/16 13:04

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-Dioxane-d8	20.000	0	1028056	1	1	2.072	2.087	0				
2	1,4-Dioxane	18.534	-7.3	1696633	1.650	1.781	2.097	2.113	5.77				
3	Bromobenzene	19.574	-2.1	2112476	2.055	2.100	4.241	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL039
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/11/16 16:18

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-Dioxane-d8	20.000	0	1007381	1	1	2.075	2.087	0				
2	1,4-Dioxane	18.929	-5.4	1697958	1.686	1.781	2.099	2.113	5.77				
3	Bromobenzene	20.598	3.0	2178306	2.162	2.100	4.241	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H11\RHL027.D Vial: 3
Acq On : 11 Aug 2016 13:04 Operator: KVu
Sample : CSVE9A1235 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 11 13:28:03 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	97	-0.02
2	T	1,4-Dioxane	20.000	18.534	7.3	90	0.00
3	S	Bromobenzene	20.000	19.574	2.1	88	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H11\RHL027.D Vial: 3
Acq On : 11 Aug 2016 13:04 Operator: KVu
Sample : CSVE9A1235 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 11 13:28:03 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	97	-0.02
2	T	1,4-Dioxane	1.781	1.650	7.4	90	0.00
3	S	Bromobenzene	2.100	2.055	2.1	88	0.00

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

3027

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H11\RHL039.D Vial: 15
Acq On : 11 Aug 2016 16:18 Operator: KVu
Sample : CSVE9A1236 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 12 07:25:24 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	95	-0.01
2	T	1,4-Dioxane	20.000	18.929	5.4	90	0.00
3	S	Bromobenzene	20.000	20.598	-3.0	90	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H11\RHL039.D Vial: 15
Acq On : 11 Aug 2016 16:18 Operator: KVu
Sample : CSVE9A1236 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 12 07:25:24 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	95	-0.01
2	T	1,4-Dioxane	1.781	1.686	5.3	90	0.00
3	S	Bromobenzene	2.100	2.162	-3.0	90	0.00

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

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
	2	BFBE9A1201				
	3	SVE9A12 1				0.05 ppm 14 DIOX
	4	2				.075
	5	3				.15
	6	4				.2
	7	5				.5
	8	6				1
	9	7				5
	10	8				20
	11	9				60
	12	10				100
	13	ISVE9A12 1				ICV
SVA001W	14	LOQ-01	1		X	
	15	LOD-01				
SVA002S	16	LOQ-02	1	X		
	17	LOD-02				
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

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.

LCRF

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 8/11/16 12:45 End Date/Time: 8/11/16 16:18

ANALYTICAL BATCH: CSVE9A1235

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RHL025	IBFE9A1235				
	26	BFBE9A1235				
	27	CSVE9A1235				
SVH024W	28	SVH024WB	1		X	
	29	WL	↓	↓	↓	
	30	WC				
	31	16H082-02				
	32	03				
	33	16H090-01				
	34	02				
	35	03				
	36	04				
	37	04M				
↓	38	04S	↓			
	39	CSVE9A1236				KN 8/12/16

	Instrument No:	E9
INITIAL CALIBRATION REFERENCE		
Date	1/12/16	
ICAL ID	SVE9A12	
Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV		
DCC	SS2C-14-30-02	20
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-28-03	50
Solvent	ID	
CH_2Cl_2	55219	
DATA FILE	16H11	
Electronic Data Archival		
Location		Date
HPCHEM_SVOA/TOE9		8/12/16

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KN

Date Disposed: 8/12/16

Disposed By: KN

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	5
☐ 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:

Book #: ESV-092
Preparation Batch: SVH024W
Matrix: Water
Micropipette ID: 100 uL: PE976-03
Micropipette ID: 1000 uL: PE00-03

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1
LCS/MS (1,4 Diox)	SS2B-12-21-03	1.0
LCS/MS		
LCS/MS		
LCS/MS		
Reagent	**Lot# / ID**	
CH_2Cl_2	55219	
Na_2SO_4	SWIB-003-13-05	
H_2SO_4	-	
NaOH	SPIB-08-81-04	
Silica Sand	-	
Silica Gel	-	
Reagent Water	SWIA-006-01-22	
Residual Chlorine Strip	6271	
pH Strip	HC681919	
Filter Paper	9728559 B	

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVH024WB			3
-WL			3
-WC			3
H082-02			3
-03			3
H090-01			3
-02			4
-03			4
-04			4
-04M			4
-04S			4

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2		
3	35	35
4	35	35
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: JM Witnessed By: TW
Standard Added By: JM Checked By: ML
Extract Received By: JV 8/10/16 Location: SE01 #8
Disposed By: Disposed On:

FileID: SVH024W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVH024W01	SVH024WB	1000	ml	8/9/16 10:35	2	1000	2	1	
16SVH024W02	SVH024WL	1000	ml	8/9/16 10:35	2	1000	2	1	1,4 Dioxane
16SVH024W03	SVH024WC	1000	ml	8/9/16 10:35	2	1000	2	1	1,4 Dioxane
16SVH024W04	H082-02	990	ml	8/9/16 10:35	2	1000	2	1.01	light yellow w/ soil sediment
16SVH024W05	H082-03	1000	ml	8/9/16 10:36	2	1000	2	1	light yellow w/ soil sediment
16SVH024W06	H090-01	1050	ml	8/9/16 10:36	2	1000	2	0.95	
16SVH024W07	H090-02	950	ml	8/9/16 10:36	2	1000	2	1.05	gray solution
16SVH024W08	H090-03	990	ml	8/9/16 10:36	2	1000	2	1.01	
16SVH024W09	H090-04	890	ml	8/9/16 10:36	2	1000	2	1.12	
16SVH024W10	H090-04M	880	ml	8/9/16 10:36	2	1000	2	1.14	
16SVH024W11	H090-04S	820	ml	8/9/16 10:36	2	1000	2	1.22	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 8/9/16 10:00 ☐ pHAdj(≤2) @

Prepared By: JMuert

☑ Extraction Ended @ 8/10/16 4:00 ☑ pHAdj(≥11) @ 8/9/16 10:00

Checked By: MY

Comments: volume entered after extraction started, pH 5-7, no Cl detected

Date 8/10/16

SOP EMAX-3520 Rev. 5

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H117**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1006
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3084
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 08-30-2016
EMAX Batch No.: 16H117

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/10/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0005	H117-01	08/08/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0006	H117-02	08/08/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW9002	H117-03	08/08/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0003	H117-04	08/08/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0001	H117-05	08/08/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

Date: 8/8/2016 16H117 Page 1 of 1

COC #: GW-04

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:
Sampler: (Signature) Megan Matteazzi (Printed Name)

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
							GW		
1	AP-4353	JBERGW0005	NA	8/8/16	1015	GW	X	2	
2	AP-4550	JBERGW0006	NA	8/8/16	1125	GW	X	2	
3	AP-4550	JBERGW9002	NA	8/8/16	1125	GW	X	2	
4	AP-4349	JBERGW0003	NA	8/8/16	1240	GW	X	2	
5	AP-3747	JBERGW0001	NA	8/8/16	1350	GW	X	2	

Megan Matteazzi 8/9/16

Total No. of Containers (this page): 10
Total (entire COC): 10

Relinquished by	Date	Received by	Date
Signature: Megan Matteazzi	8/9/16	Signature:	8/10/16
Printed Name: Megan Matteazzi	Time: 0900	Printed Name: Justin Hall	Time: 0855
Company: HGL		Company: Emax	
Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

T1 - 1.0°C
T2 - 1.1°C

Total # of coolers: 2
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

SDG

HGL HydroGeoLogic, Inc. Exceeding Expectations

Laboratory Chain of Custody Record

Date: 8/8/2016 Page 1 of 1 COC #: GW-04

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) Megan Matteazzi (Printed Name)

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
AP-4353	JBERGW0005	NA	8/8/16	1015	GW	X	2	
AP-4550	JBERGW0006	NA	8/8/16	1125	GW	X	2	
AP-4550	JBERGW9002	NA	8/8/16	1125	GW	X	2	
AP-4349	JBERGW0003	NA	8/8/16	1240	GW	X	2	
AP-3747	JBERGW0001	NA	8/8/16	1350	GW	X	2	

Meg Matt 8/9/16

Total No. of Containers (this page): 10
Total (entire COC): 10

Total # of coolers: 2
FedEx airbill #(s):

Relinquished by	Date	Received by	Date
Meg Matt	8/9/16		
Signature		Signature	
Megan Matteazzi	Time		Time
Printed Name	0900	Printed Name	
HGL			
Company		Company	
Relinquished by	Date	Received by	Date
Signature		Signature	
	Time		Time
Printed Name		Printed Name	
Company		Company	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

2007

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16H117
☑ Fedex ☐ UPS ☐ GSO ☐ Others	1-7837 8125 7746	Recipient J. Ha 11
☐ EMAX Courier ☐ Client Delivery	2-7837 8125 7735	Date 8/10/16 Time 0855

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: 2 original COCs included. Unused COC left in master folder. 8/10/16

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 1.0 °C	☑ Cooler 2 1.1 °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* 130538506	*B - S/N* 140252070	*C - S/N* 140252067	*D - S/N* 150555630	

2nd calib 8/16

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

C 8/16/16

AB 8/10/16

☐ 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:

☐ **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 8/10/16 8/10/16

SRF Date 8/10/16

PM Date 8/10/16

ORIGIN ID:GSTA (330) 840-9449
J DEVAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 09AUG16
ACTWGT: 48.40 LB
CAD: 6990279/SSF01704
DIMS: 25x13x13 IN

BILL THIRD PARTY

Part # 158967-435 RITE 10/15

TO ATTN: SAMPLING RECEIVING
EMAX LABORATORIES
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

JT6201607050UJF

1 of 2

TRK# 0201 7837 8125 7735

MASTER

XH HHRA

WED - 10 AUG 10:30A
PRIORITY OVERNIGHT
DSR AHS
90501
CA-US LAX

(2) 1.12

ORIGIN ID:GSTA (330) 840-9449
J DEVAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 09AUG16
ACTWGT: 49.50 LB
CAD: 6990279/SSF01704
DIMS: 25x13x13 IN

BILL THIRD PARTY

Part # 156297-435 RITZ 10/15

TO ATTN: SAMPLING RECEIVING
EMAX LABORATORIES
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

2 of 2
MPS# 0263 7837 8125 7746
Mstr# 7837 8125 7735

0201

XH HHRA

WED - 10 AUG 10:30A
PRIORITY OVERNIGHT
DSR AHS
90501
CA-US LAX

RT 47
ST 3

(1) 1.0°C

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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H117

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H117

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of five (5) water samples were received on 08/10/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RHL042) and CCV(Datafile ID:RHL058). 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. SVH030WB - 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. SVH030WL/SVH030WC was within LCS limits. Refer to LCS summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING
SDG NO. : 16H117
Instrument ID : T-QE9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVH030WB	1	NA	08/16/1611:15	08/11/1610:15	RHL043	RAL010	SVH030W	Method Blank
LCS1W	SVH030WL	1	NA	08/16/1611:26	08/11/1610:15	RHL044	RAL010	SVH030W	Lab Control Sample (LCS)
LCD1W	SVH030WC	1	NA	08/16/1611:42	08/11/1610:15	RHL045	RAL010	SVH030W	LCS Duplicate
JBERGW0005	H117-01	1.06	NA	08/16/1613:01	08/11/1610:15	RHL050	RAL010	SVH030W	Field Sample
JBERGW0006	H117-02	0.97	NA	08/16/1613:17	08/11/1610:15	RHL051	RAL010	SVH030W	Field Sample
JBERGW9002	H117-03	1.1	NA	08/16/1613:33	08/11/1610:15	RHL052	RAL010	SVH030W	Field Sample
JBERGW0003	H117-04	0.94	NA	08/16/1613:48	08/11/1610:15	RHL053	RAL010	SVH030W	Field Sample
JBERGW0001	H117-05	1.1	NA	08/16/1614:04	08/11/1610:15	RHL054	RAL010	SVH030W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/08/16
Project	: JBER GW SAMPLING	Date Received:	08/10/16
Batch No.	: 16H117	Date Extracted:	08/11/16 10:15
Sample ID:	JBERGW0005	Date Analyzed:	08/16/16 13:01
Lab Samp ID:	H117-01	Dilution Factor:	1.06
Lab File ID:	RHL050	Matrix :	WATER
Ext Btch ID:	SVH030W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.53	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	33.6	42.40	79.3	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

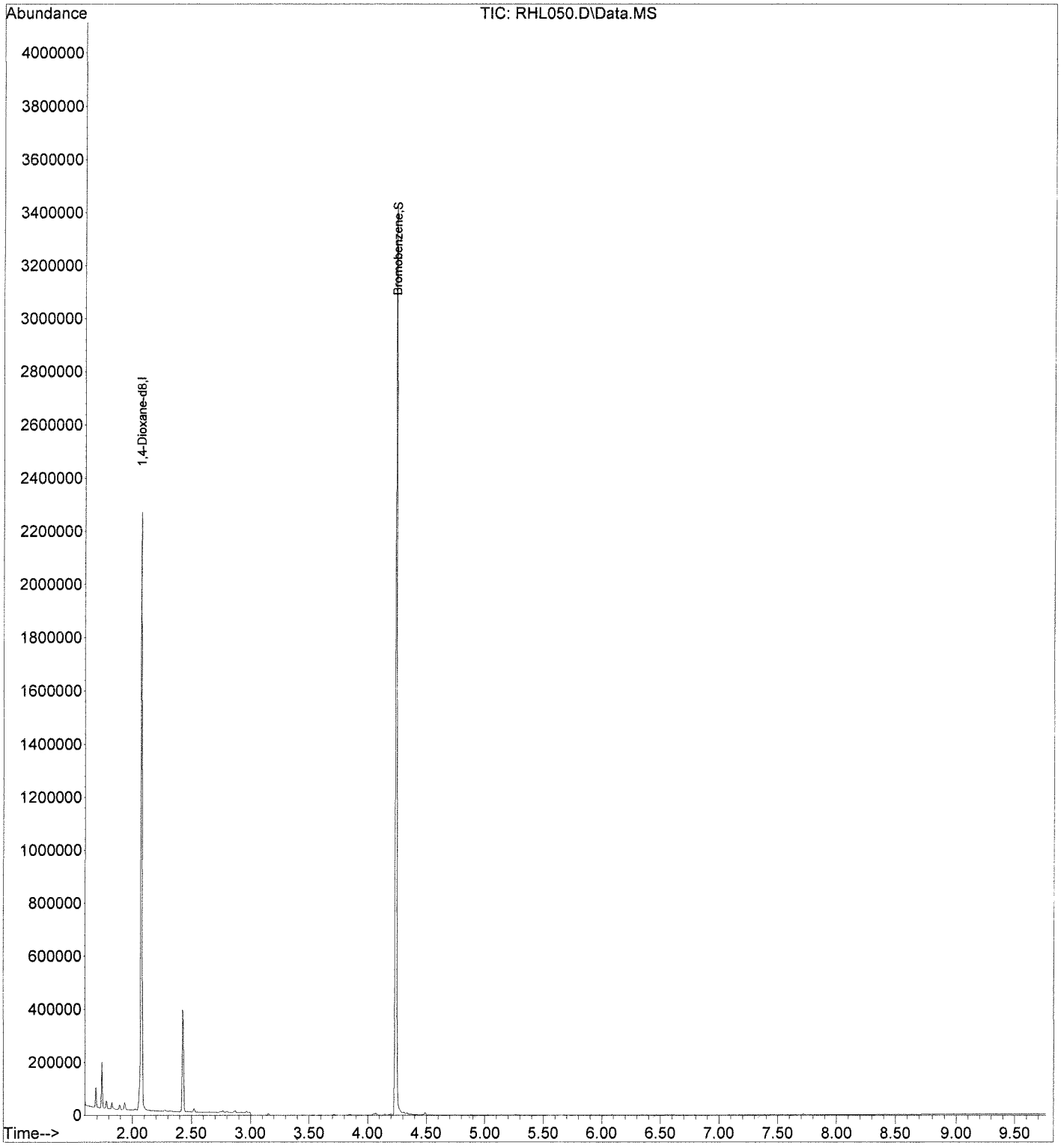
Data File : C:\msdchem\1\DATA\16H16\RHL050.D Vial: 11
Acq On : 16 Aug 2016 13:01 Operator: DJun
Sample : 16H117-01 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:00:27 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	990648	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1649083	15.86	ppm	0.00
Spiked Amount 20.000			Recovery = 79.30%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL050.D Vial: 11
Acq On : 16 Aug 2016 13:01 Operator: DJun
Sample : 16H117-01 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:00:27 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/08/16
Project	: JBER GW SAMPLING	Date Received:	08/10/16
Batch No.	: 16H117	Date Extracted:	08/11/16 10:15
Sample ID:	JBERGW0006	Date Analyzed:	08/16/16 13:17
Lab Samp ID:	H117-02	Dilution Factor:	0.97
Lab File ID:	RHL051	Matrix :	WATER
Ext Btch ID:	SVH030W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	0.37J	0.49	0.13	0.24

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	33.1	38.80	85.2	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

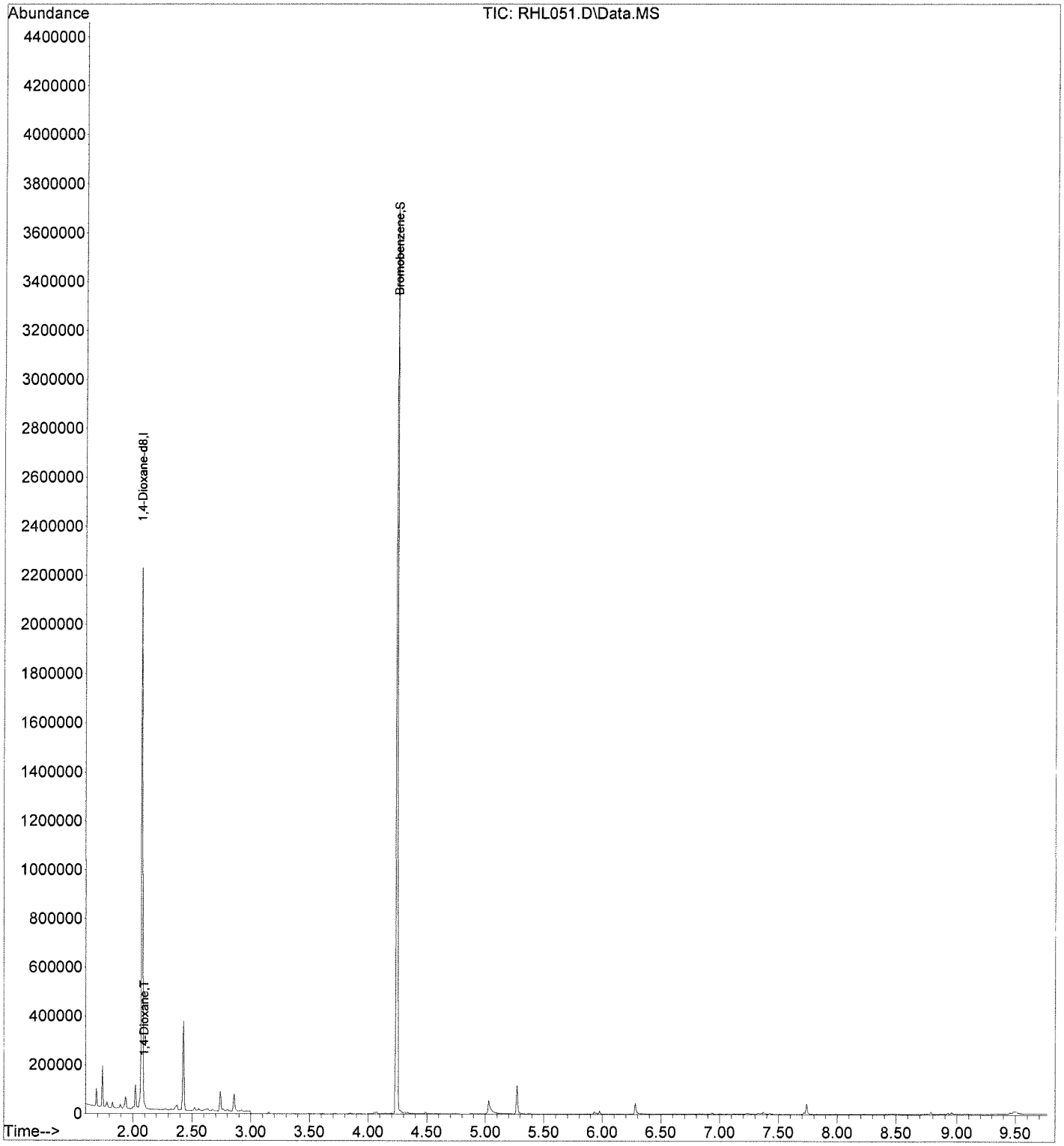
Data File : C:\msdchem\1\DATA\16H16\RHL051.D Vial: 12
Acq On : 16 Aug 2016 13:17 Operator: DJun
Sample : 16H117-02 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:01:27 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

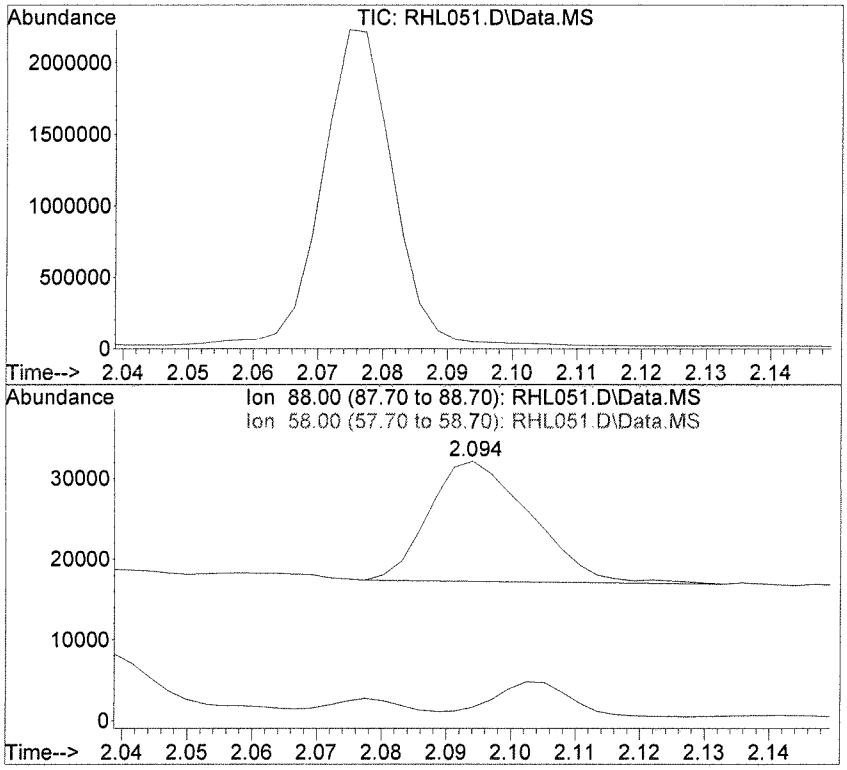
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	950179	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1699818	17.04	ppm	0.00
Spiked Amount 20.000			Recovery =	85.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.094	88	16217	0.19	ppm	# 12

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL051.D Vial: 12
Acq On : 16 Aug 2016 13:17 Operator: DJun
Sample : 16H117-02 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:01:27 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M





#2
1,4-Dioxane
Concen: 0.19 ppm
RT: 2.094 min Scan# 179
Delta R.T. -0.019 min
Lab File: RHL051.D
Acq: 16 Aug 2016 13:17

Tgt Ion: 88 Resp: 16217

Ion	Ratio	Lower	Upper
88	100		
58	0.0	44.3	104.3#

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/08/16
Project	: JBER GW SAMPLING	Date Received:	08/10/16
Batch No.	: 16H117	Date Extracted:	08/11/16 10:15
Sample ID:	JBERGW9002	Date Analyzed:	08/16/16 13:33
Lab Samp ID:	H117-03	Dilution Factor:	1.1
Lab File ID:	RHL052	Matrix :	WATER
Ext Btch ID:	SVH030W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	0.28J	0.55	0.14	0.28

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	27.1	44.00	61.5	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

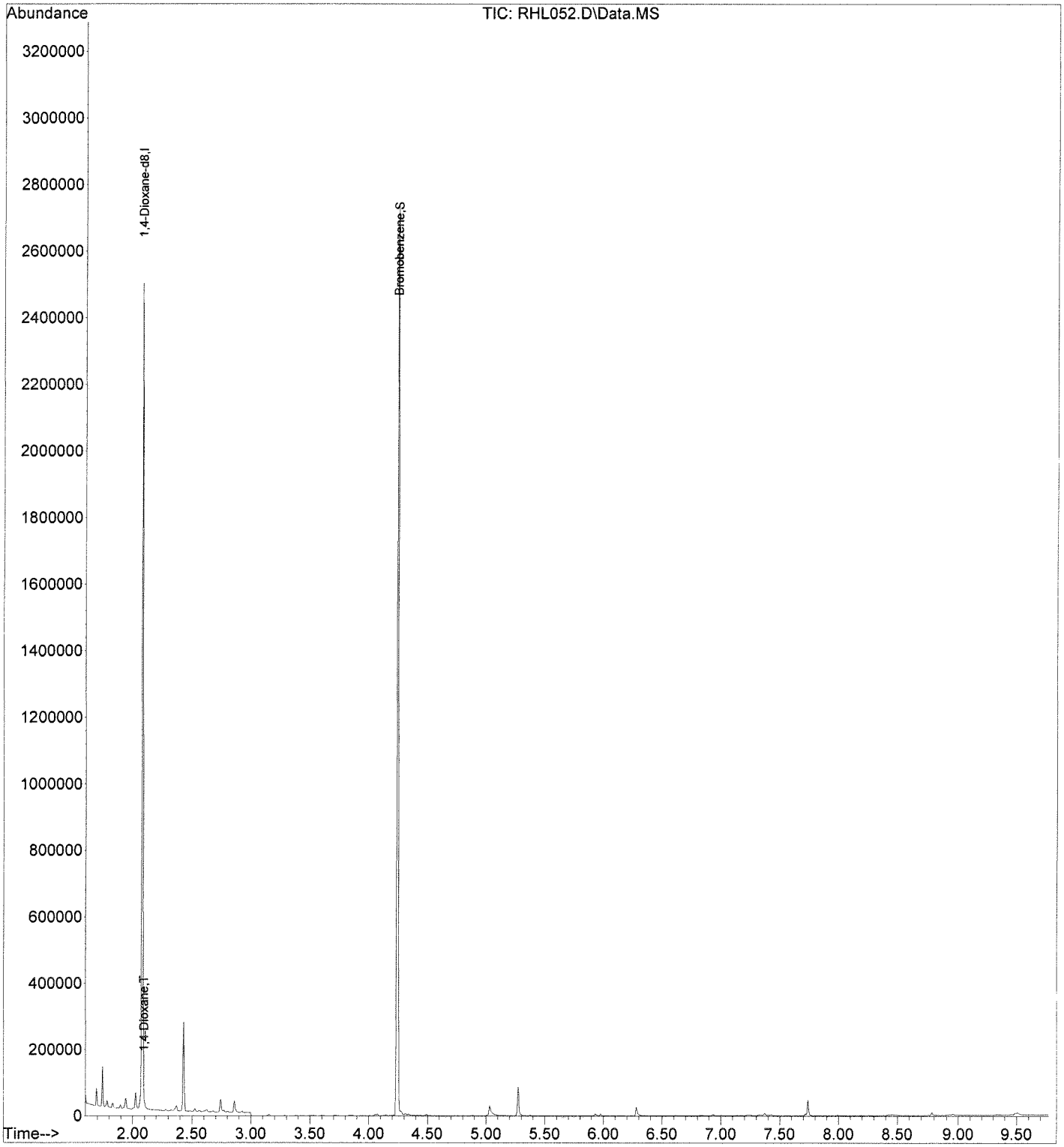
Data File : C:\msdchem\1\DATA\16H16\RHL052.D Vial: 13
Acq On : 16 Aug 2016 13:33 Operator: DJun
Sample : 16H117-03 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:02:59 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

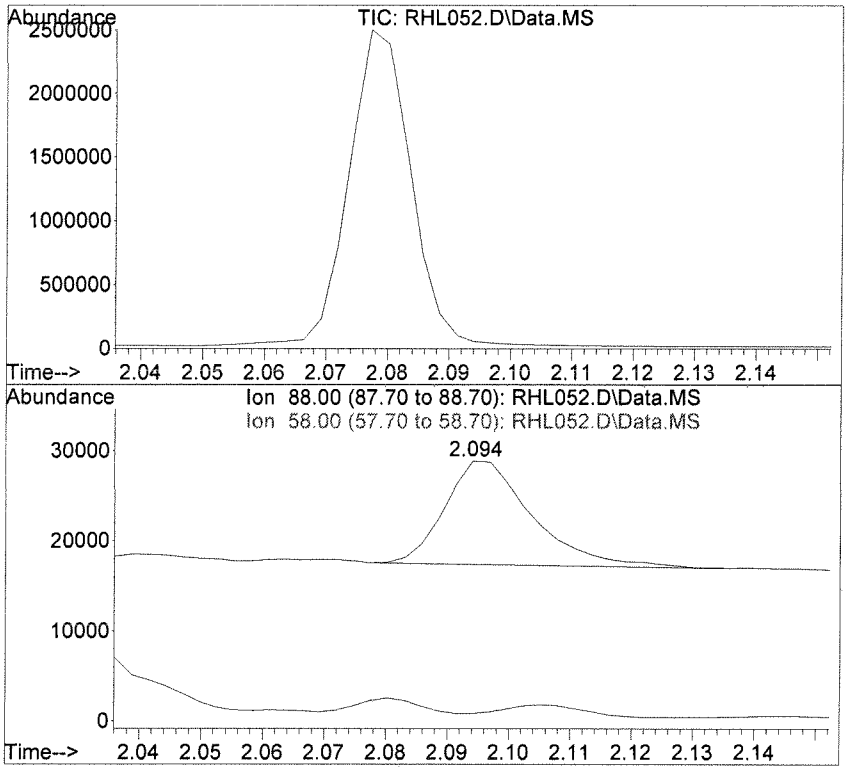
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.077	96	986834	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1274961	12.31	ppm	0.00
Spiked Amount 20.000			Recovery = 61.55%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.094	88	11283	0.13	ppm	# 12

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL052.D Vial: 13
Acq On : 16 Aug 2016 13:33 Operator: DJun
Sample : 16H117-03 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:02:59 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M





#2
1,4-Dioxane
Concen: 0.13 ppm
RT: 2.094 min Scan# 179
Delta R.T. -0.019 min
Lab File: RHL052.D
Acq: 16 Aug 2016 13:33

Tgt Ion: 88 Resp: 11283

Ion	Ratio	Lower	Upper
88	100		
58	0.0	44.3	104.3#

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/08/16
Project	: JBER GW SAMPLING	Date Received:	08/10/16
Batch No.	: 16H117	Date Extracted:	08/11/16 10:15
Sample ID:	JBERGW0003	Date Analyzed:	08/16/16 13:48
Lab Samp ID:	H117-04	Dilution Factor:	0.94
Lab File ID:	RHL053	Matrix :	WATER
Ext Btch ID:	SVH030W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-QE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.47	0.12	0.24

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	28.0	37.60	74.4	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL053.D Vial: 14
Acq On : 16 Aug 2016 13:48 Operator: DJun
Sample : 16H117-04 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:04:38 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

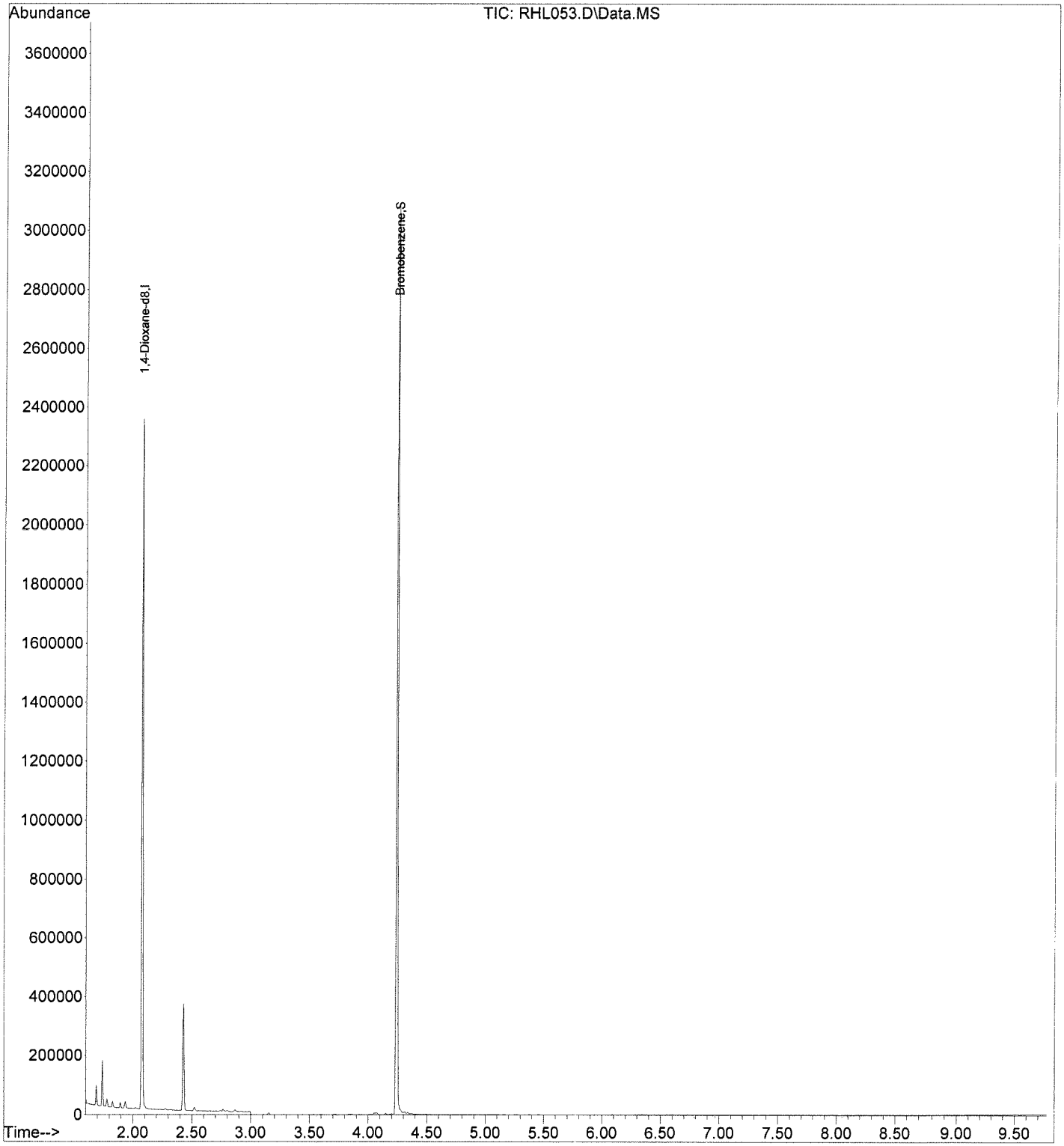
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	900541	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1407536	14.89	ppm	0.00
Spiked Amount 20.000			Recovery = 74.45%			
Target Compounds						Qvalue

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

3016

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL053.D Vial: 14
Acq On : 16 Aug 2016 13:48 Operator: DJun
Sample : 16H117-04 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:04:38 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/08/16
Project	: JBER GW SAMPLING	Date Received:	08/10/16
Batch No.	: 16H117	Date Extracted:	08/11/16 10:15
Sample ID	: JBERGW0001	Date Analyzed:	08/16/16 14:04
Lab Samp ID	: H117-05	Dilution Factor:	1.1
Lab File ID	: RHL054	Matrix :	WATER
Ext Btch ID	: SVH030W	% Moisture :	NA
Calib. Ref.	: RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.55	0.14	0.28

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	33.6	44.00	76.4	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

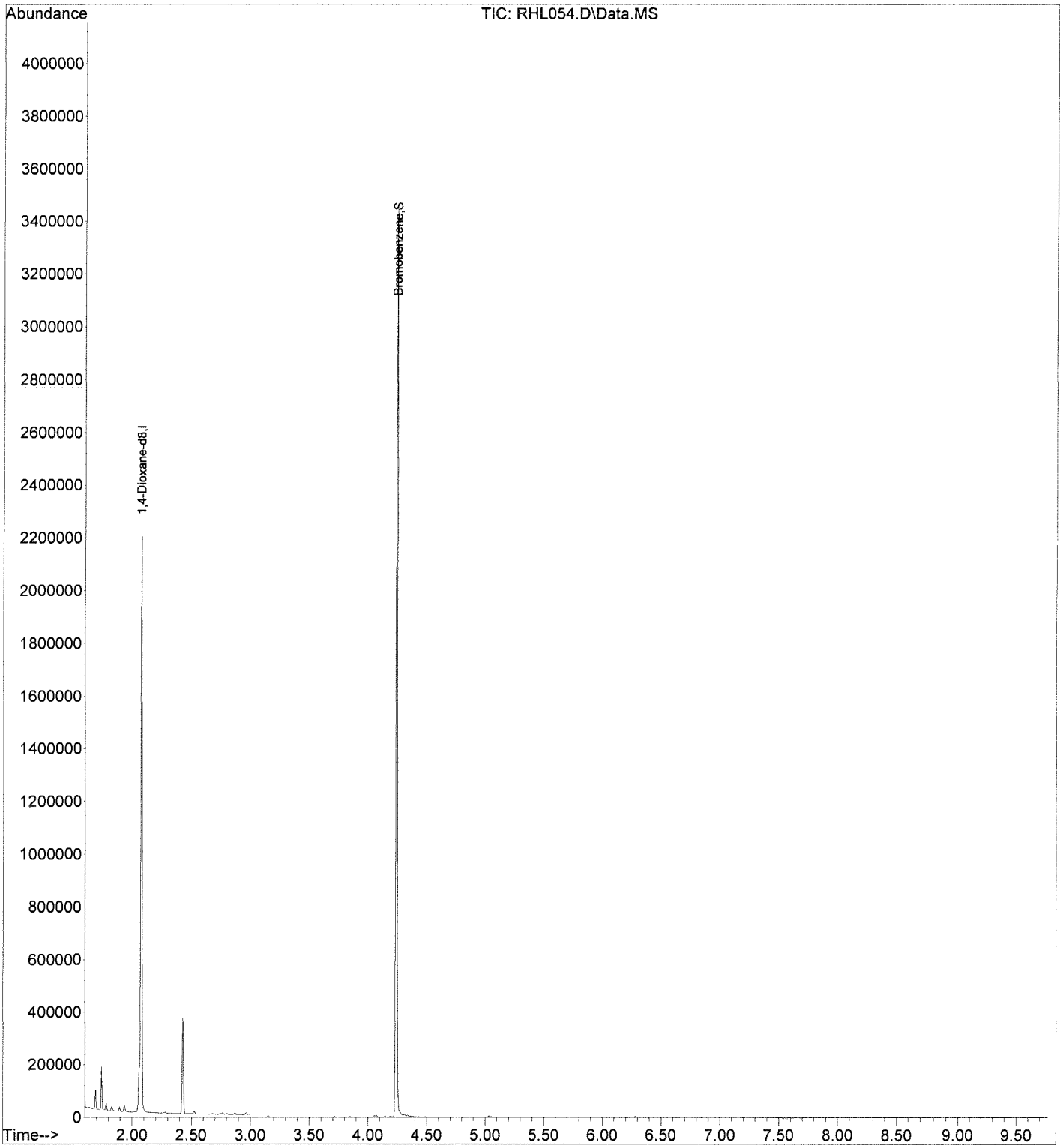
Data File : C:\msdchem\1\DATA\16H16\RHL054.D Vial: 15
Acq On : 16 Aug 2016 14:04 Operator: DJun
Sample : 16H117-05 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:04:51 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	1019769	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1635036	15.27	ppm	0.00
Spiked Amount 20.000			Recovery = 76.35%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL054.D Vial: 15
Acq On : 16 Aug 2016 14:04 Operator: DJun
Sample : 16H117-05 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:04:51 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	08/11/16
Batch No.	: 16H117	Date Extracted:	08/11/16 10:15
Sample ID:	MBLK1W	Date Analyzed:	08/16/16 11:15
Lab Samp ID:	SVH030WB	Dilution Factor:	1
Lab File ID:	RHL043	Matrix :	WATER
Ext Btch ID:	SVH030W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-QE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	40.4	40.00	101	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H117
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVH030WB	SVH030WL	SVH030WC		
LAB FILE ID:	RHL043	RHL044	RHL045		
DATE EXTRACTED:	08/11/1610:15	08/11/1610:15	08/11/1610:15	DATE COLLECTED:	NA
DATE ANALYZED:	08/16/1611:15	08/16/1611:26	08/16/1611:42	DATE RECEIVED:	08/11/16
PREP. BATCH:	SVH030W	SVH030W	SVH030W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	28.1	70	40.0	30.3	76	8	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	36.1	90	40.0	38.6	97	30-130

QC DATA

Quantitation Report (QT Reviewed)

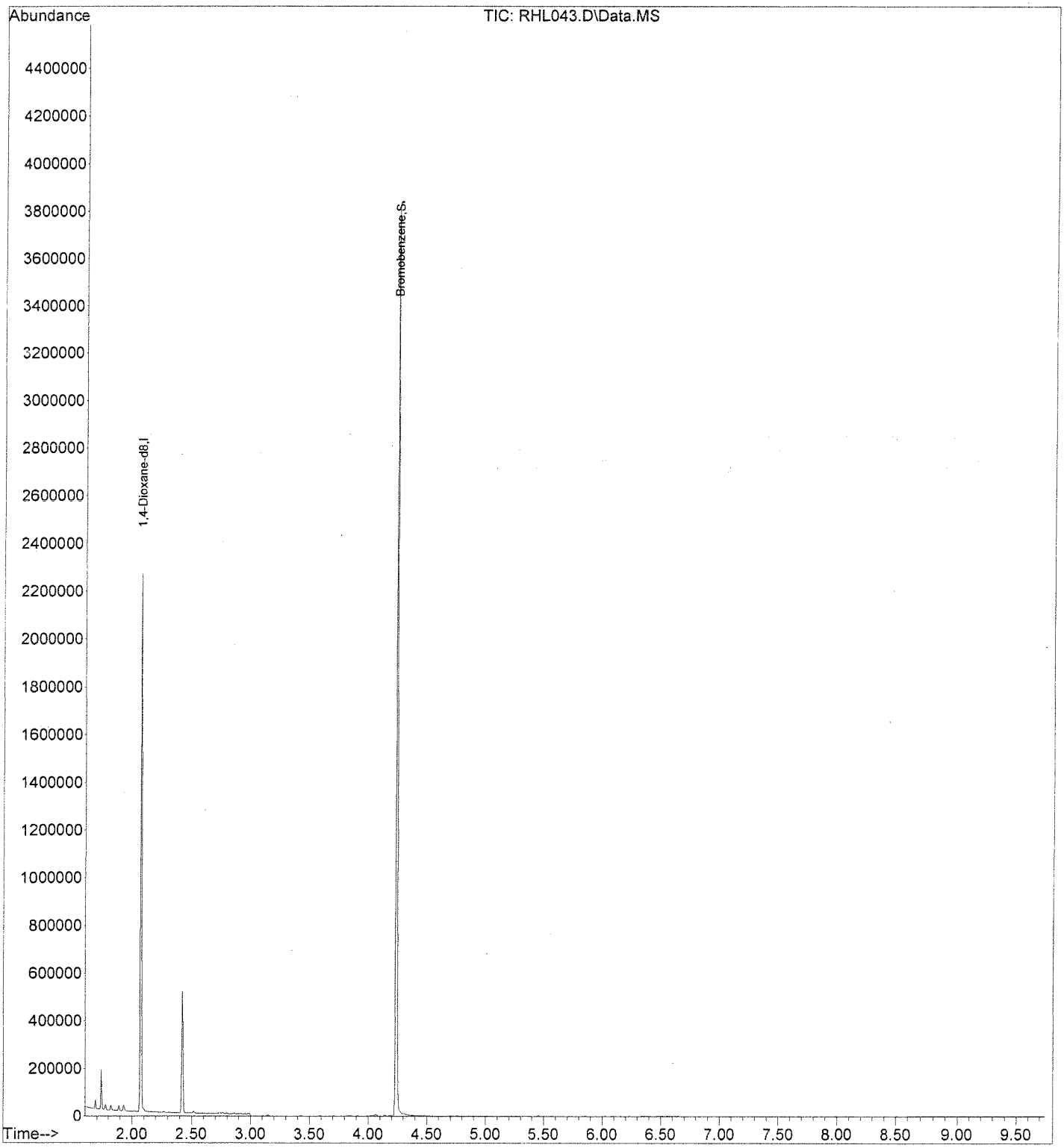
Data File : C:\msdchem\1\DATA\16H16\RHL043.D Vial: 4
Acq On : 16 Aug 2016 11:15 Operator: DJun
Sample : SVH030WB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:48:56 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.072	96	840180	20.00	ppm	-0.02
System Monitoring Compounds						
3) Bromobenzene	4.236	77	1779509	20.18	ppm	0.00
Spiked Amount 20.000			Recovery =	100.90%		
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL043.D Vial: 4
Acq On : 16 Aug 2016 11:15 Operator: DJun
Sample : SVH030WB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:48:56 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

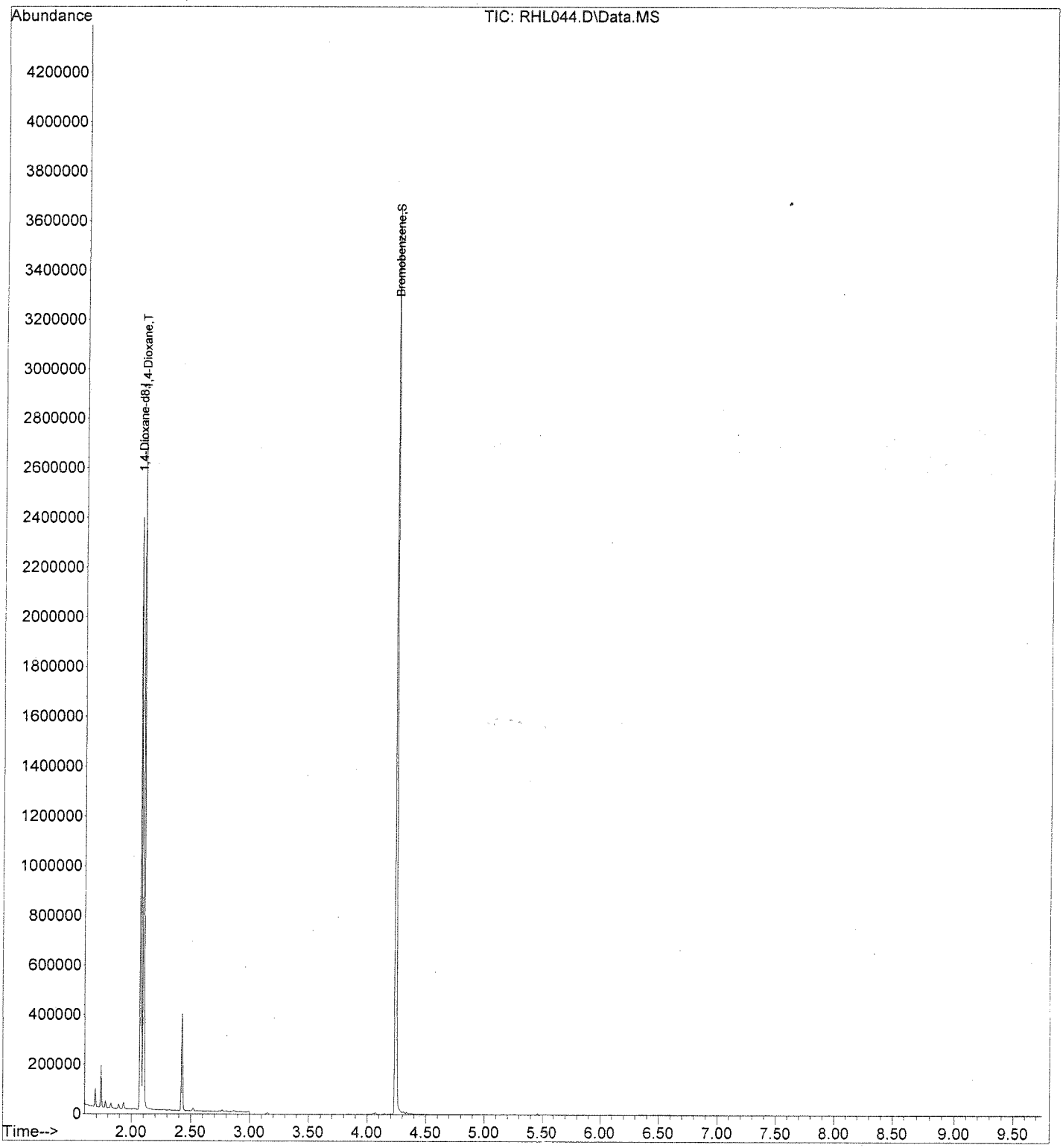
Data File : C:\msdchem\1\DATA\16H16\RHL044.D Vial: 5
Acq On : 16 Aug 2016 11:26 Operator: DJun
Sample : SVH030WL Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:49:12 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	885717	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1676620	18.03	ppm	0.00
Spiked Amount 20.000			Recovery = 90.15%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.099	88	1106175	14.03	ppm	99

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL044.D Vial: 5
Acq On : 16 Aug 2016 11:26 Operator: DJun
Sample : SVH030WL Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:49:12 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

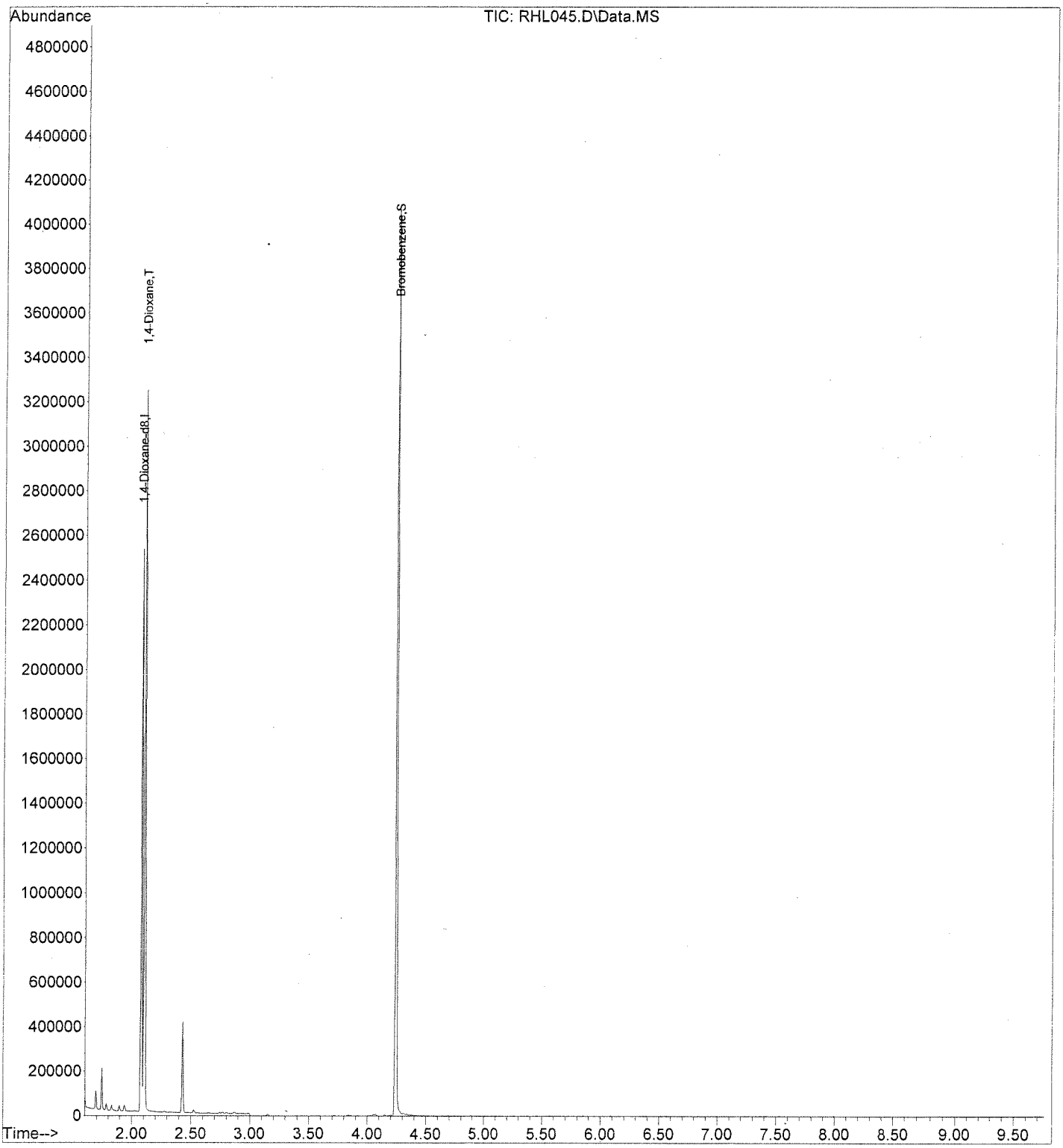
Data File : C:\msdchem\1\DATA\16H16\RHL045.D Vial: 6
Acq On : 16 Aug 2016 11:42 Operator: DJun
Sample : SVH030WC Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:49:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.077	96	941484	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.243	77	1908306	19.31	ppm	0.00
Spiked Amount 20.000			Recovery = 96.55%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	1270730	15.16	ppm	# 12

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL045.D Vial: 6
Acq On : 16 Aug 2016 11:42 Operator: DJun
Sample : SVH030WC Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:49:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



3030

INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H117
Lab File ID: RAL002 BFB Injection Date : 01/12/16
Instrument ID: TOE9 BFB Injection Time : 10:33
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-09-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVE9A12.M
Title : SEMIVOLATILES - SIM
Last Update : Wed Jan 13 13:39:02 2016
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	2.089	1.000	A	1	A	B
2	T	1,4-Dioxane	88	2.113	1.011	A	1	A	B
3	S	Bromobenzene	77	4.235	2.027	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

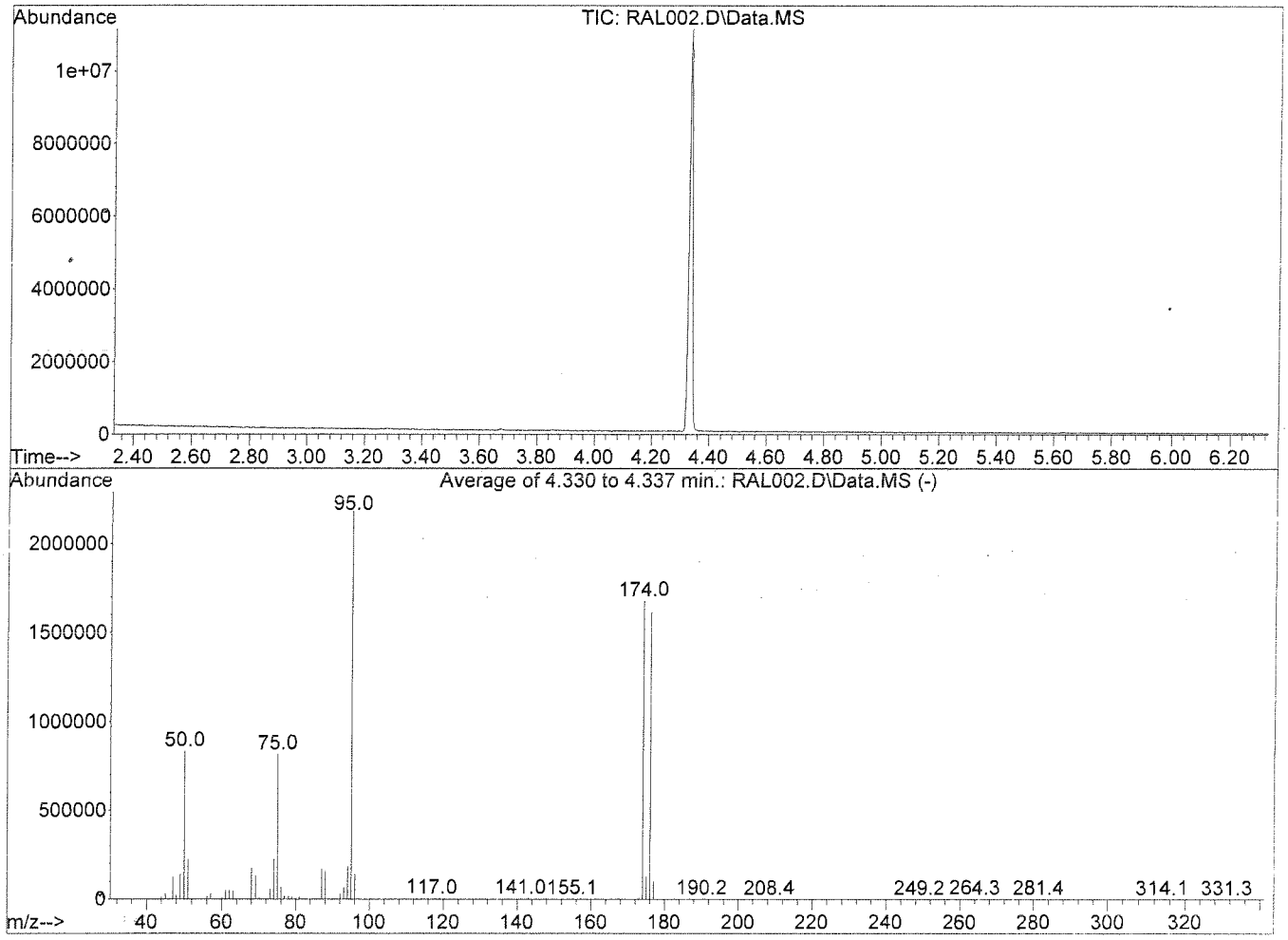
SVE9A12.M Wed Jan 13 13:39:20 2016 E9

02-04-16

Data Path : C:\msdchem\1\DATA\16A12\
Data File : RAL002.D
Acq On : 12 Jan 2016 10:33
Operator : KVu
Sample : BFBE9A1201
Misc : E9
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jan 13 13:45:13 2016



AutoFind: Scans 704, 705, 706; Background Corrected with Scan 696

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	38.1	832682	PASS
75	95	30	60	37.4	815808	PASS
95	95	100	100	100.0	2183851	PASS
96	95	5	9	6.5	140911	PASS
173	174	0.00	2	0.5	8598	PASS
174	95	50	100	76.8	1677141	PASS
175	174	5	9	7.5	125328	PASS
176	174	95	101	96.3	1614432	PASS
177	176	5	9	6.1	99275	PASS

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL003.D Vial: 3
Acq On : 12 Jan 2016 10:46 Operator: KVu
Sample : SVE9A121 0.05PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

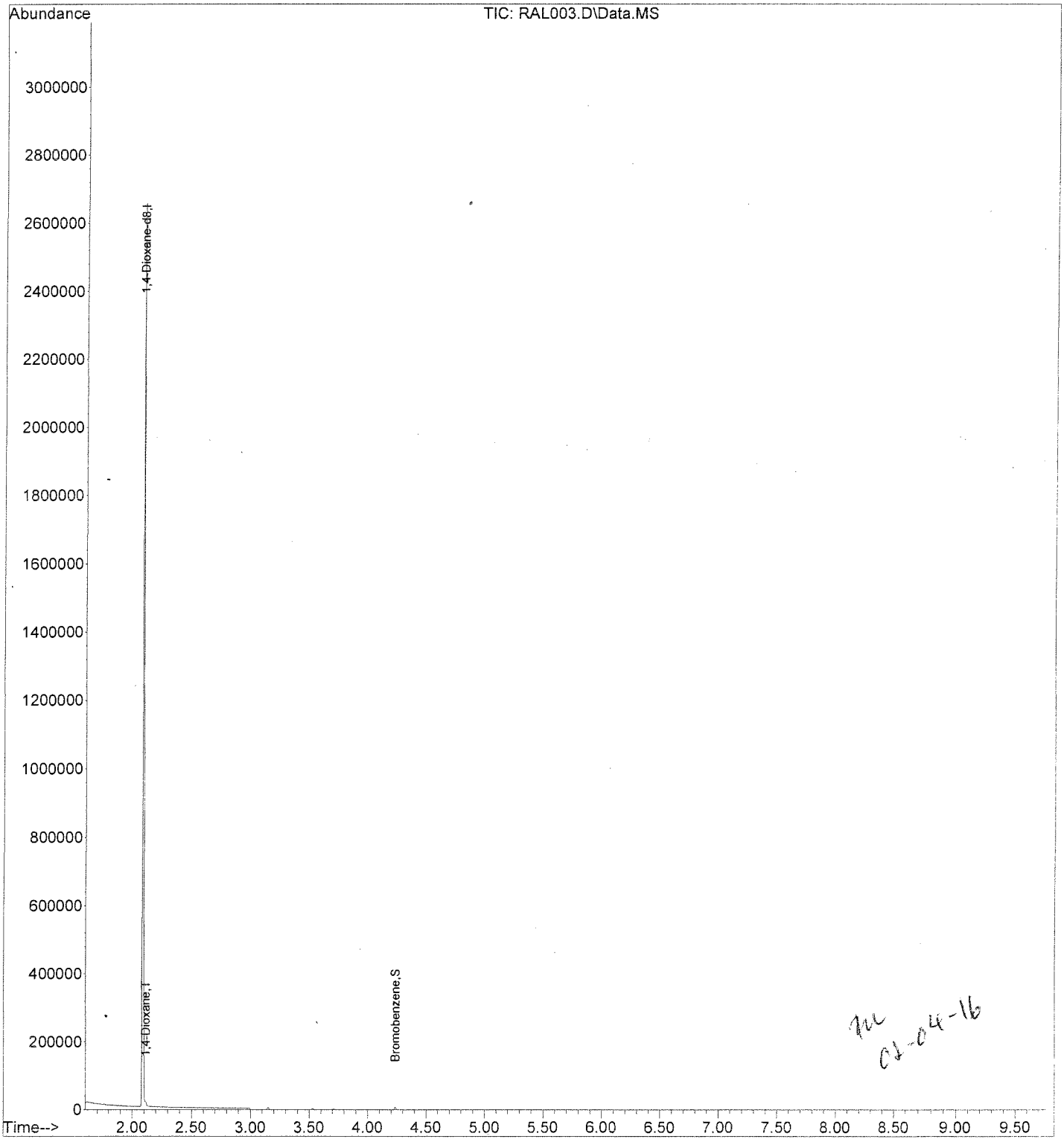
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	945510	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	4201	0.04	ppm	0.00
Spiked Amount 20.000			Recovery =	0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	4476	0.05	ppm	75

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

07-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL003.D Vial: 3
Acq On : 12 Jan 2016 10:46 Operator: KVu
Sample : SVE9A121 0.05PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



JM 02-04-16

3040

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL004.D Vial: 4
Acq On : 12 Jan 2016 11:00 Operator: KVu
Sample : SVE9A122 0.075PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:51 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

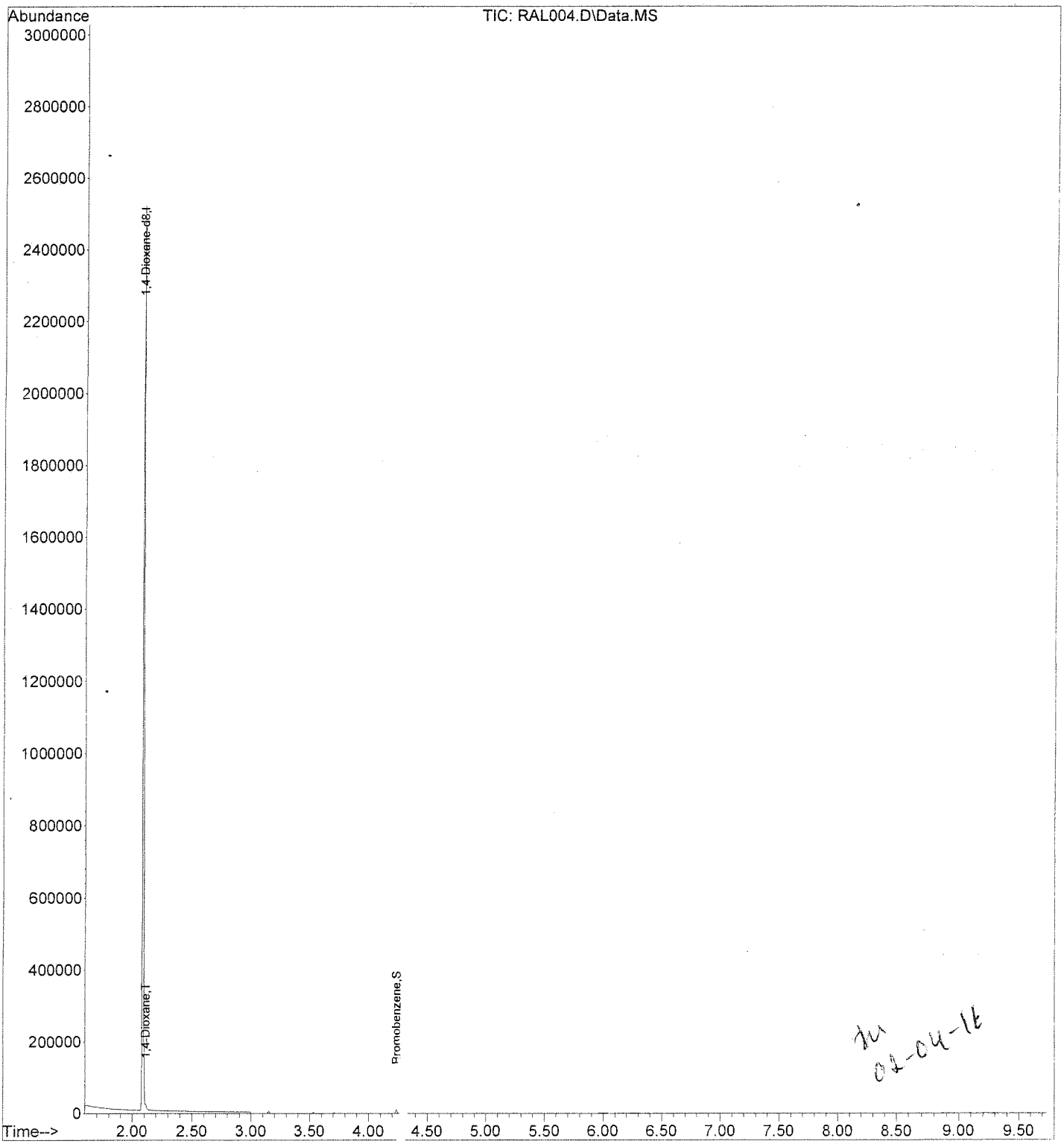
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	919219	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	6643	0.07	ppm	0.00
Spiked Amount 20.000			Recovery =	0.35%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	6082	0.07	ppm	87

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL004.D Vial: 4
Acq On : 12 Jan 2016 11:00 Operator: KVu
Sample : SVE9A122 0.075PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:51 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



KVu 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL005.D Vial: 5
Acq On : 12 Jan 2016 11:15 Operator: KVu
Sample : SVE9A123 0.15PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:11 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

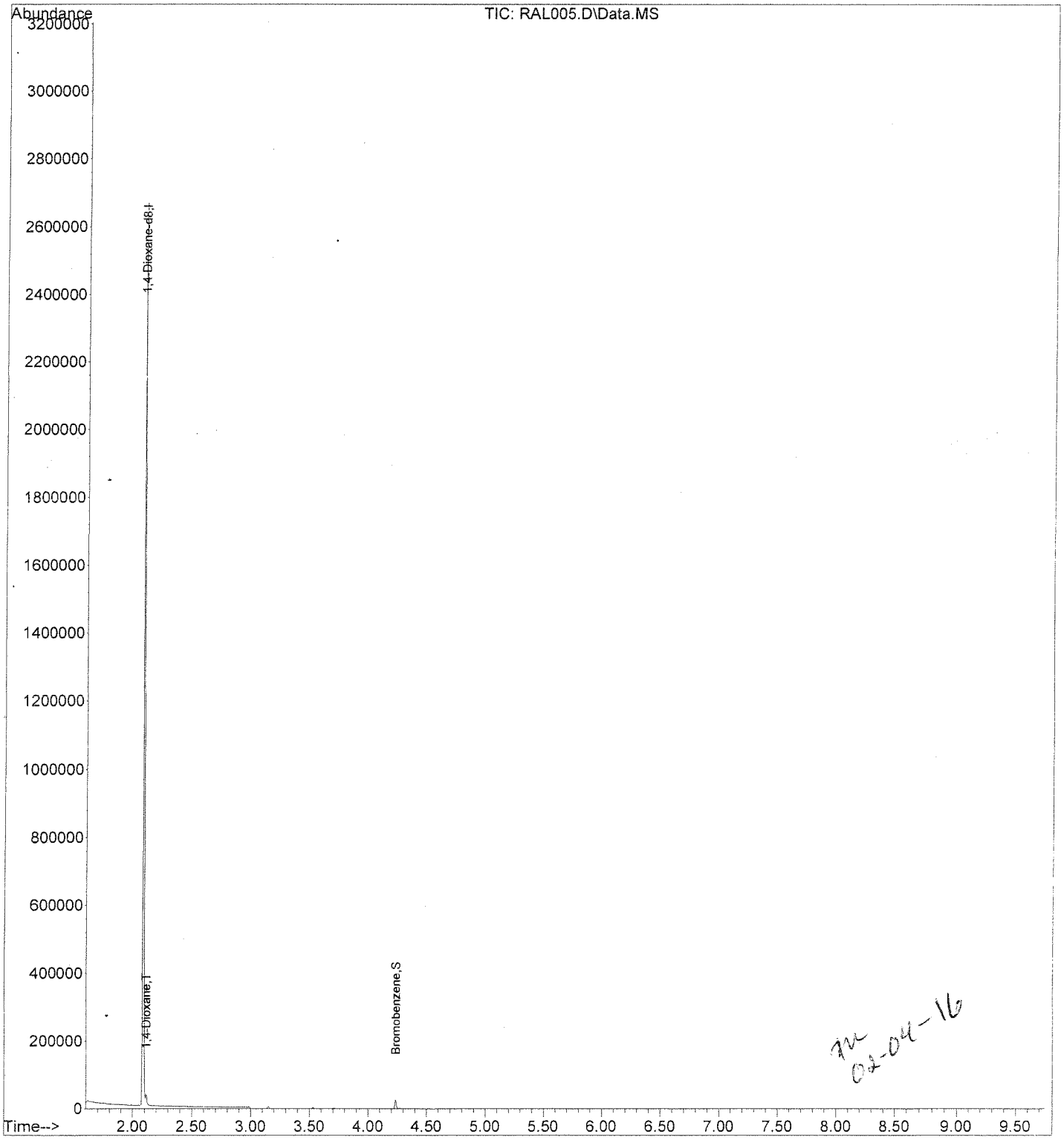
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	946724	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	15607	0.16	ppm	0.00
Spiked Amount 20.000			Recovery =	0.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	12840	0.15	ppm	94

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL005.D Vial: 5
Acq On : 12 Jan 2016 11:15 Operator: KVu
Sample : SVE9A123 0.15PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:11 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



TM 02-04-16

3044

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL006.D Vial: 6
Acq On : 12 Jan 2016 11:31 Operator: KVu
Sample : SVE9A124 0.2PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:22 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

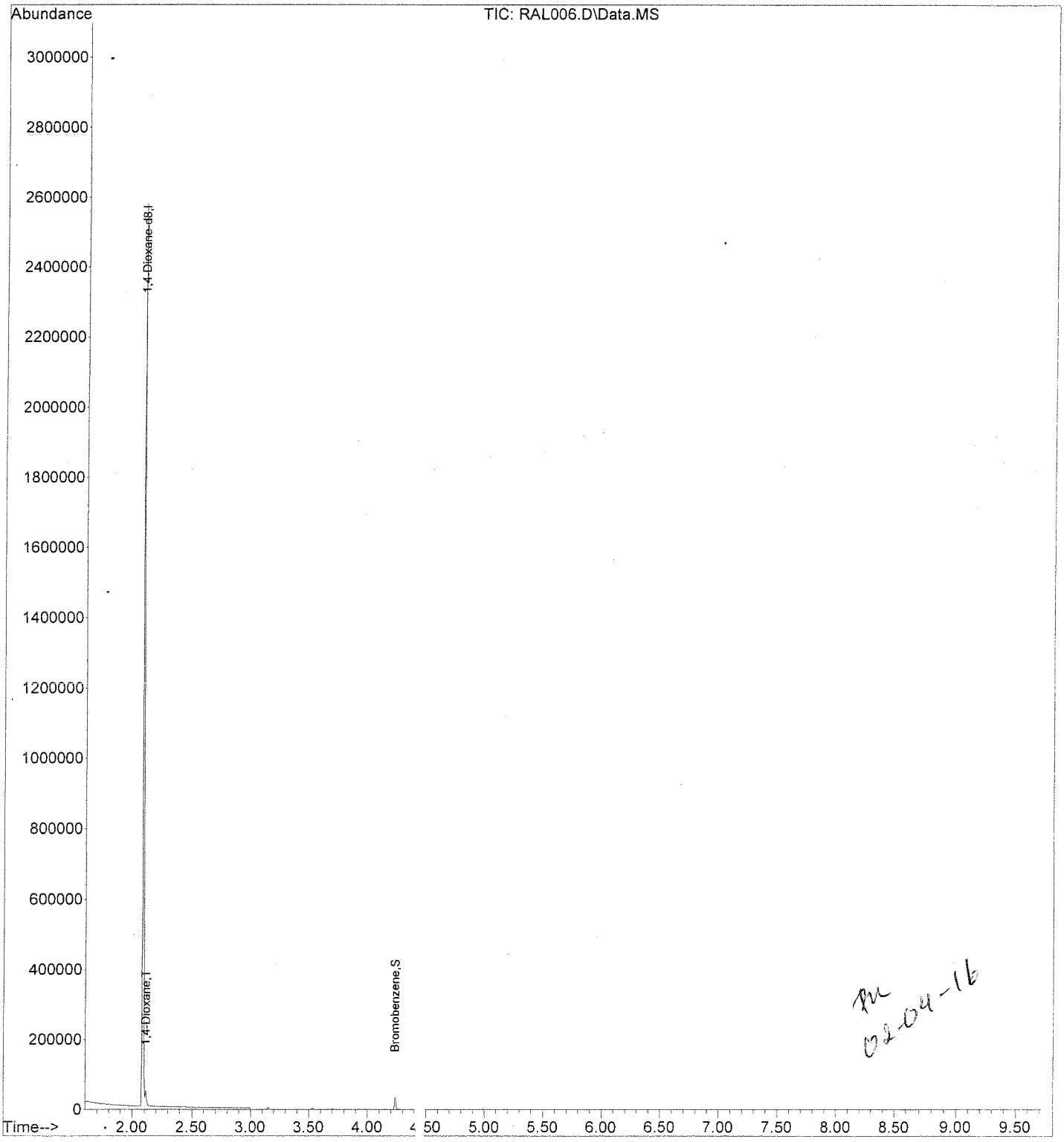
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	946102	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	20642	0.21	ppm	0.00
Spiked Amount 20.000			Recovery =	1.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	17496	0.21	ppm	96

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL006.D Vial: 6
Acq On : 12 Jan 2016 11:31 Operator: KVu
Sample : SVE9A124 0.2PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:22 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



01-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL007.D Vial: 7
Acq On : 12 Jan 2016 11:46 Operator: KVu
Sample : SVE9A125 0.5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

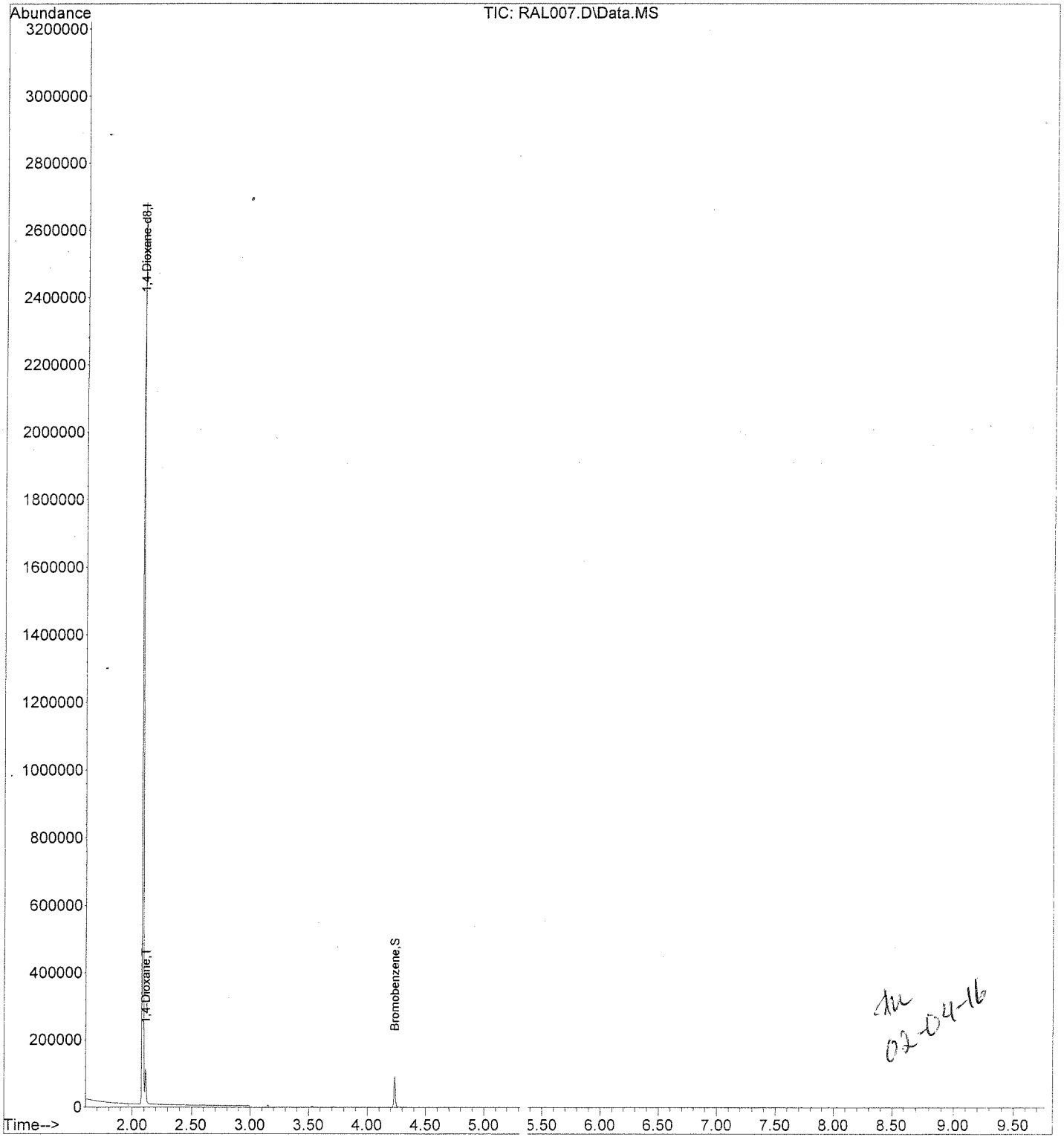
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	981248	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	53069	0.52	ppm	0.00
Spiked Amount 20.000			Recovery =	2.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	44192	0.51	ppm	99

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL007.D Vial: 7
Acq On : 12 Jan 2016 11:46 Operator: KVu
Sample : SVE9A125 0.5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



dw 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL008.D Vial: 8
Acq On : 12 Jan 2016 12:02 Operator: KVu
Sample : SVE9A126 1PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:43 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

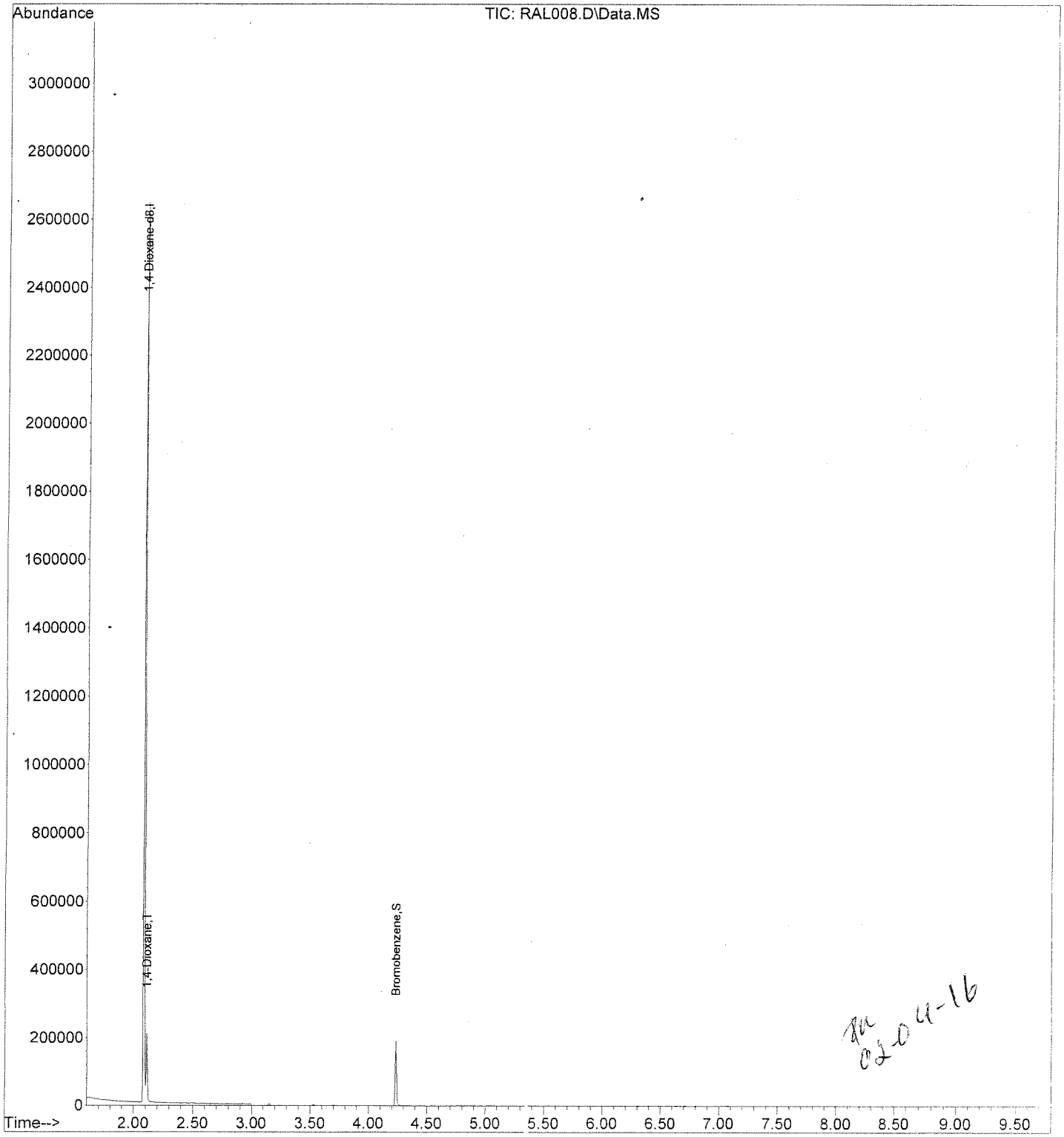
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	969591	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	106409	1.05	ppm	0.00
Spiked Amount 20.000			Recovery =	5.25%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	85828	0.99	ppm	100

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL008.D Vial: 8
Acq On : 12 Jan 2016 12:02 Operator: KVu
Sample : SVE9A126 1PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:43 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

3050

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL009.D Vial: 9
Acq On : 12 Jan 2016 12:18 Operator: KVu
Sample : SVE9A127 5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

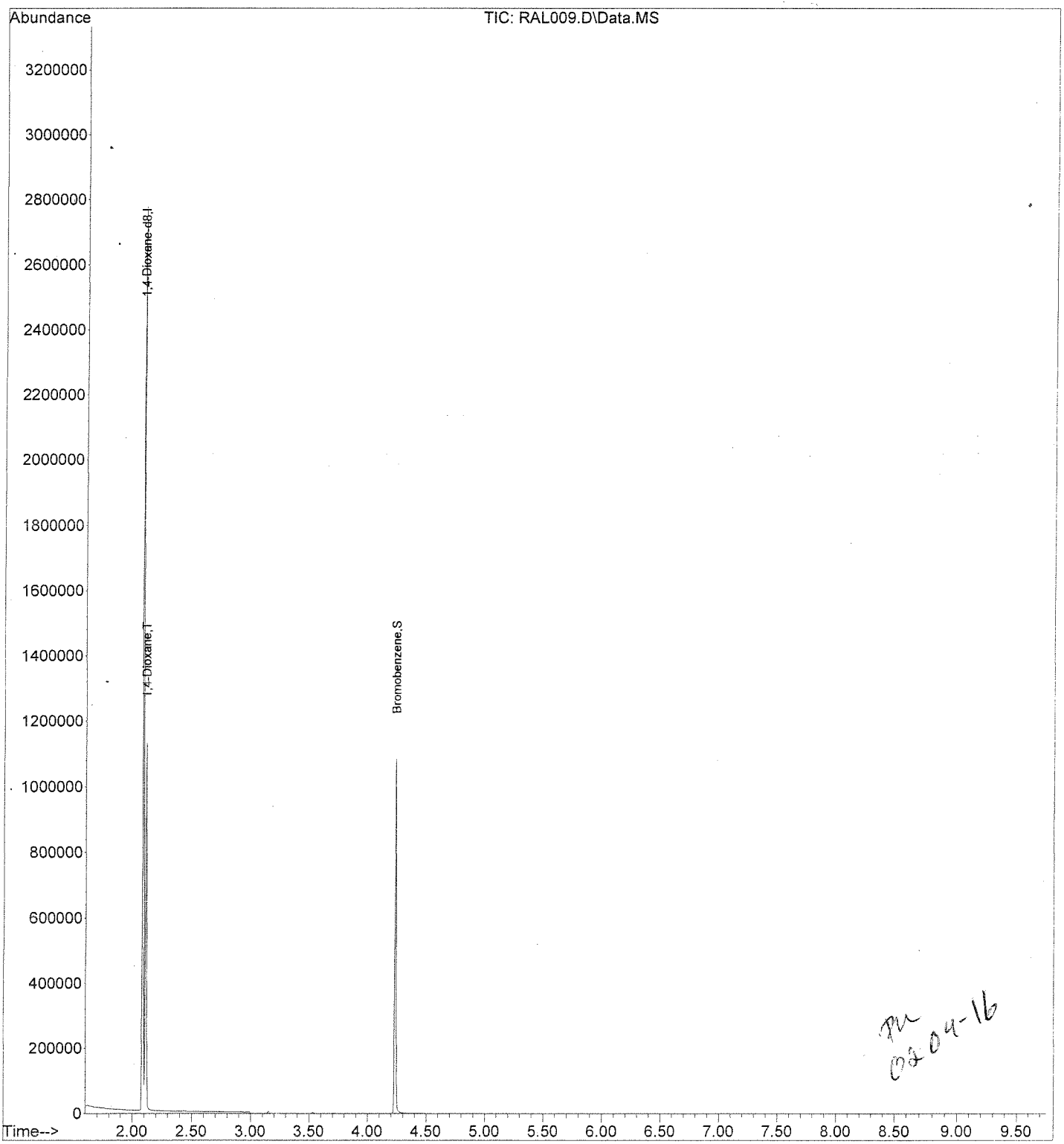
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	986337	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.233	77	570671	5.51	ppm	0.00
Spiked Amount 20.000			Recovery =	27.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	447403	5.09	ppm	100

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL009.D Vial: 9
Acq On : 12 Jan 2016 12:18 Operator: KVu
Sample : SVE9A127 5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



TM 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL010.D Vial: 10
Acq On : 12 Jan 2016 12:33 Operator: KVu
Sample : SVE9A128 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:04 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

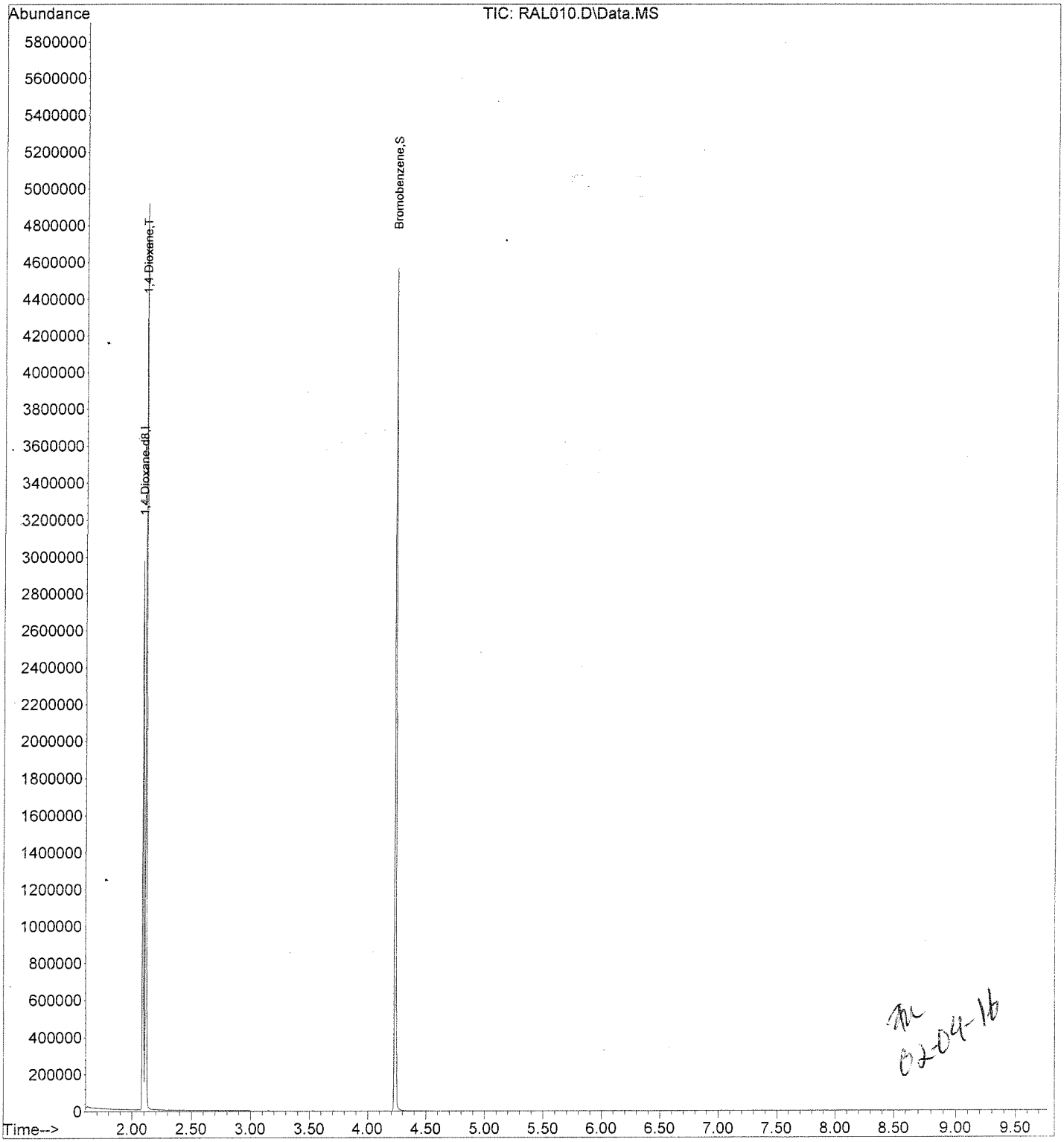
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.089	96	1056008	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	2414237	21.78	ppm	0.00
Spiked Amount 20.000			Recovery =	108.90%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	1884635	20.04	ppm	100

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL010.D Vial: 10
Acq On : 12 Jan 2016 12:33 Operator: KVu
Sample : SVE9A128 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:04 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

30514

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL011.D Vial: 11
Acq On : 12 Jan 2016 12:49 Operator: KVu
Sample : SVE9A129 60PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

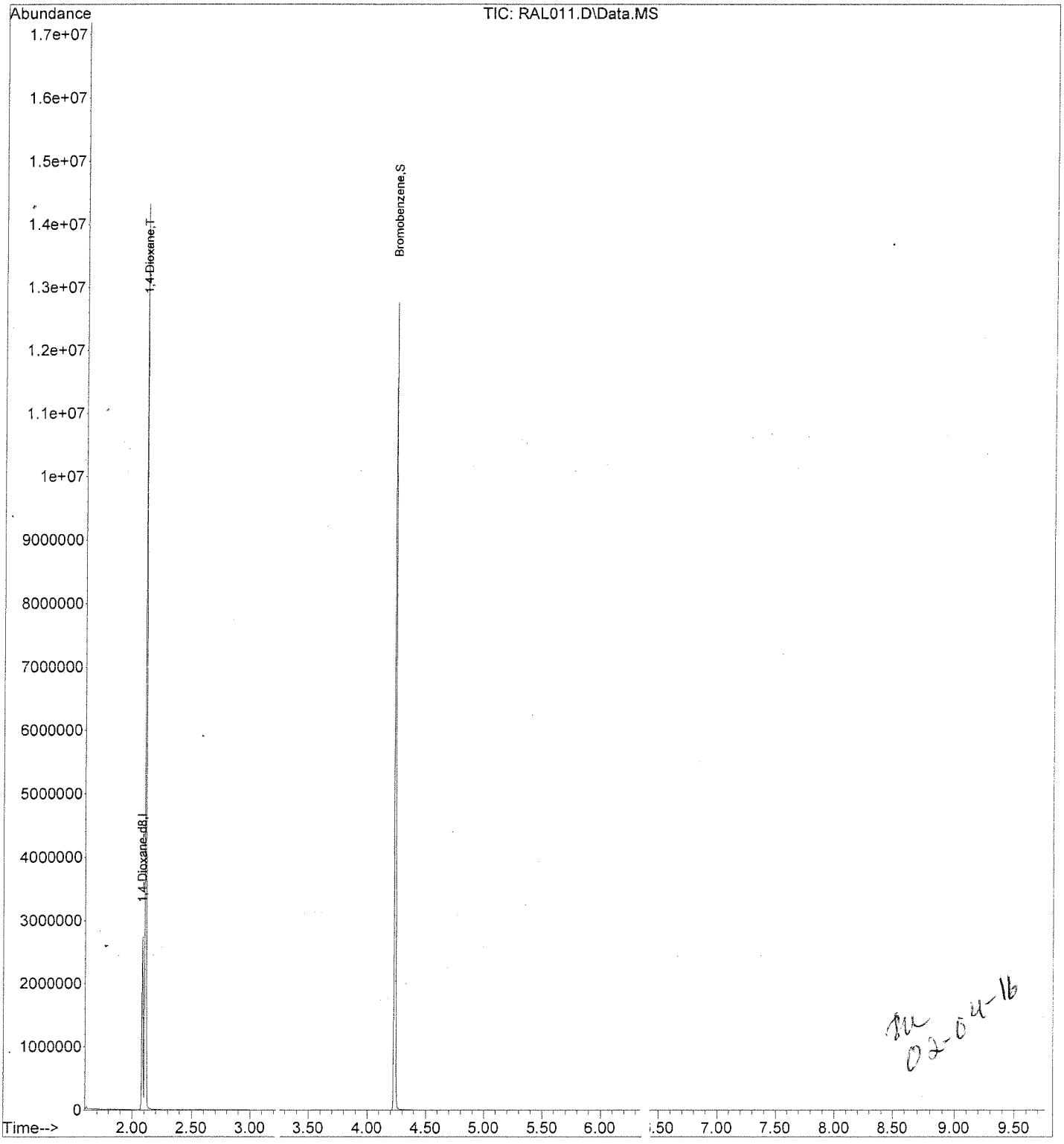
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	999724	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	6880614	65.56	ppm	0.00
Spiked Amount 20.000			Recovery =	327.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	5437581	61.08	ppm	99

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL011.D Vial: 11
Acq On : 12 Jan 2016 12:49 Operator: KVu
Sample : SVE9A129 60PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

3056

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL012.D Vial: 12
Acq On : 12 Jan 2016 13:05 Operator: KVu
Sample : SVE9A1210 100PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:28 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

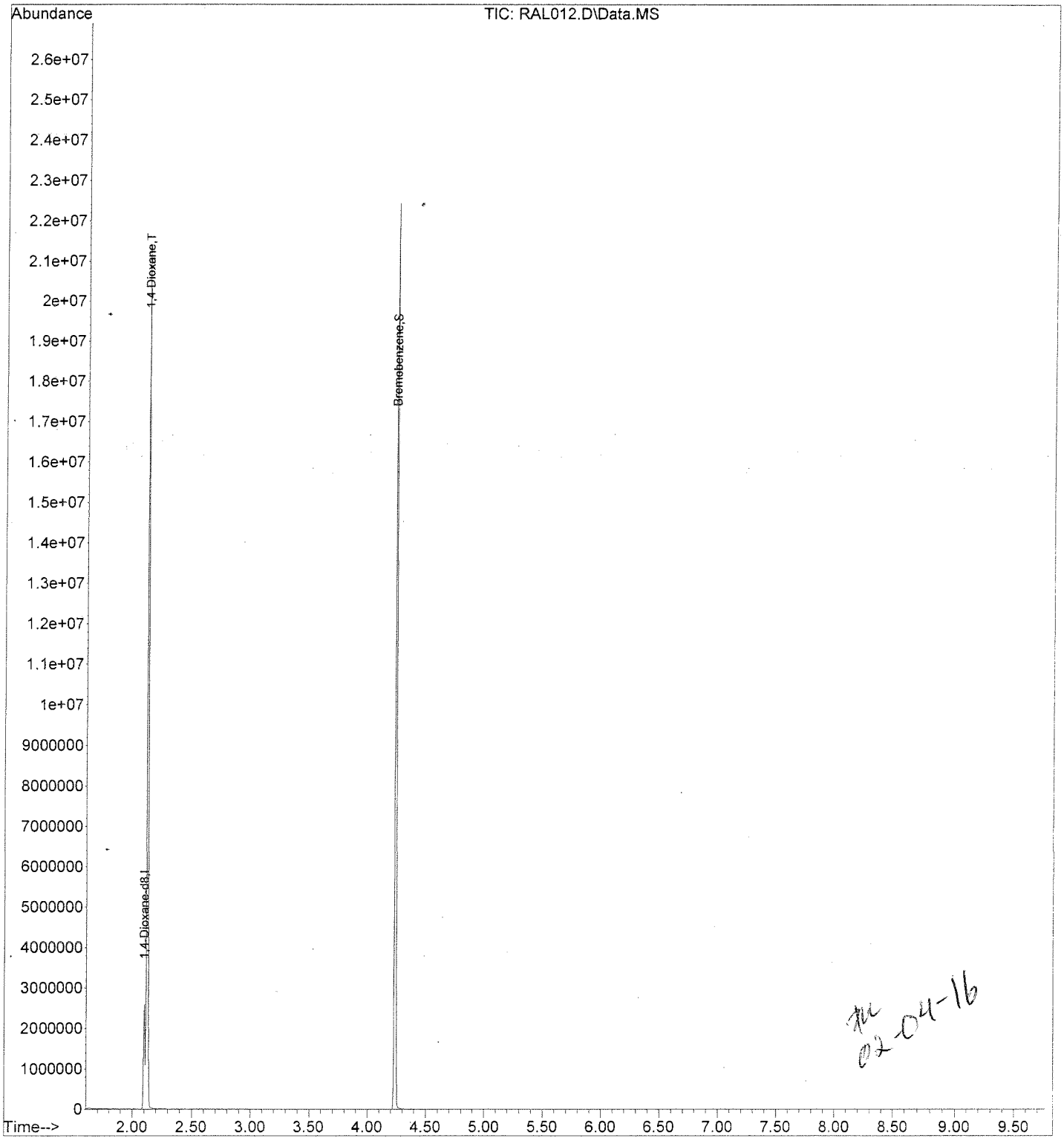
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.099	96	1168668	20.00	ppm	0.01
System Monitoring Compounds						
3) Bromobenzene	4.233	77	9692232	79.00	ppm	0.00
Spiked Amount 20.000			Recovery = 395.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.122	88	8817190	84.73	ppm	# 12

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL012.D Vial: 12
Acq On : 12 Jan 2016 13:05 Operator: KVu
Sample : SVE9A1210 100PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:28 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

3058

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

MC 02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	104	0.00
2	T	1,4-Dioxane	1.781	1.804	-1.3	105	0.00
3	S	Bromobenzene	2.100	2.517	-19.9	115	0.00

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

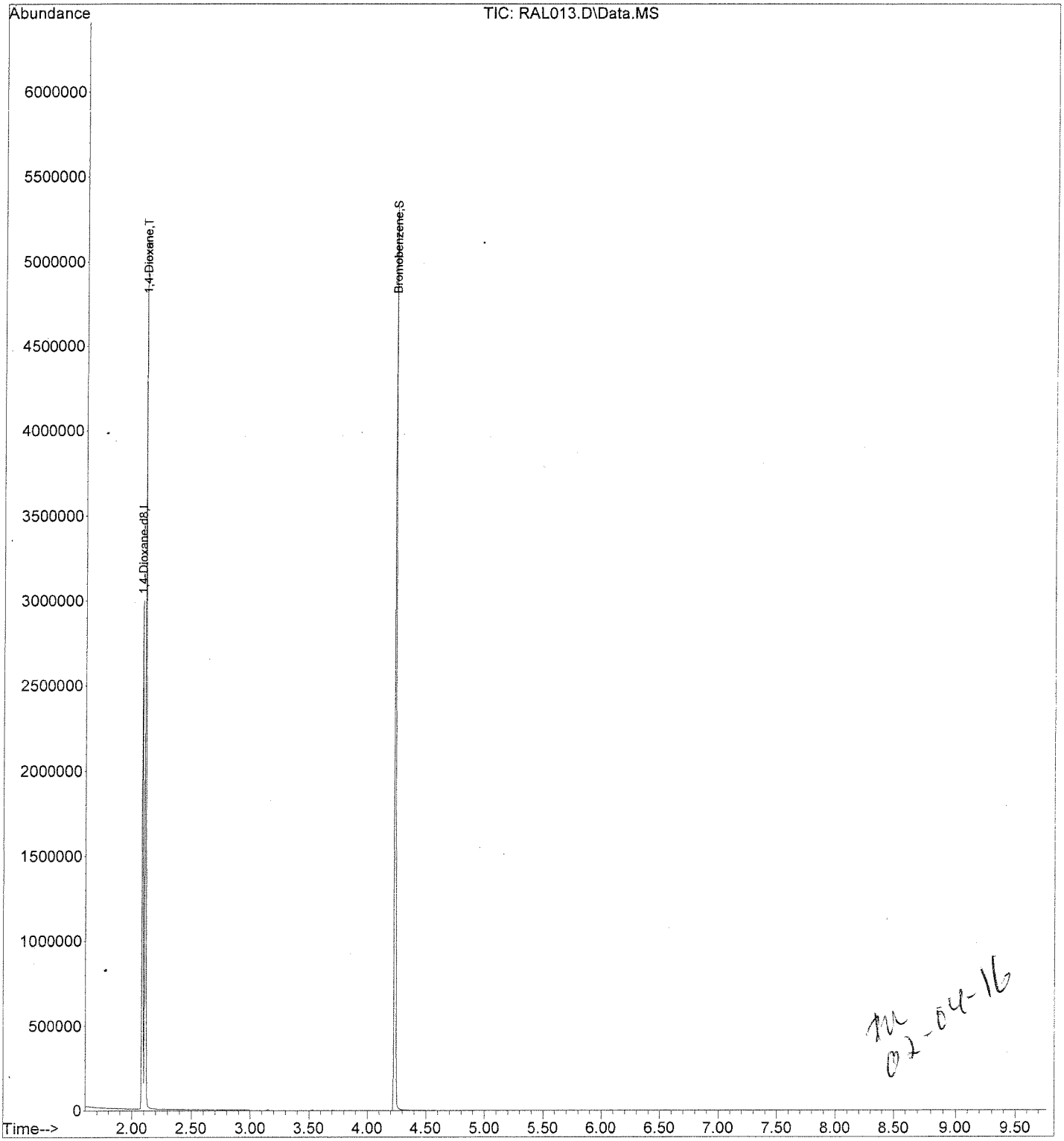
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	1099692	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.233	77	2767423	23.97	ppm	0.00
Spiked Amount 20.000			Recovery =	119.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	1983767	20.26	ppm	99

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



07-04-16

3064

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H117

Lab File ID: RHL041 BFB Injection Date : 08/16/16

Instrument ID: TOE9 BFB Injection Time : 10:34

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.88
75	30.0 - 60.0% of mass 95	43.59
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.41
173	Less than 2.0% of mass 174	0.47(0.5)1
174	50.0- 100.0% of mass 95	87.79
175	5.0 - 9.0% of mass 174	7.07(8.1)1
176	95.0 - 101.0% of mass 174	87.98(100.2)1
177	5.0 - 9.0% of mass 176	5.42(6.2)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	SSTD020	CSVE9A1237	RHL042	08/16/16	10:48
2	MBLK1W	SVH030WB	RHL043	08/16/16	11:15
3	LCS1W	SVH030WL	RHL044	08/16/16	11:26
4	LCD1W	SVH030WC	RHL045	08/16/16	11:42
5	JBERGW0005	H117-01	RHL050	08/16/16	13:01
6	JBERGW0006	H117-02	RHL051	08/16/16	13:17
7	JBERGW9002	H117-03	RHL052	08/16/16	13:33
8	JBERGW0003	H117-04	RHL053	08/16/16	13:48
9	JBERGW0001	H117-05	RHL054	08/16/16	14:04
10	SSTD020	CSVE9A1238	RHL058	08/16/16	15:08

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16H117
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.26
	LOWER LIMIT	528004		1.92
	SAMPLE ID			
1	SSTD020	1096561		2.07
2	MBLK1W	840180		2.07
3	LCS1W	885717		2.07
4	LCD1W	941484		2.08
5	JBERGW0005	990648		2.07
6	JBERGW0006	950179		2.07
7	JBERGW9002	986834		2.08
8	JBERGW0003	900541		2.07
9	JBERGW0001	1019769		2.07
10	SSTD020	1133175		2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL042
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/16/16 10:48

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	1096561	1	1	2.075	2.087	0				
2	1,4-Dioxane	18.986	-5.1	1853800	1.691	1.781	2.102	2.113	5.77				
3	Bromobenzene	20.585	2.9	2369631	2.161	2.100	4.241	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL058
IC File :RAL010

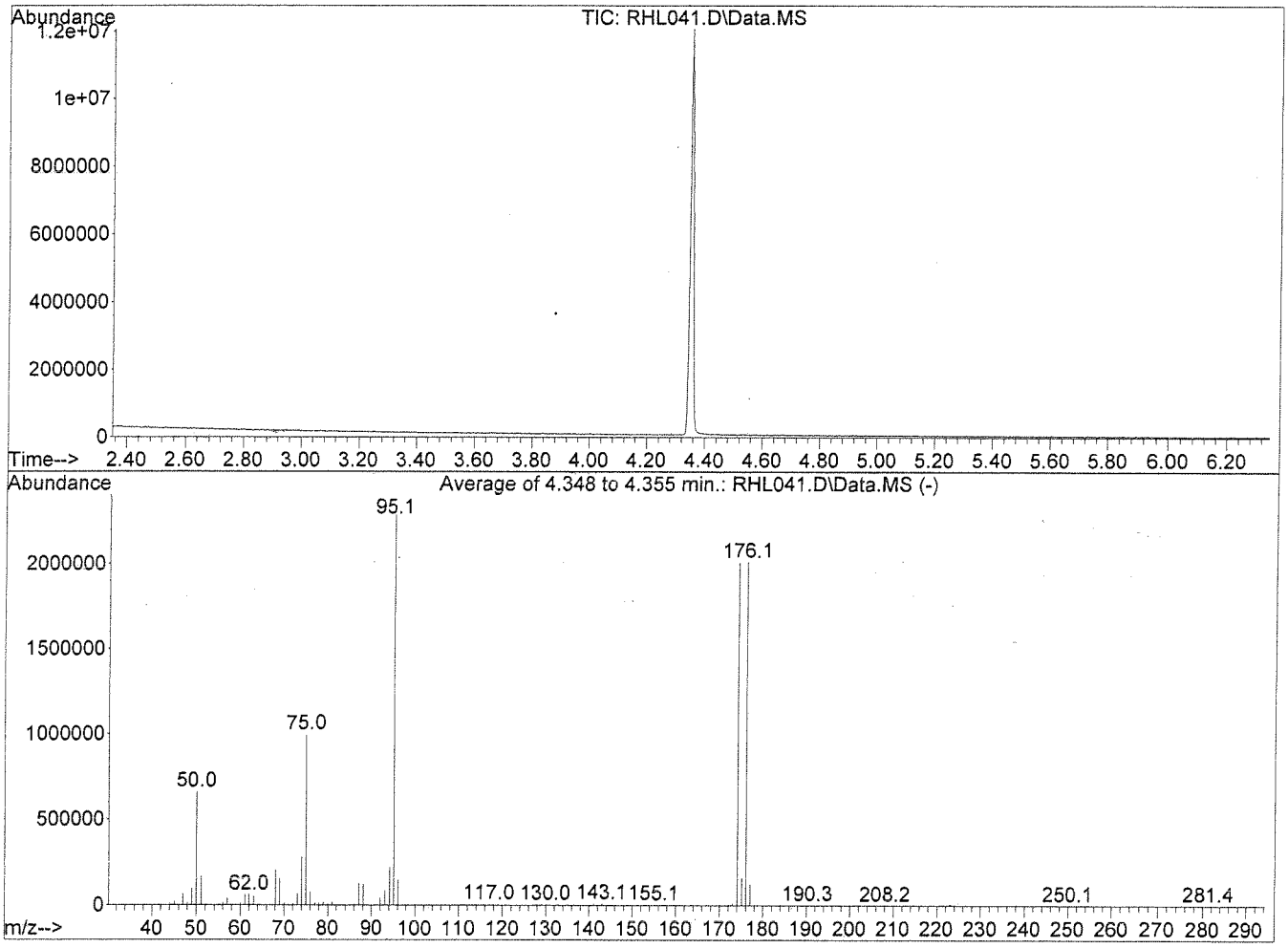
Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/16/16 15:08

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-Dioxane-d8	20.000	0	1133175	1	1	2.075	2.087	0				
2	1,4-Dioxane	18.928	-5.4	1909862	1.685	1.781	2.099	2.113	5.77				
3	Bromobenzene	20.869	4.3	2482562	2.191	2.100	4.241	4.235	10.96				

Data Path : C:\msdchem\1\DATA\16H16\
Data File : RHL041.D
Acq On : 16 Aug 2016 10:34
Operator : DJun
Sample : BFBE9A1237
Misc : E9
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jan 13 13:45:13 2016



AutoFind: Scans 709, 710, 711; Background Corrected with Scan 700

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	28.9	660796	PASS
75	95	30	60	43.6	997477	PASS
95	95	100	100	100.0	2288128	PASS
96	95	5	9	6.4	146771	PASS
173	174	0.00	2	0.5	10720	PASS
174	95	50	100	87.8	2008747	PASS
175	174	5	9	8.1	161771	PASS
176	174	95	101	100.2	2013013	PASS
177	176	5	9	6.2	124067	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H16\RHL042.D Vial: 3
Acq On : 16 Aug 2016 10:48 Operator: DJun
Sample : CSVE9A1237 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 16 11:14:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	-0.01
2	T	1,4-Dioxane	20.000	18.986	5.1	98	-0.01
3	S	Bromobenzene	20.000	20.585	-2.9	98	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H16\RHL042.D Vial: 3
Acq On : 16 Aug 2016 10:48 Operator: DJun
Sample : CSVE9A1237 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 16 11:14:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	104	-0.01
2	T	1,4-Dioxane	1.781	1.691	5.1	98	-0.01
3	S	Bromobenzene	2.100	2.161	-2.9	98	0.00

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

Quantitation Report (QT Reviewed)

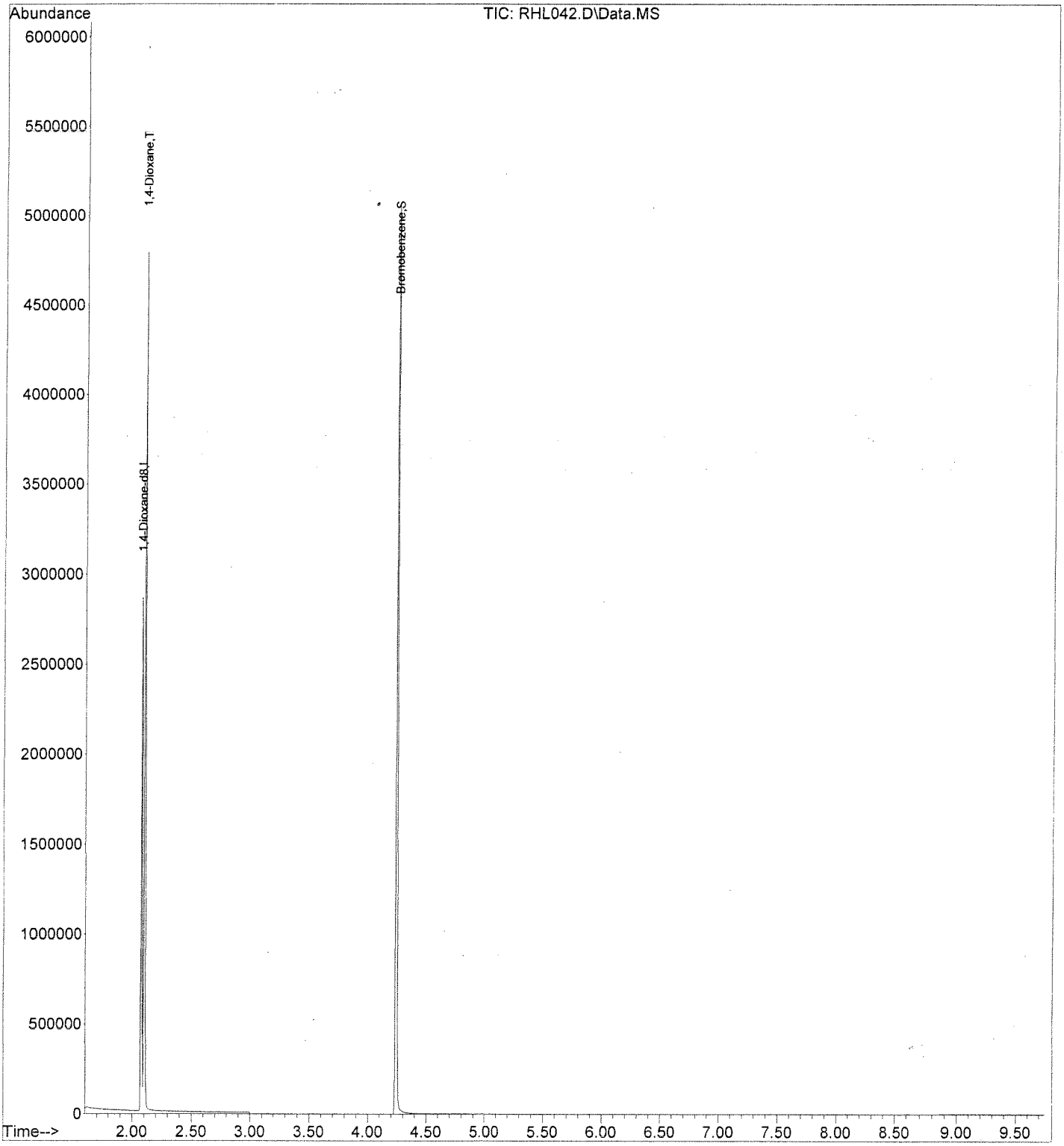
Data File : C:\msdchem\1\DATA\16H16\RHL042.D Vial: 3
Acq On : 16 Aug 2016 10:48 Operator: DJun
Sample : CSVE9A1237 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 16 11:14:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	1096561	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	2369631	20.58	ppm	0.00
Spiked Amount 20.000			Recovery =	102.90%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	1853800	18.99	ppm	# 12

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL042.D Vial: 3
Acq On : 16 Aug 2016 10:48 Operator: DJun
Sample : CSVE9A1237 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 16 11:14:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H16\RHL058.D Vial: 19
Acq On : 16 Aug 2016 15:08 Operator: DJun
Sample : CSVE9A1238 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:47:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	107	-0.01
2	T	1,4-Dioxane	20.000	18.928	5.4	101	-0.01
3	S	Bromobenzene	20.000	20.869	-4.3	103	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H16\RHL058.D Vial: 19
Acq On : 16 Aug 2016 15:08 Operator: DJun
Sample : CSVE9A1238 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:47:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	107	-0.01
2	T	1,4-Dioxane	1.781	1.685	5.4	101	-0.01
3	S	Bromobenzene	2.100	2.191	-4.3	103	0.00

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

Quantitation Report (QT Reviewed)

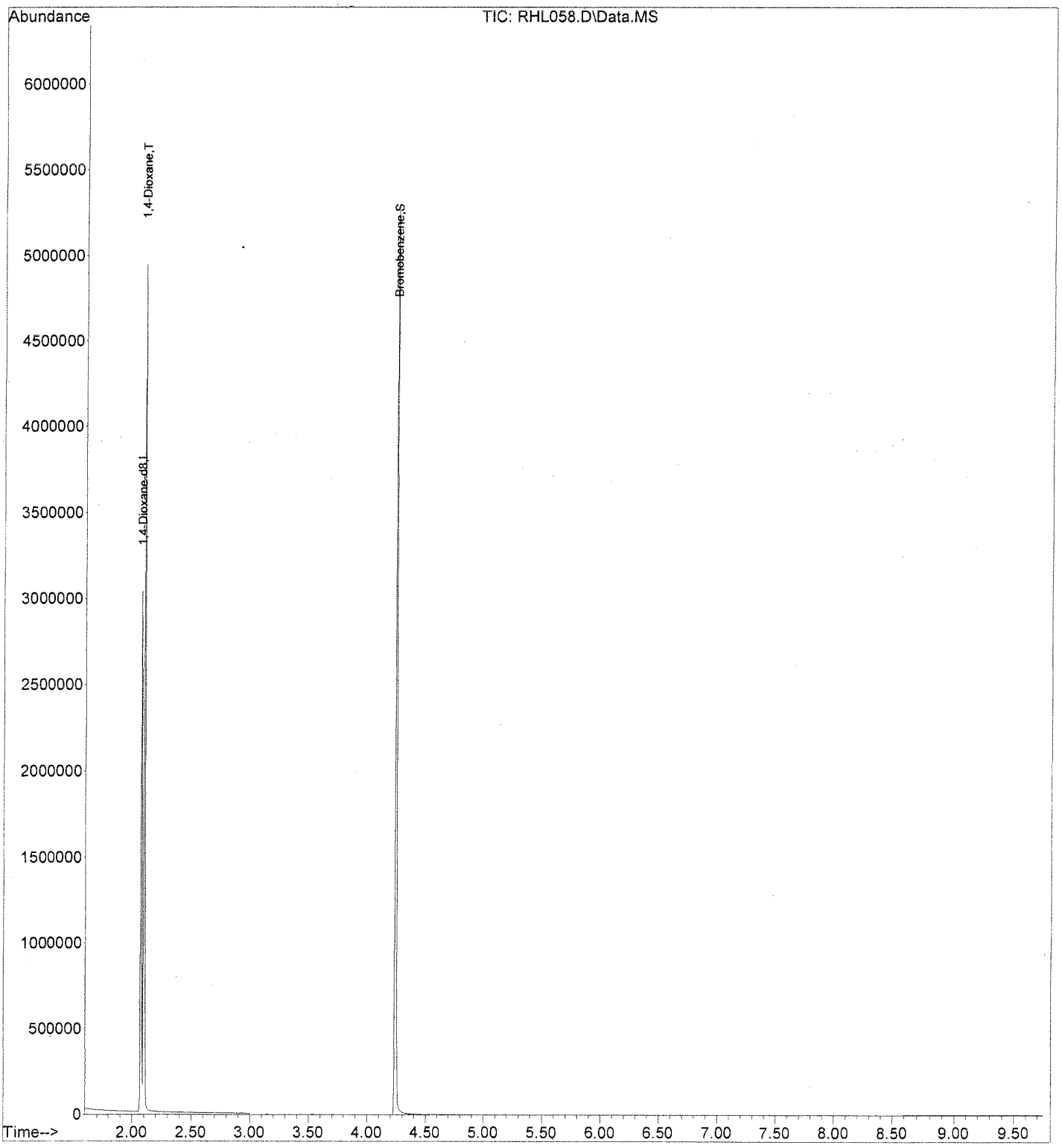
Data File : C:\msdchem\1\DATA\16H16\RHL058.D Vial: 19
Acq On : 16 Aug 2016 15:08 Operator: DJun
Sample : CSVE9A1238 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:47:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	1133175	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	2482562	20.87	ppm	0.00
Spiked Amount 20.000			Recovery =	104.35%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.099	88	1909862	18.93	ppm	# 12

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL058.D Vial: 19
Acq On : 16 Aug 2016 15:08 Operator: DJun
Sample : CSVE9A1238 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:47:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
	2	BFBE9A1201				
	3	SVE9A12 1				0.05 ppm 14 DIOX
	4	2				.075
	5	3				.15
	6	4				.2
	7	5				.5
	8	6				1
	9	7				5
	10	8				20
	11	9				60
	12	10				100
	13	ISVE9A12 1				ICV
SVA001W	14	LOQ-01	1		X	
	15	LOD-01				
SVA002S	16	LOQ-02	1	X		
	17	LOD-02				
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name	ID / Conc. (mg/L)
DFTPP	
INT. STD.	SS2A-13-01-15 / 1000
ICV	SS2C-14-19-01 / 20
DCC / ICAL	SS2C-14-18-03 / .05-100
BENZIDINE	
APP 9	
APP 9 ADD	
BFB	SS2C-14-18-02 / 50
Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

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.

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EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 8/16/16 10:34 End Date/Time: 8/16/16 15:08

ANALYTICAL BATCH: CSVE9A1237

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RHL040	1BE9A1237				
	041	BFBE9A1237				
	042	CSVE9A1237				
SVH030W	043	SVH030WB	1		X	
	044	WL				
	045	WC				
	046	16H116-01M				
	047	-01S				
	048	-01				
	049	-02				
	050	16H117-01				
	051	-02				
	052	-03				
	053	-04				
	054	-05				
	055	16H133-01				
	056	-01M				
	057	-01S				
	058	CSVE9A1238				

DJ 8/16/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV		
DCC	SS2C-14-30-02	20
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-28-03	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16H16

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9/	

Micropipette ID: ☐ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: DJ

Date Disposed: 8/18/16

Disposed By: DJ

This page is checked during data review.

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EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-092
Preparation Batch: SVH030W
Matrix: water
Micropipette ID: 100 uL: PE97C-03 —
Micropipette ID: 1000 uL: PE00-03 —

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1 —
LCS/MS (D10X)	SS2B-12-21-03	1.0 —
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	56056
Na_2SO_4	SWIB-003-13-13
H_2SO_4	3114101
NaOH	SPIB-08-87-03
Silica Sand	—
Silica Gel	—
Reagent Water	SWIA-006-01-22
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9728559 B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVH030WB			5
-WL			5
-WC			5
H116-01			5
-01M			5
-01S			6
-02			6
H117-01			6
-02			6
-03			6
-04			6
-05			1
H133-01			1
-01M			1
-01S			1

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	~~35~~ TW 8/12/16	
3		
4		
5	35	35
6	35	35
8		

Thermometer ID = SVOC-T1

Prepared By: JM — Witnessed By: NAT
Standard Added By: JM — Checked By: ML
Extract Received By: BJ 8/12/16 — Location: SE01 #2A
Disposed By: — Disposed On:

FileID: SVH030W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVH030W01	SVH030WB	1000	ml	8/11/16 11:52	2	1000	2	1	
16SVH030W02	SVH030WL	1000	ml	8/11/16 11:52	2	1000	2	1	1,4 Dioxane
16SVH030W03	SVH030WC	1000	ml	8/11/16 11:52	2	1000	2	1	1,4 Dioxane
16SVH030W04	H116-01	970	ml	8/11/16 11:52	2	1000	2	1.03	orange
16SVH030W05	H116-01M	1000	ml	8/11/16 11:52	2	1000	2	1	orange
16SVH030W06	H116-01S	900	ml	8/11/16 11:52	2	1000	2	1.11	orange
16SVH030W07	H116-02	950	ml	8/11/16 11:52	2	1000	2	1.05	orange
16SVH030W08	H117-01	940	ml	8/11/16 11:52	2	1000	2	1.06	orange
16SVH030W09	H117-02	1030	ml	8/11/16 11:52	2	1000	2	0.97	orange
16SVH030W10	H117-03	910	ml	8/11/16 11:52	2	1000	2	1.1	
16SVH030W11	H117-04	1060	ml	8/11/16 11:52	2	1000	2	0.94	
16SVH030W12	H117-05	910	ml	8/11/16 11:52	2	1000	2	1.1	
16SVH030W13	H133-01	880	ml	8/11/16 11:52	2	1000	2	1.14	light brown
16SVH030W14	H133-01M	960	ml	8/11/16 11:52	2	1000	2	1.04	light brown
16SVH030W15	H133-01S	930	ml	8/11/16 11:52	2	1000	2	1.08	light brown

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 8/11/16 10:15 ☐ pHAdj(≤2) @

Prepared By: JMuert

☑ Extraction Ended @ 8/12/16 4:15 ☑ pHAdj(≥11) @ 8/11/16 10:15

Checked By: ML

Comments: volume entered after extraction started, pH 6-7, no Cl detected

Date 8/12/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H133**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1004
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3075
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 08-30-2016
EMAX Batch No.: 16H133

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/11/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0008	H133-01	08/09/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0008MS	H133-01M	08/09/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0008MSD	H133-01S	08/09/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

16H133

Date: 8/9/2016

Page 1 of 1

COC #: GW-05

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) Megan Matteazzi (Printed Name)

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
					GW			
LF59MW-03	JBERGW0008	NA	8/9/16	1435	GW	X	2	
LF59MW-03	JBERGW0008-MS	NA	8/9/16	1435	GW	X	2	
LF59MW-03	JBERGW0008-MSD	NA	8/9/16	1435	GW	X	2	

Total No. of Containers (this page): 6
Total (entire COC): 6

Relinquished by	Date	Received by	Date
Signature: Megan Matteazzi	8/10/16	Signature	
Printed Name: HGL	Time: 1030	Printed Name	Time
Company		Company	
Relinquished by	Date	Received by	Date
Signature		Signature: Miguel Limon	8/11/16
Printed Name	Time	Printed Name: EMAX	Time: 9:10
Company		Company	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

Total # of coolers: 1
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

Temp = 2.9°C

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16H133
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7837 9322 2870	Recipient Miguel
☐ EMAX Courier ☐ Client Delivery		Date 8/11/16 Time 9:10

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 2.9 °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* 130538506 SF calibr 8/16	*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

c 8/11/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

MB 8/11

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 8/11/16 8/11/16

SRF Date 8/11/16

PM Date 8/11/16

ORIGIN ID:GSTA (330) 840-9449
JEFFERY DEVAUGHN

581 BOSTON MILLS RD STE 600

HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 10AUG16
ACTWGT: 48.50 LB
CAD: 6990279/SSF01704
DIMS: 26x14x13 IN

BILL THIRD PARTY

Part # 156297-435 RITZ 10/15

TO **EMAX LABORATORY**
ATTN SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J16201080701090u

TRK# 0201 **7837 9322 2870**

THU - 11 AUG 10:30A
PRIORITY OVERNIGHT

XH HHRA

DSR
90501
CA-US **LAX**

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H133

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H133

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

One (1) water sample was received on 08/11/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM 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 out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RHL042) and CCV(Datafile ID:RHL058). 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. SVH030WB - 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. SVH030WL/SVH030WC was 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) set of MS/MSD was analyzed. 1,4-Dioxane was within MS QC limits in H133-01M/S. Refer to Matrix QC summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
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.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING
SDG NO. : 16H133
Instrument ID : T-QE9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVH030WB	1	NA	08/16/1611:15	08/11/1610:15	RHL043	RAL010	SVH030W	Method Blank
LCS1W	SVH030WL	1	NA	08/16/1611:26	08/11/1610:15	RHL044	RAL010	SVH030W	Lab Control Sample (LCS)
LCD1W	SVH030WC	1	NA	08/16/1611:42	08/11/1610:15	RHL045	RAL010	SVH030W	LCS Duplicate
JBERGW0008	H133-01	1.14	NA	08/16/1614:20	08/11/1610:15	RHL055	RAL010	SVH030W	Field Sample
JBERGW0008MS	H133-01M	1.04	NA	08/16/1614:36	08/11/1610:15	RHL056	RAL010	SVH030W	Matrix Spike Sample (MS)
JBERGW0008MSD	H133-01S	1.08	NA	08/16/1614:52	08/11/1610:15	RHL057	RAL010	SVH030W	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

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SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 08/09/16
Project : JBER GW SAMPLING	Date Received: 08/11/16
Batch No. : 16H133	Date Extracted: 08/11/16 10:15
Sample ID: JBERGW0008	Date Analyzed: 08/16/16 14:20
Lab Samp ID: H133-01	Dilution Factor: 1.14
Lab File ID: RHL055	Matrix : WATER
Ext Btch ID: SVH030W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.57	0.15	0.28

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	40.1	45.60	88.0	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

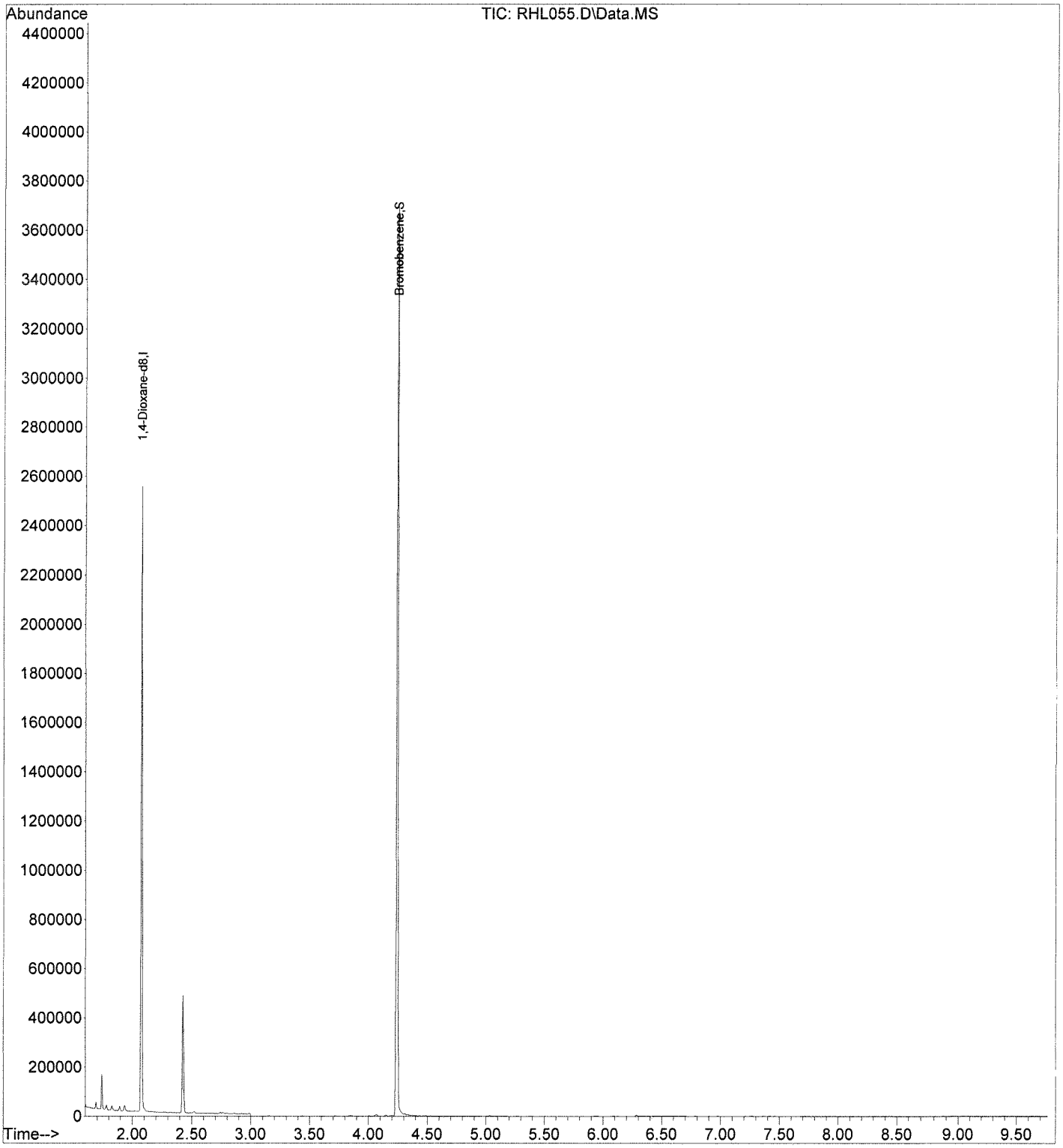
Data File : C:\msdchem\1\DATA\16H16\RHL055.D Vial: 16
Acq On : 16 Aug 2016 14:20 Operator: DJun
Sample : 16H133-01 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:07:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	938091	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1734114	17.61	ppm	0.00
Spiked Amount 20.000			Recovery =	88.05%		
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL055.D Vial: 16
Acq On : 16 Aug 2016 14:20 Operator: DJun
Sample : 16H133-01 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:07:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	08/11/16
Batch No.	: 16H133	Date Extracted:	08/11/16 10:15
Sample ID:	MBLK1W	Date Analyzed:	08/16/16 11:15
Lab Samp ID:	SVH030WB	Dilution Factor:	1
Lab File ID:	RHL043	Matrix :	WATER
Ext Btch ID:	SVH030W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	40.4	40.00	101	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H133
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVH030WB	SVH030WL	SVH030WC		
LAB FILE ID:	RHL043	RHL044	RHL045		
DATE EXTRACTED:	08/11/1610:15	08/11/1610:15	08/11/1610:15	DATE COLLECTED:	NA
DATE ANALYZED:	08/16/1611:15	08/16/1611:26	08/16/1611:42	DATE RECEIVED:	08/11/16
PREP. BATCH:	SVH030W	SVH030W	SVH030W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	28.1	70	40.0	30.3	76	8	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	36.1	90	40.0	38.6	97	30-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H133
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1.14	1.04	1.08		
SAMPLE ID:	JBERGW0008				
LAB SAMP ID:	H133-01	H133-01M	H133-01S		
LAB FILE ID:	RHL055	RHL056	RHL057		
DATE EXTRACTED:	08/11/1610:15	08/11/1610:15	08/11/1610:15	DATE COLLECTED:	08/09/16
DATE ANALYZED:	08/16/1614:20	08/16/1614:36	08/16/1614:52	DATE RECEIVED:	08/11/16
PREP. BATCH:	SVH030W	SVH030W	SVH030W		
CALIB. REF:	RAL010	RAL010	RAL010		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,4-Dioxane	ND	41.6	29.0	70	43.2	27.5	64	9	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
Bromobenzene	41.6	42.3	102	43.2	38.9	90	30-130

QC DATA

Quantitation Report (QT Reviewed)

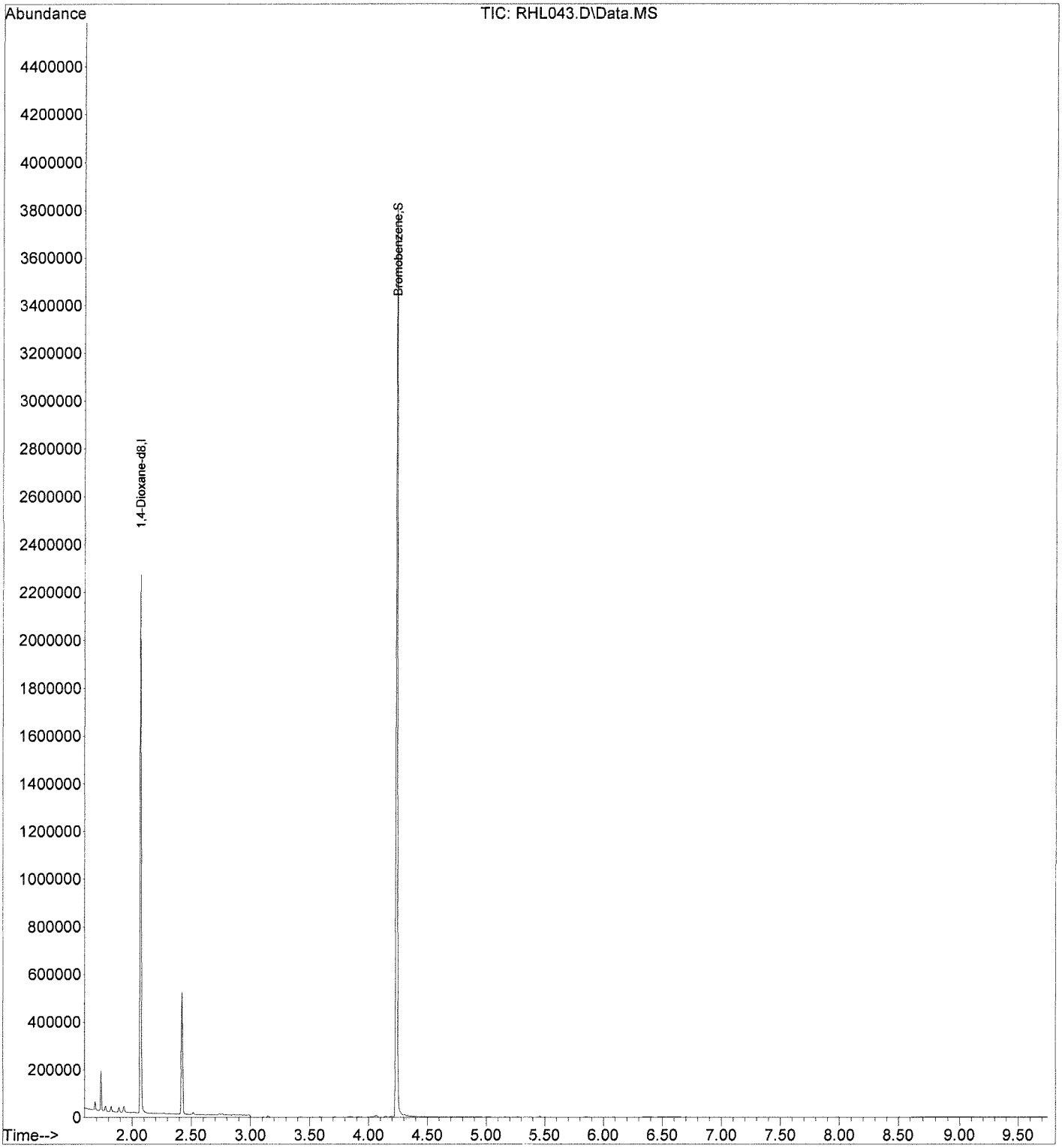
Data File : C:\msdchem\1\DATA\16H16\RHL043.D Vial: 4
Acq On : 16 Aug 2016 11:15 Operator: DJun
Sample : SVH030WB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:48:56 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.072	96	840180	20.00	ppm	-0.02
System Monitoring Compounds						
3) Bromobenzene	4.236	77	1779509	20.18	ppm	0.00
Spiked Amount 20.000			Recovery =	100.90%		
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL043.D Vial: 4
Acq On : 16 Aug 2016 11:15 Operator: DJun
Sample : SVH030WB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:48:56 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

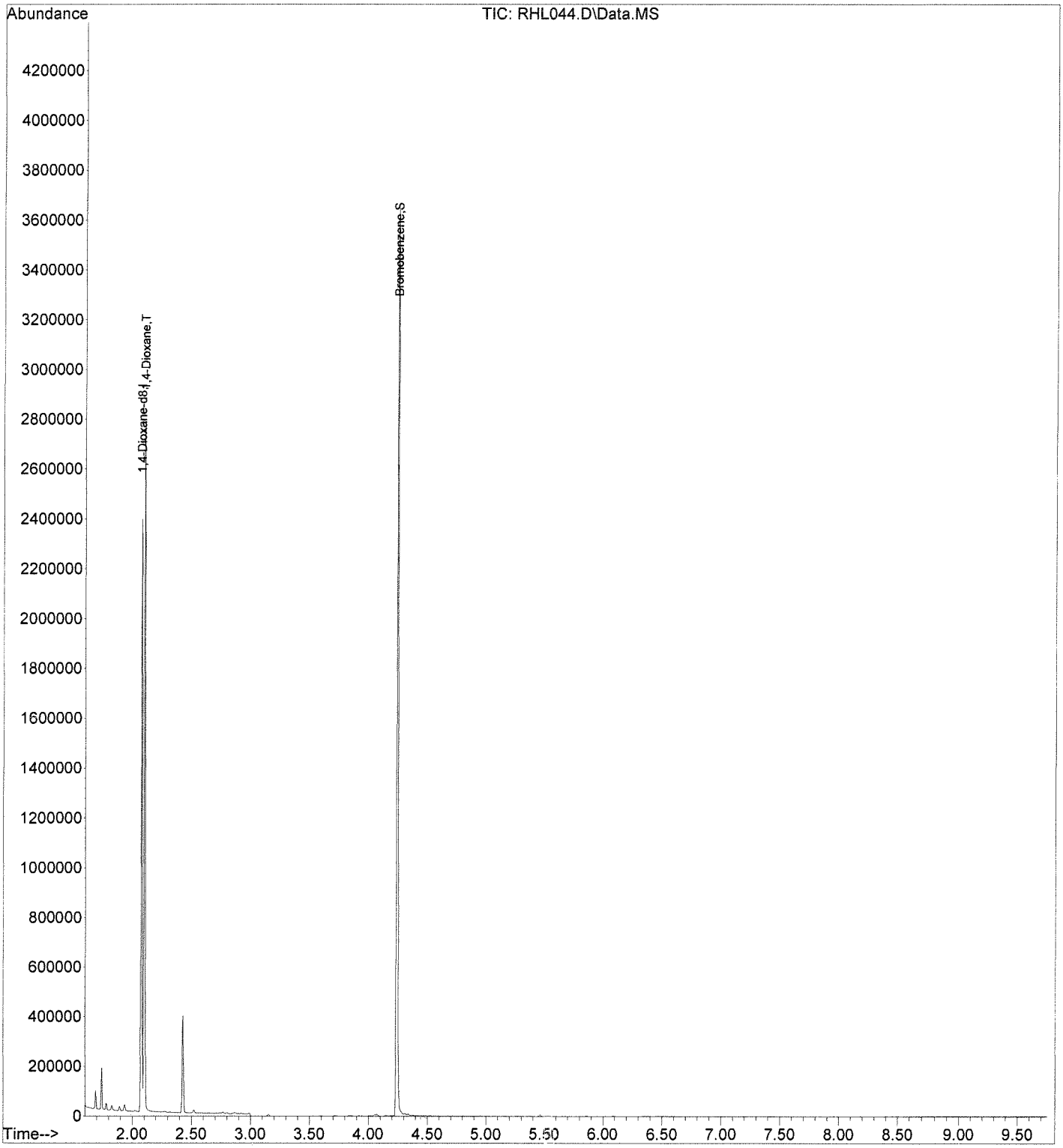
Data File : C:\msdchem\1\DATA\16H16\RHL044.D Vial: 5
Acq On : 16 Aug 2016 11:26 Operator: DJun
Sample : SVH030WL Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:49:12 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	885717	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1676620	18.03	ppm	0.00
Spiked Amount 20.000			Recovery = 90.15%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.099	88	1106175	14.03	ppm	99

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL044.D Vial: 5
Acq On : 16 Aug 2016 11:26 Operator: DJun
Sample : SVH030WL Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:49:12 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL045.D Vial: 6
Acq On : 16 Aug 2016 11:42 Operator: DJun
Sample : SVH030WC Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:49:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

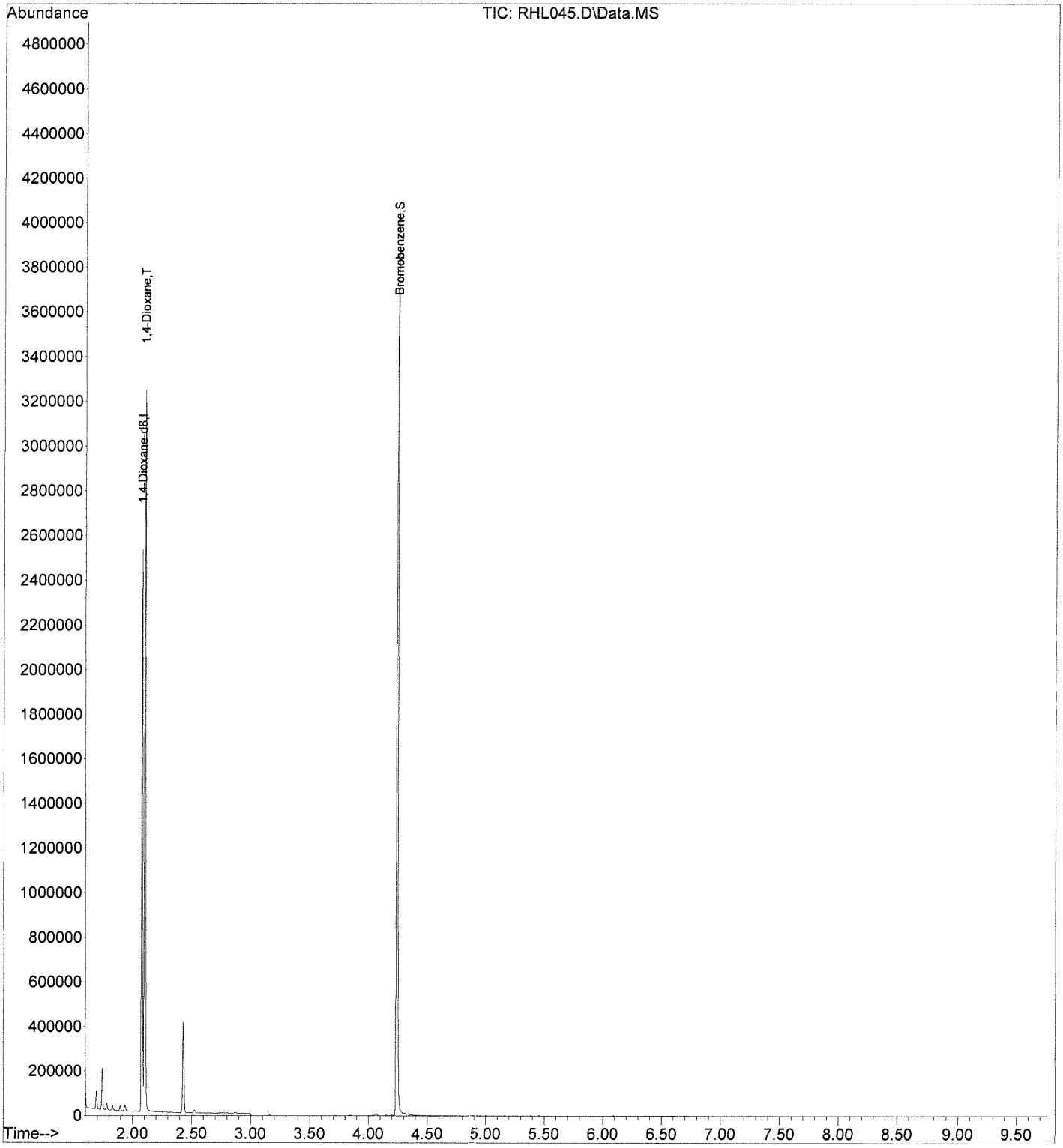
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.077	96	941484	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.243	77	1908306	19.31	ppm	0.00
Spiked Amount 20.000			Recovery =	96.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	1270730	15.16	ppm	# 12

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

3016

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL045.D Vial: 6
Acq On : 16 Aug 2016 11:42 Operator: DJun
Sample : SVH030WC Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:49:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

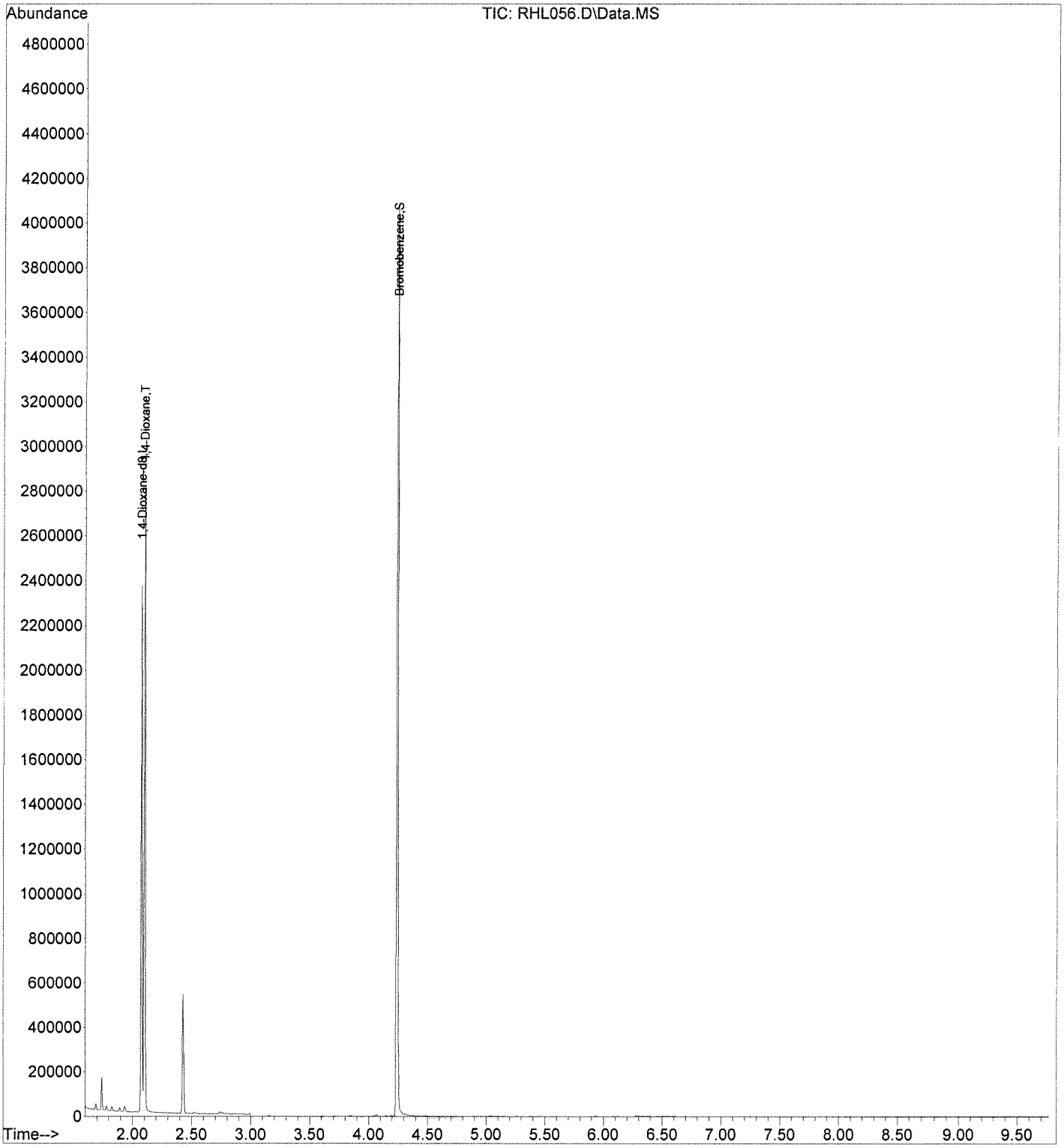
Data File : C:\msdchem\1\DATA\16H16\RHL056.D Vial: 17
Acq On : 16 Aug 2016 14:36 Operator: DJun
Sample : 16H133-01M Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:07:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	889980	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	1901463	20.35	ppm	0.00
Spiked Amount 20.000			Recovery =	101.75%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.099	88	1103858	13.93	ppm	100

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL056.D Vial: 17
Acq On : 16 Aug 2016 14:36 Operator: DJun
Sample : 16H133-01M Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:07:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

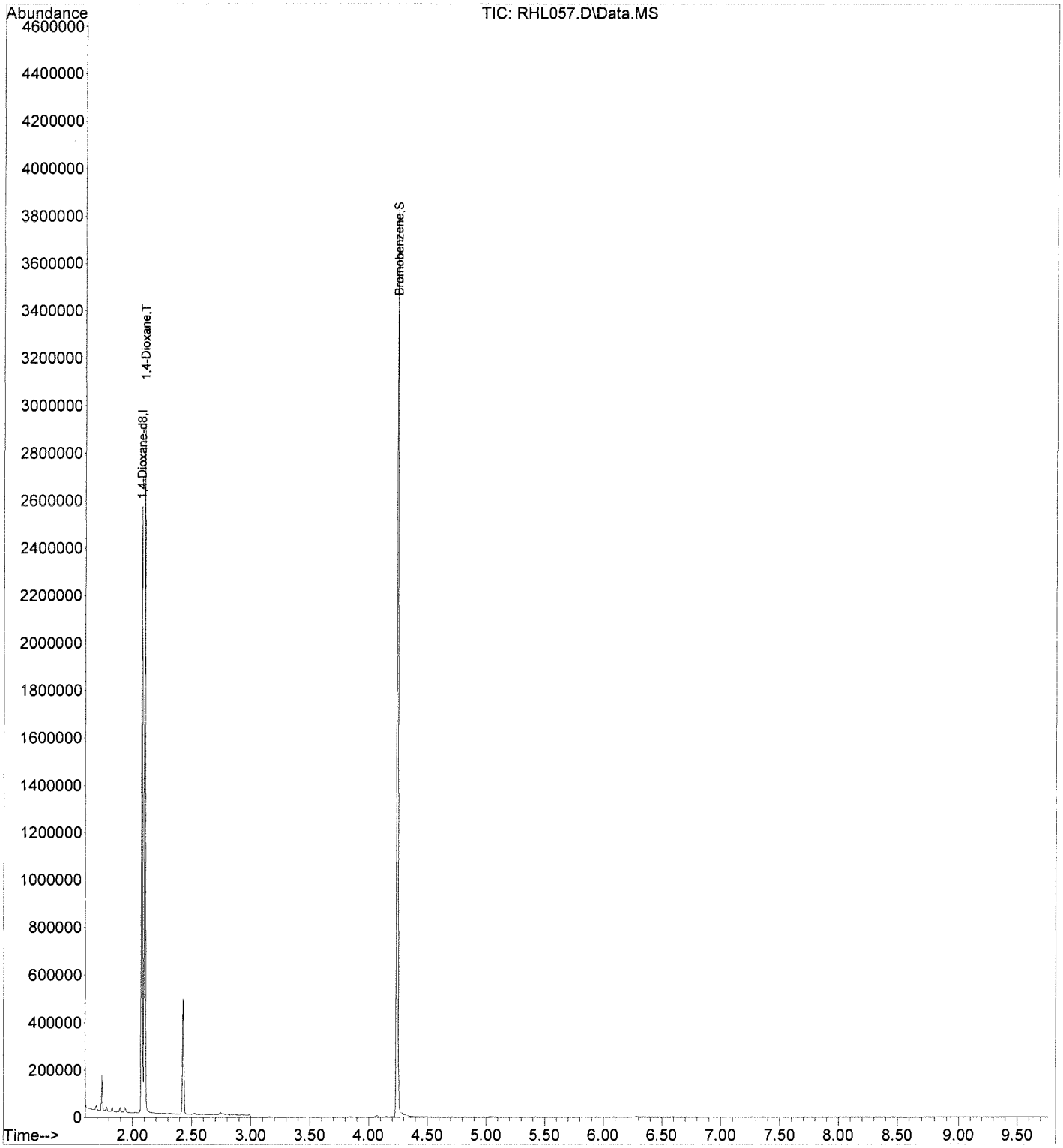
Data File : C:\msdchem\1\DATA\16H16\RHL057.D Vial: 18
Acq On : 16 Aug 2016 14:52 Operator: DJun
Sample : 16H133-01S Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:07:33 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	976038	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.242	77	1846863	18.02	ppm	0.00
Spiked Amount 20.000			Recovery = 90.10%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	1106189	12.73	ppm	100

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL057.D Vial: 18
Acq On : 16 Aug 2016 14:52 Operator: DJun
Sample : 16H133-01S Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 09:07:33 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H133
Lab File ID: RAL002 BFB Injection Date : 01/12/16
Instrument ID: TOE9 BFB Injection Time : 10:33
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

07-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVE9A12.M
Title : SEMIVOLATILES - SIM
Last Update : Wed Jan 13 13:39:02 2016
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	2.089	1.000	A	1	A	B
2	T	1,4-Dioxane	88	2.113	1.011	A	1	A	B
3	S	Bromobenzene	77	4.235	2.027	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

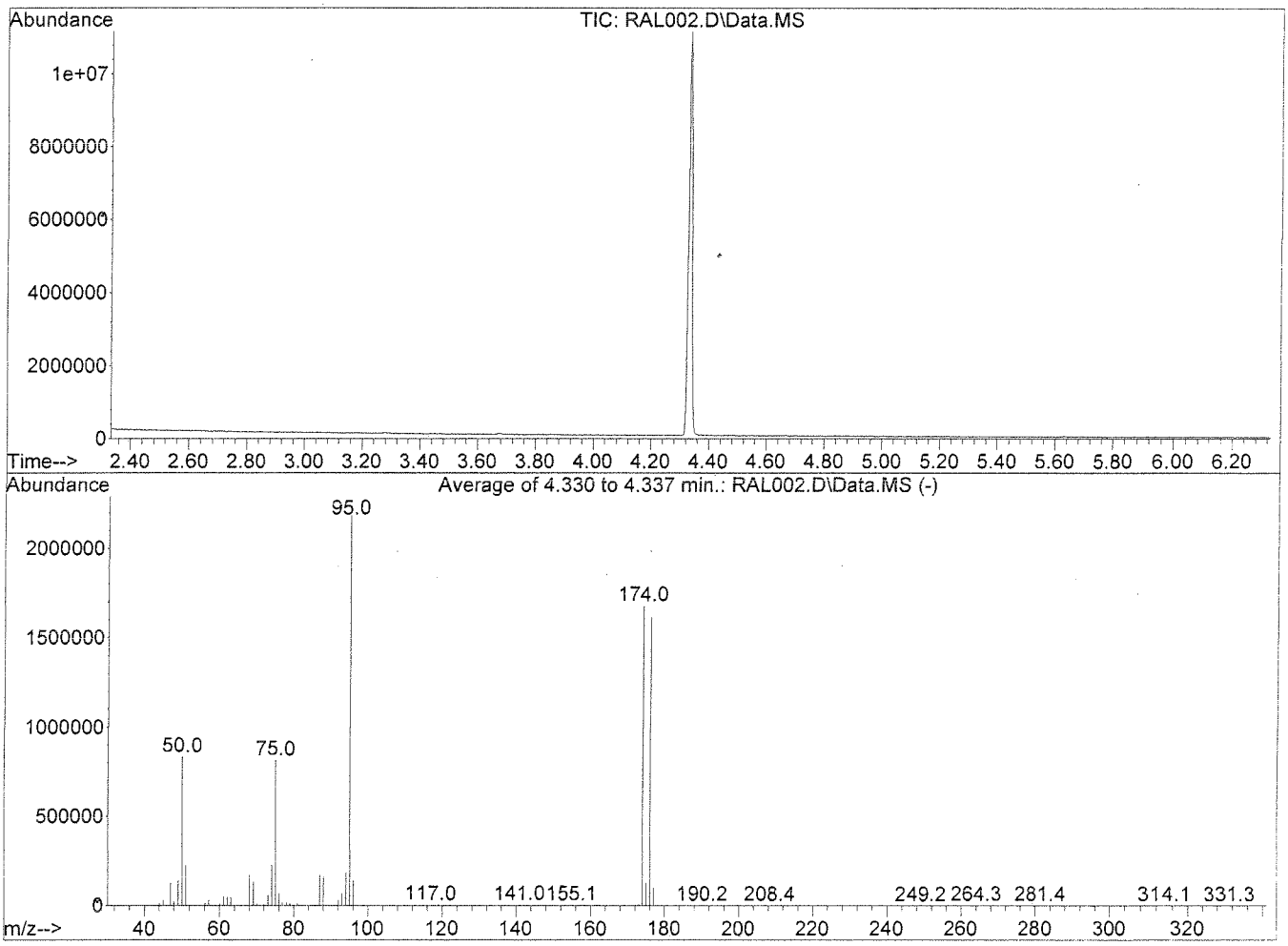
SVE9A12.M Wed Jan 13 13:39:20 2016 E9

02-04-16

Data Path : C:\msdchem\1\DATA\16A12\
Data File : RAL002.D
Acq On : 12 Jan 2016 10:33
Operator : KVu
Sample : BFBE9A1201
Misc : E9
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jan 13 13:45:13 2016



AutoFind: Scans 704, 705, 706; Background Corrected with Scan 696

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	38.1	832682	PASS
75	95	30	60	37.4	815808	PASS
95	95	100	100	100.0	2183851	PASS
96	95	5	9	6.5	140911	PASS
173	174	0.00	2	0.5	8598	PASS
174	95	50	100	76.8	1677141	PASS
175	174	5	9	7.5	125328	PASS
176	174	95	101	96.3	1614432	PASS
177	176	5	9	6.1	99275	PASS

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL003.D Vial: 3
Acq On : 12 Jan 2016 10:46 Operator: KVu
Sample : SVE9A121 0.05PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

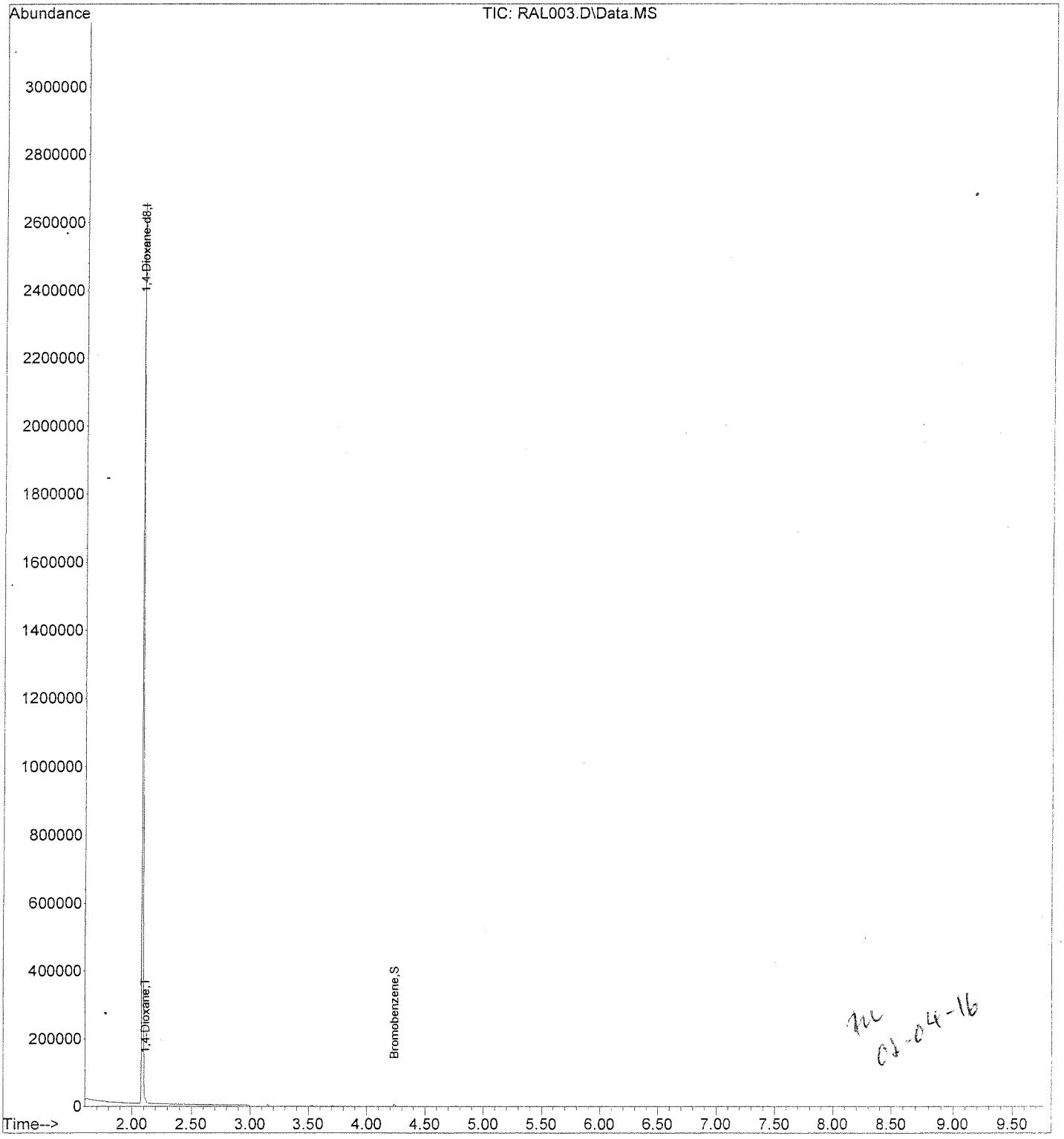
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	945510	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	4201	0.04	ppm	0.00
Spiked Amount 20.000			Recovery =	0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	4476	0.05	ppm	75

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

07-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL003.D Vial: 3
Acq On : 12 Jan 2016 10:46 Operator: KVu
Sample : SVE9A121 0.05PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



JH 01-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL004.D Vial: 4
Acq On : 12 Jan 2016 11:00 Operator: KVu
Sample : SVE9A122 0.075PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:51 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

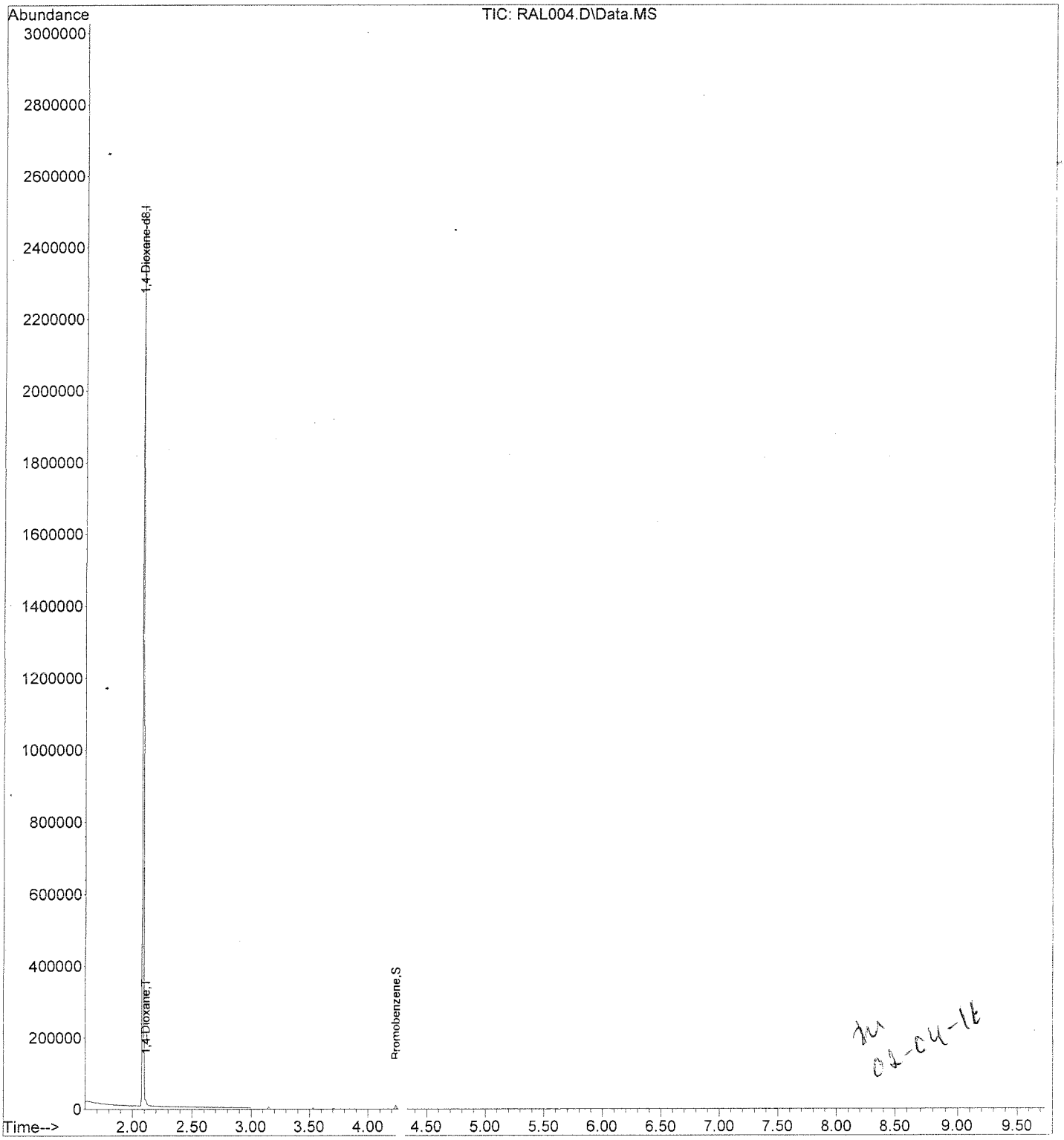
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	919219	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	6643	0.07	ppm	0.00
Spiked Amount 20.000			Recovery =	0.35%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	6082	0.07	ppm	87

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL004.D Vial: 4
Acq On : 12 Jan 2016 11:00 Operator: KVu
Sample : SVE9A122 0.075PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:51 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



01-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL005.D Vial: 5
Acq On : 12 Jan 2016 11:15 Operator: KVu
Sample : SVE9A123 0.15PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:11 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

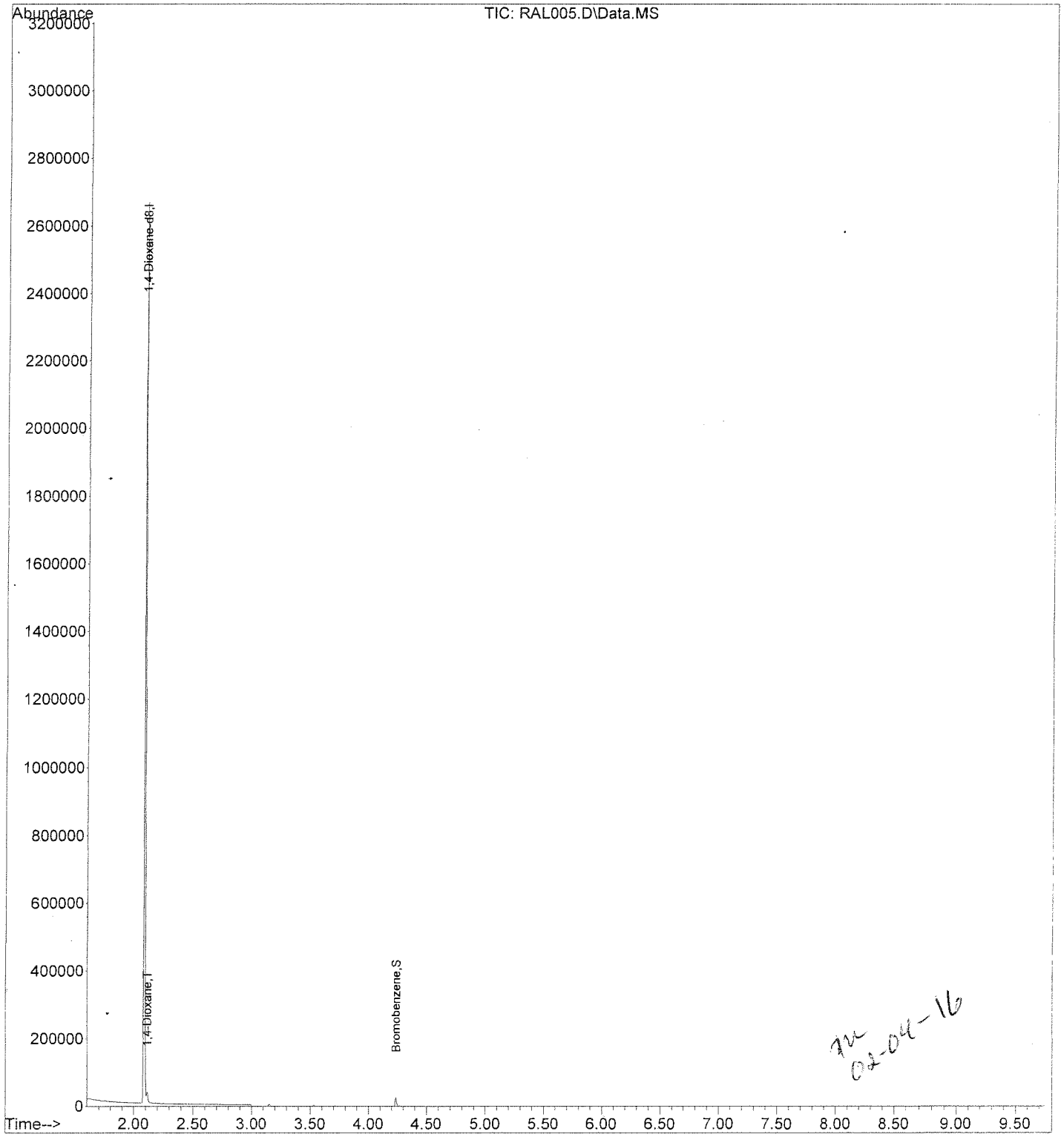
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	946724	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	15607	0.16	ppm	0.00
Spiked Amount 20.000			Recovery =	0.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	12840	0.15	ppm	94

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL005.D Vial: 5
Acq On : 12 Jan 2016 11:15 Operator: KVu
Sample : SVE9A123 0.15PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:11 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



JW 02-04-16

3035

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL006.D Vial: 6
Acq On : 12 Jan 2016 11:31 Operator: KVu
Sample : SVE9A124 0.2PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:22 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

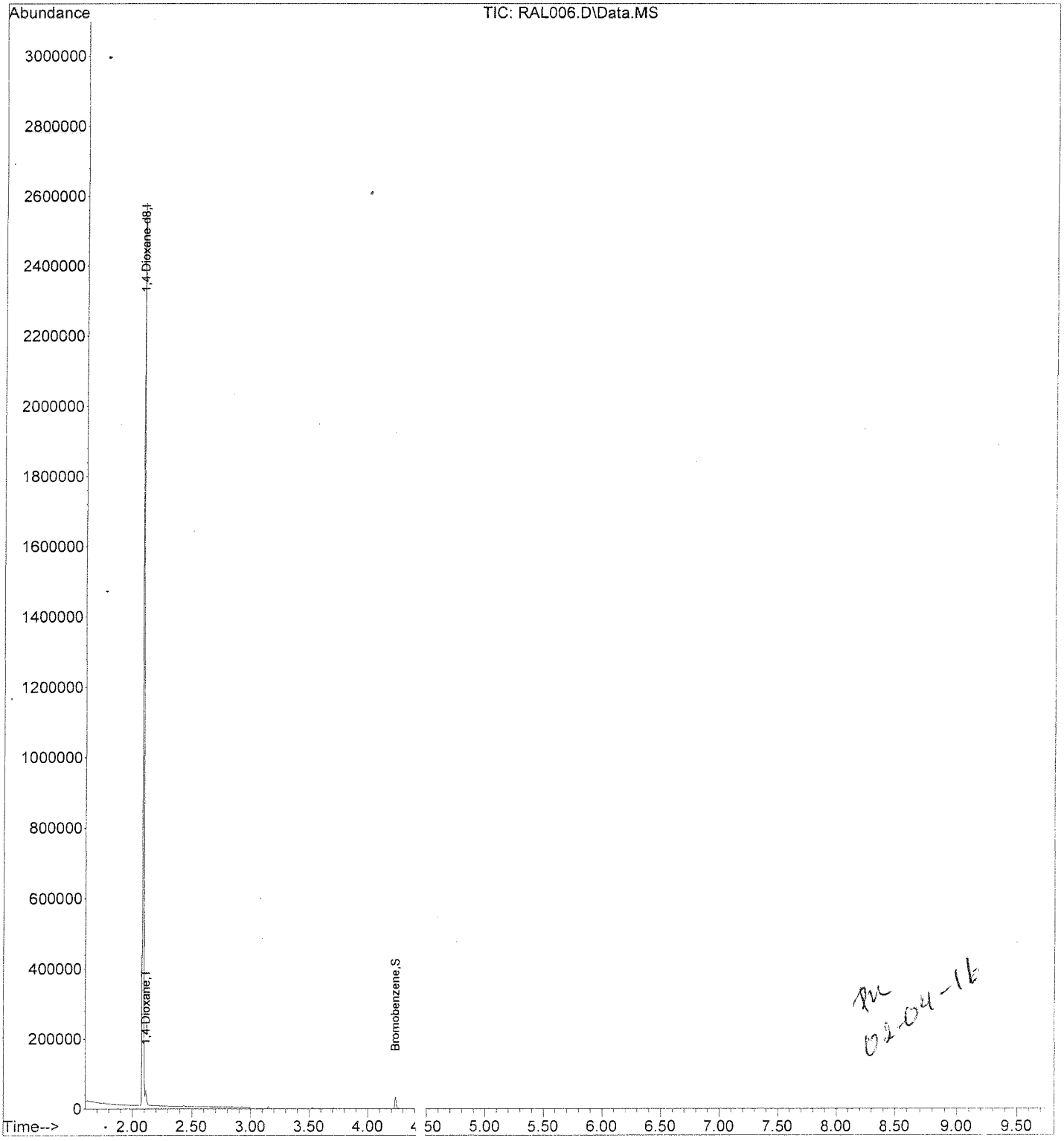
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	946102	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	20642	0.21	ppm	0.00
Spiked Amount 20.000			Recovery =	1.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	17496	0.21	ppm	96

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL006.D Vial: 6
Acq On : 12 Jan 2016 11:31 Operator: KVu
Sample : SVE9A124 0.2PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:22 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL007.D Vial: 7
Acq On : 12 Jan 2016 11:46 Operator: KVu
Sample : SVE9A125 0.5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

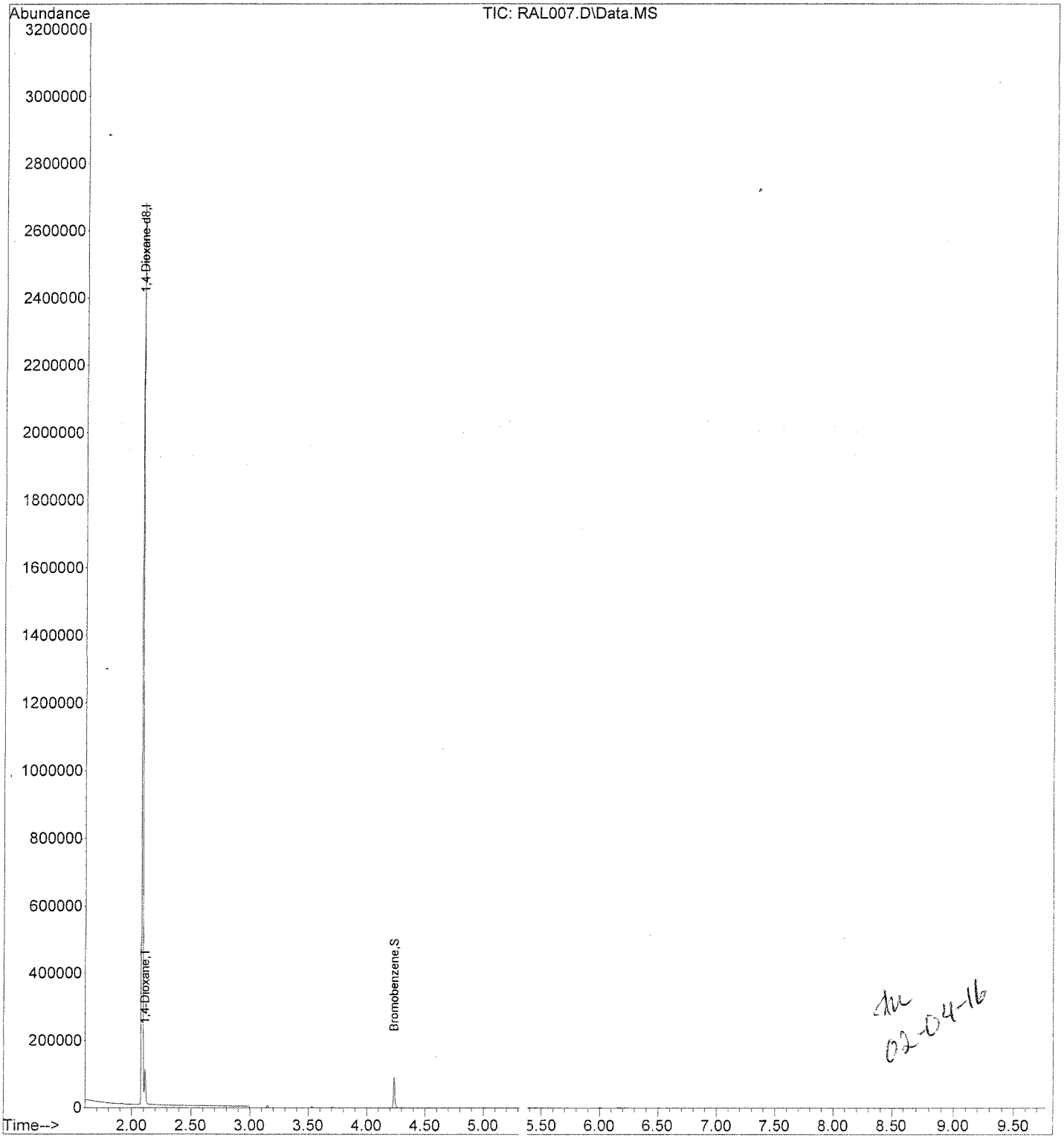
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	981248	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	53069	0.52	ppm	0.00
Spiked Amount 20.000			Recovery =	2.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	44192	0.51	ppm	99

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

m 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL007.D Vial: 7
Acq On : 12 Jan 2016 11:46 Operator: KVu
Sample : SVE9A125 0.5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



dc 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL008.D Vial: 8
Acq On : 12 Jan 2016 12:02 Operator: KVu
Sample : SVE9A126 1PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:43 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

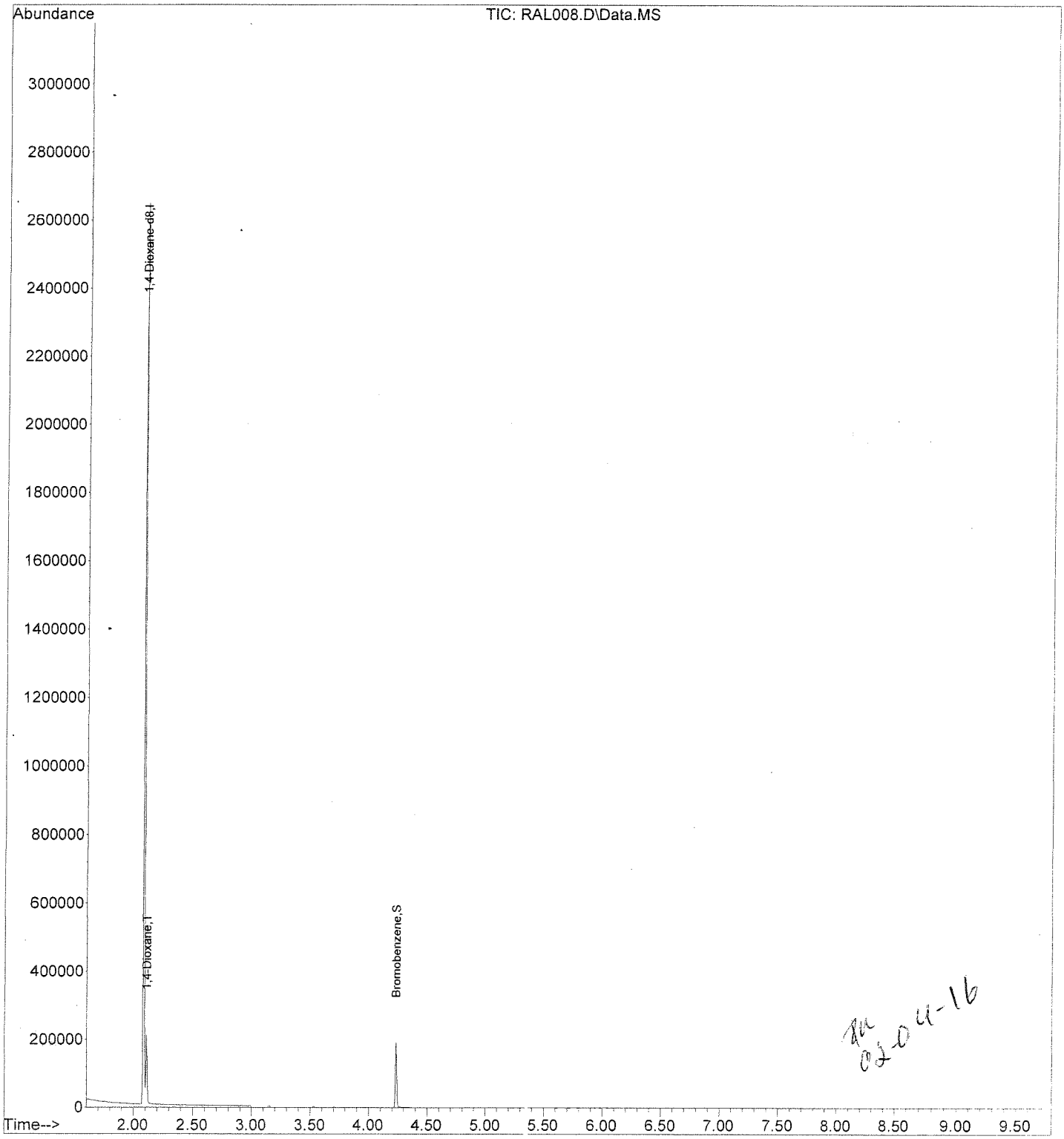
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	969591	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	106409	1.05	ppm	0.00
Spiked Amount 20.000			Recovery =	5.25%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	85828	0.99	ppm	100

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL008.D Vial: 8
Acq On : 12 Jan 2016 12:02 Operator: KVu
Sample : SVE9A126 1PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:43 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL009.D Vial: 9
Acq On : 12 Jan 2016 12:18 Operator: KVu
Sample : SVE9A127 5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

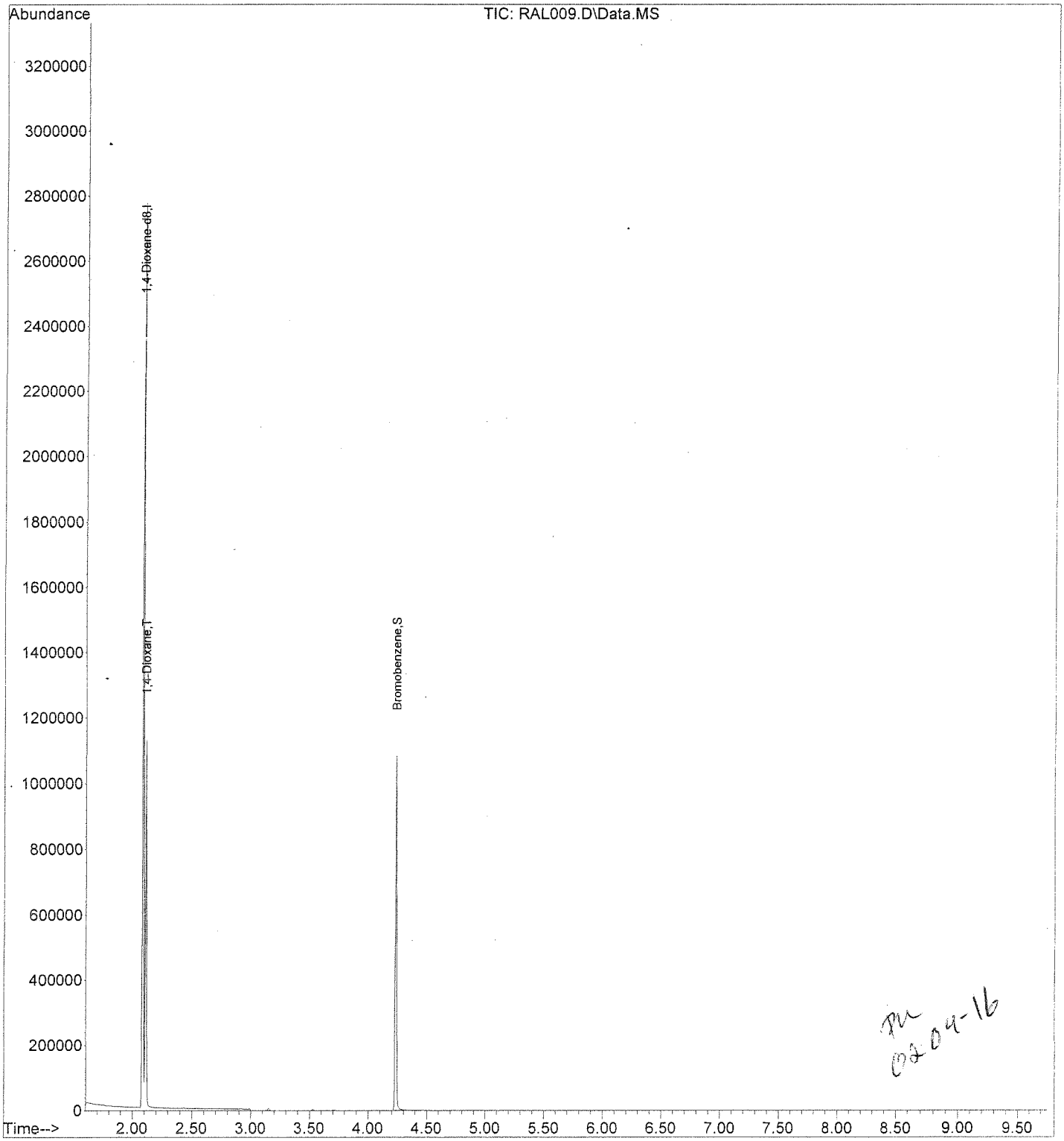
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	986337	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.233	77	570671	5.51	ppm	0.00
Spiked Amount 20.000			Recovery =	27.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	447403	5.09	ppm	100

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL009.D Vial: 9
Acq On : 12 Jan 2016 12:18 Operator: KVu
Sample : SVE9A127 5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



TM 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL010.D Vial: 10
Acq On : 12 Jan 2016 12:33 Operator: KVu
Sample : SVE9A128 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:04 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

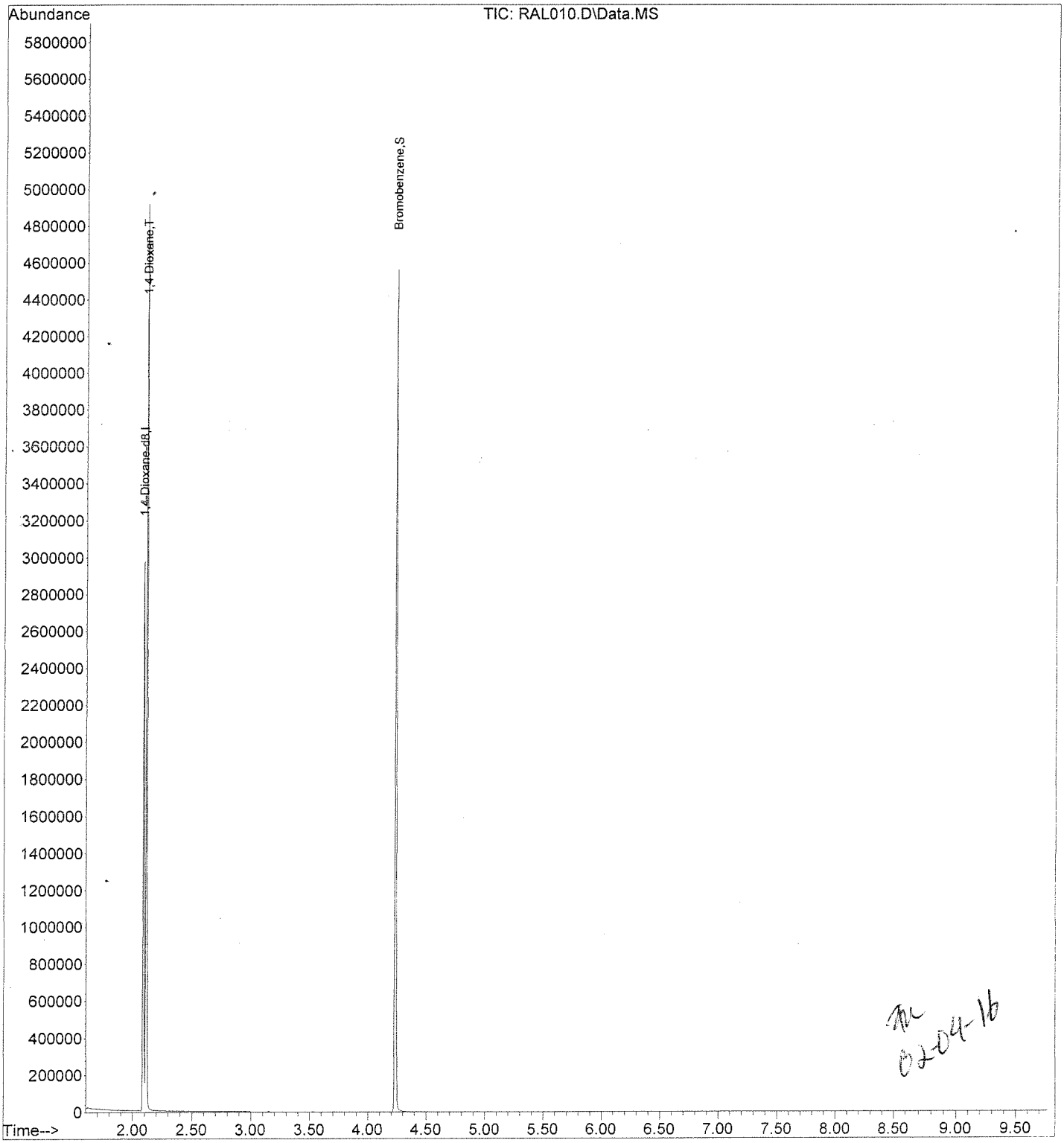
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.089	96	1056008	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	2414237	21.78	ppm	0.00
Spiked Amount 20.000			Recovery =	108.90%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	1884635	20.04	ppm	100

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL010.D Vial: 10
Acq On : 12 Jan 2016 12:33 Operator: KVu
Sample : SVE9A128 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:04 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

3045

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL011.D Vial: 11
Acq On : 12 Jan 2016 12:49 Operator: KVu
Sample : SVE9A129 60PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

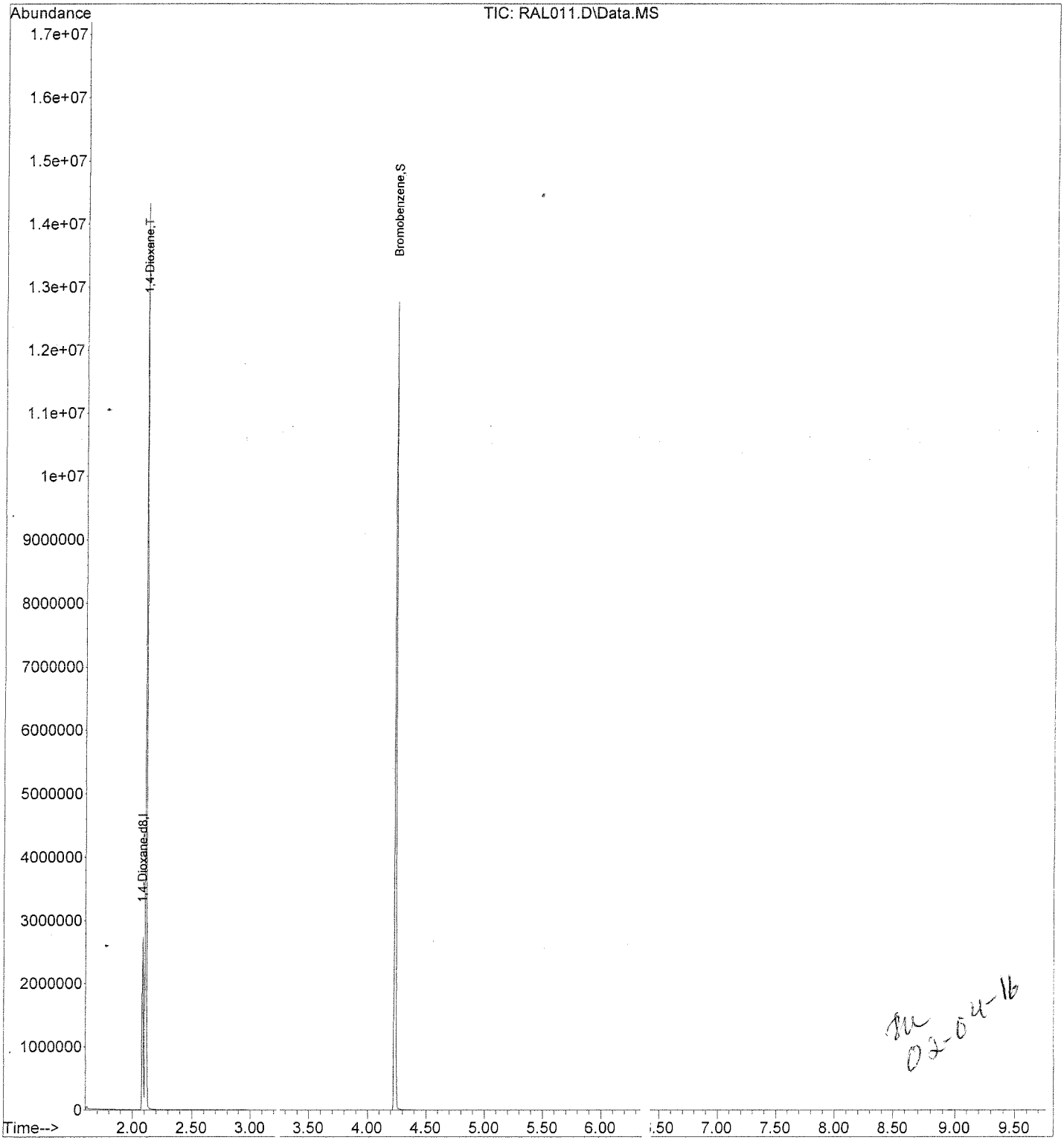
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	999724	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	6880614	65.56	ppm	0.00
Spiked Amount 20.000			Recovery =	327.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	5437581	61.08	ppm	99

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL011.D Vial: 11
Acq On : 12 Jan 2016 12:49 Operator: KVu
Sample : SVE9A129 60PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL012.D Vial: 12
Acq On : 12 Jan 2016 13:05 Operator: KVu
Sample : SVE9A1210 100PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:28 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

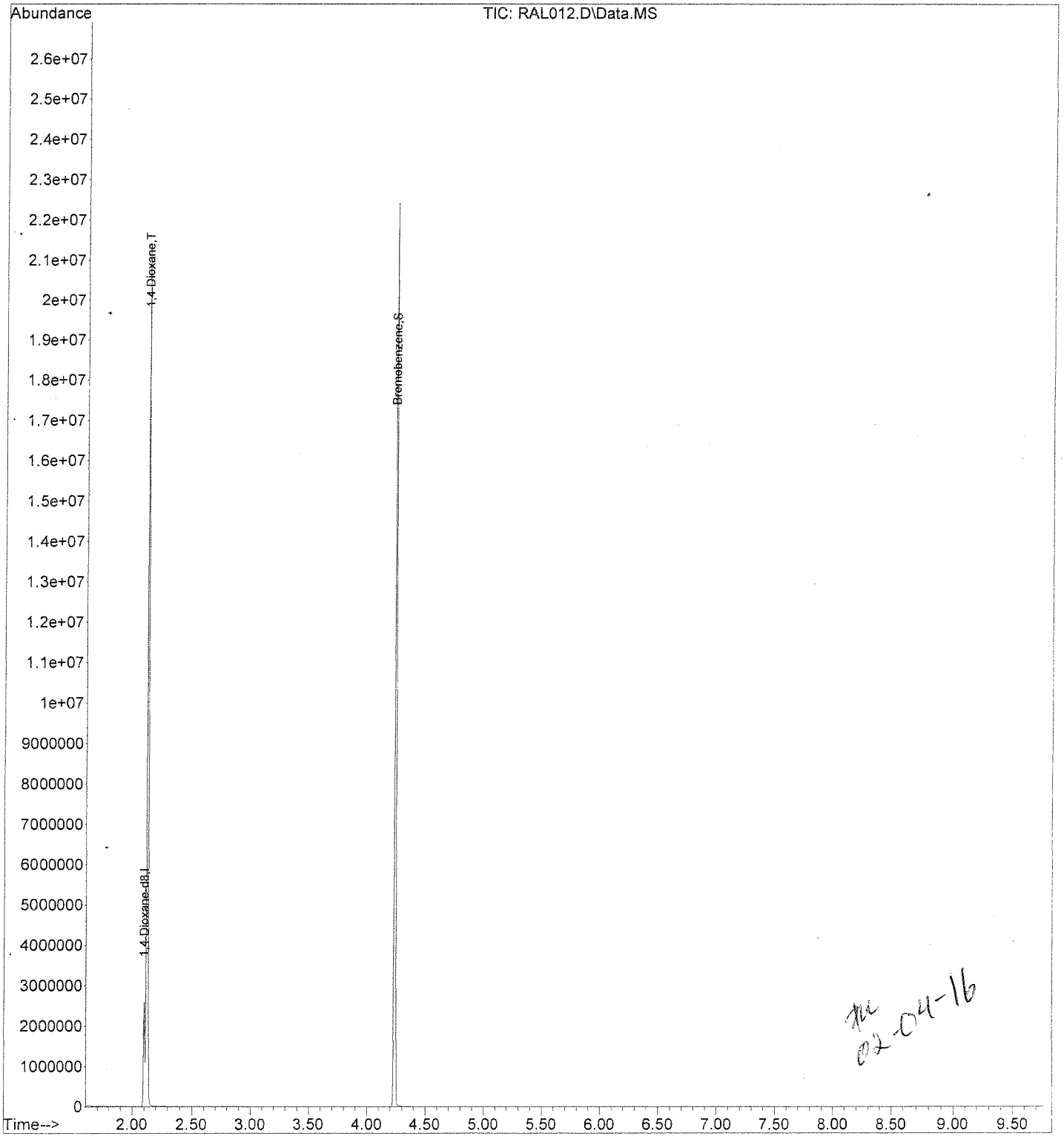
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.099	96	1168668	20.00	ppm	0.01
System Monitoring Compounds						
3) Bromobenzene	4.233	77	9692232	79.00	ppm	0.00
Spiked Amount 20.000			Recovery =	395.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.122	88	8817190	84.73	ppm	# 12

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

RE 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL012.D Vial: 12
Acq On : 12 Jan 2016 13:05 Operator: KVu
Sample : SVE9A1210 100PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:28 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

MC 02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

3652

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	104	0.00
2	T	1,4-Dioxane	1.781	1.804	-1.3	105	0.00
3	S	Bromobenzene	2.100	2.517	-19.9	115	0.00

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

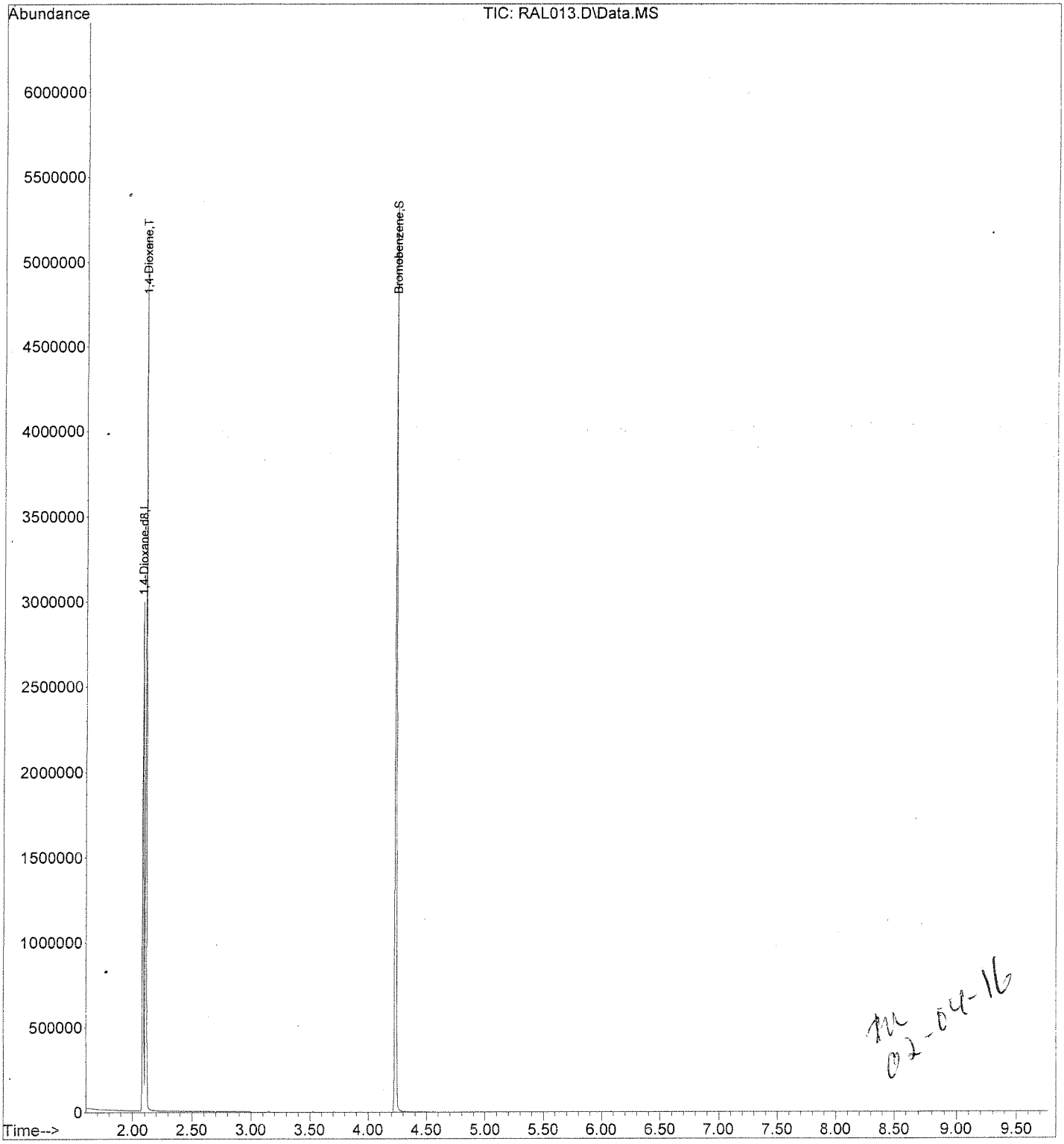
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	1099692	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.233	77	2767423	23.97	ppm	0.00
Spiked Amount 20.000			Recovery =	119.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	1983767	20.26	ppm	99

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

07-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



07-04-16

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H133
Lab File ID: RHL041 BFB Injection Date : 08/16/16
Instrument ID: TOE9 BFB Injection Time : 10:34
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.88
75	30.0 - 60.0% of mass 95	43.59
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.41
173	Less than 2.0% of mass 174	0.47(0.5)1
174	50.0- 100.0% of mass 95	87.79
175	5.0 - 9.0% of mass 174	7.07(8.1)1
176	95.0 - 101.0% of mass 174	87.98(100.2)1
177	5.0 - 9.0% of mass 176	5.42(6.2)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	SSTD020	CSVE9A1237	RHL042	08/16/16	10:48
2	MBLK1W	SVH030WB	RHL043	08/16/16	11:15
3	LCS1W	SVH030WL	RHL044	08/16/16	11:26
4	LCD1W	SVH030WC	RHL045	08/16/16	11:42
5	JBERGW0008	H133-01	RHL055	08/16/16	14:20
6	JBERGW0008MS	H133-01M	RHL056	08/16/16	14:36
7	JBERGW0008MSD	H133-01S	RHL057	08/16/16	14:52
8	SSTD020	CSVE9A1238	RHL058	08/16/16	15:08

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16H133
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.26
	LOWER LIMIT	528004		1.92
	SAMPLE ID			
1	SSTD025	1096561		2.07
2	MBLK1W	840180		2.07
3	LCS1W	885717		2.07
4	LCD1W	941484		2.08
5	JBERGW0008	938091		2.07
6	JBERGW0008MS	889980		2.07
7	JBERGW0008MSD	976038		2.07
8	SSTD025	1133175		2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL042
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/16/16 10:48

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	1096561	1	1	2.075	2.087	0				
2	1,4-Dioxane	18.986	-5.1	1853800	1.691	1.781	2.102	2.113	5.77				
3	Bromobenzene	20.585	2.9	2369631	2.161	2.100	4.241	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL058
IC File :RAL010

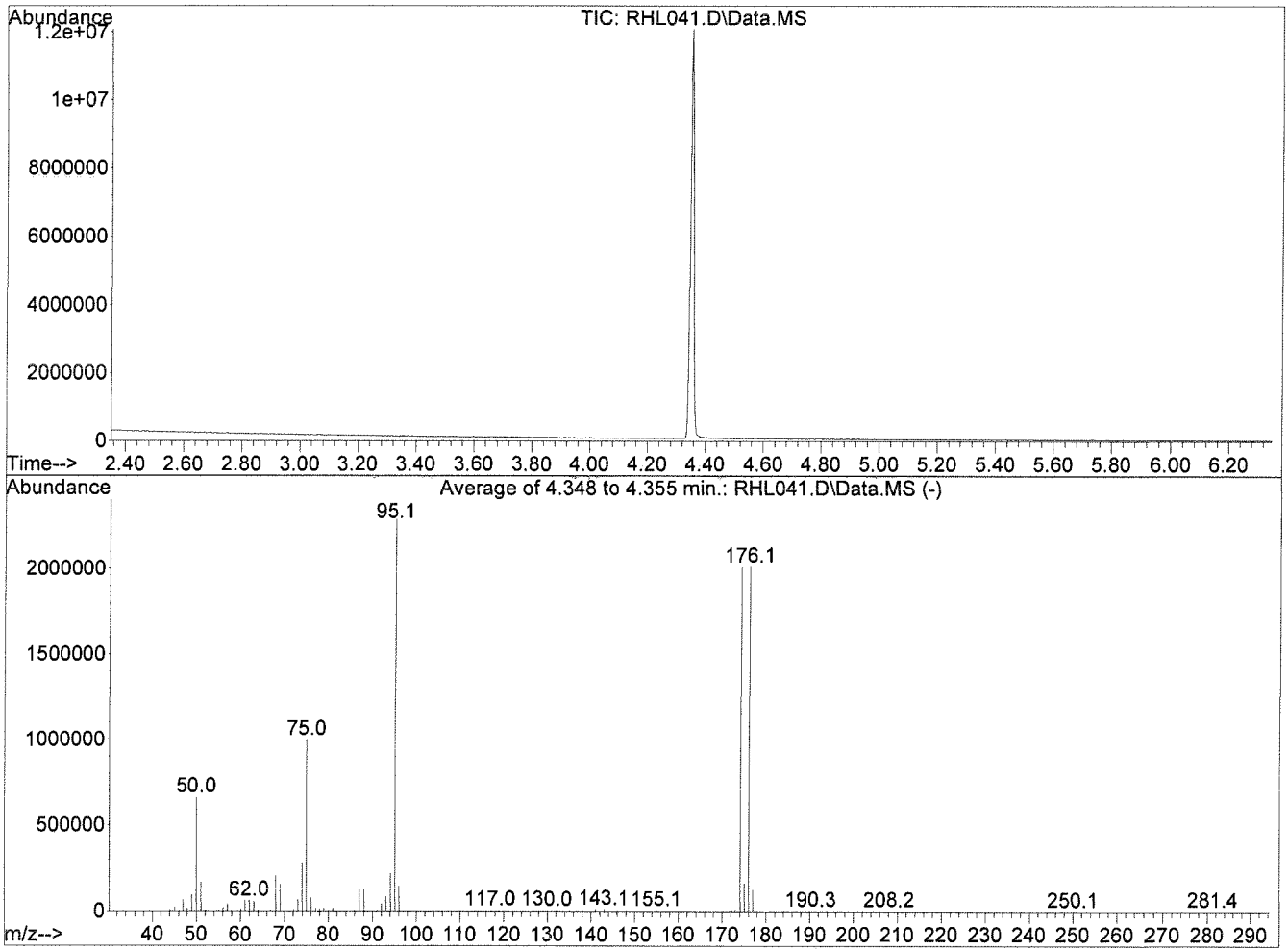
Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/16/16 15:08

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-Dioxane-d8	20.000	0	1133175	1	1	2.075	2.087	0				
2	1,4-Dioxane	18.928	-5.4	1909862	1.685	1.781	2.099	2.113	5.77				
3	Bromobenzene	20.869	4.3	2482562	2.191	2.100	4.241	4.235	10.96				

Data Path : C:\msdchem\1\DATA\16H16\
Data File : RHL041.D
Acq On : 16 Aug 2016 10:34
Operator : DJun
Sample : BFBE9A1237
Misc : E9
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jan 13 13:45:13 2016



AutoFind: Scans 709, 710, 711; Background Corrected with Scan 700

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	28.9	660796	PASS
75	95	30	60	43.6	997477	PASS
95	95	100	100	100.0	2288128	PASS
96	95	5	9	6.4	146771	PASS
173	174	0.00	2	0.5	10720	PASS
174	95	50	100	87.8	2008747	PASS
175	174	5	9	8.1	161771	PASS
176	174	95	101	100.2	2013013	PASS
177	176	5	9	6.2	124067	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H16\RHL042.D Vial: 3
Acq On : 16 Aug 2016 10:48 Operator: DJun
Sample : CSVE9A1237 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 16 11:14:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	-0.01
2	T	1,4-Dioxane	20.000	18.986	5.1	98	-0.01
3	S	Bromobenzene	20.000	20.585	-2.9	98	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H16\RHL042.D Vial: 3
Acq On : 16 Aug 2016 10:48 Operator: DJun
Sample : CSVE9A1237 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 16 11:14:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	104	-0.01
2	T	1,4-Dioxane	1.781	1.691	5.1	98	-0.01
3	S	Bromobenzene	2.100	2.161	-2.9	98	0.00

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

Quantitation Report (QT Reviewed)

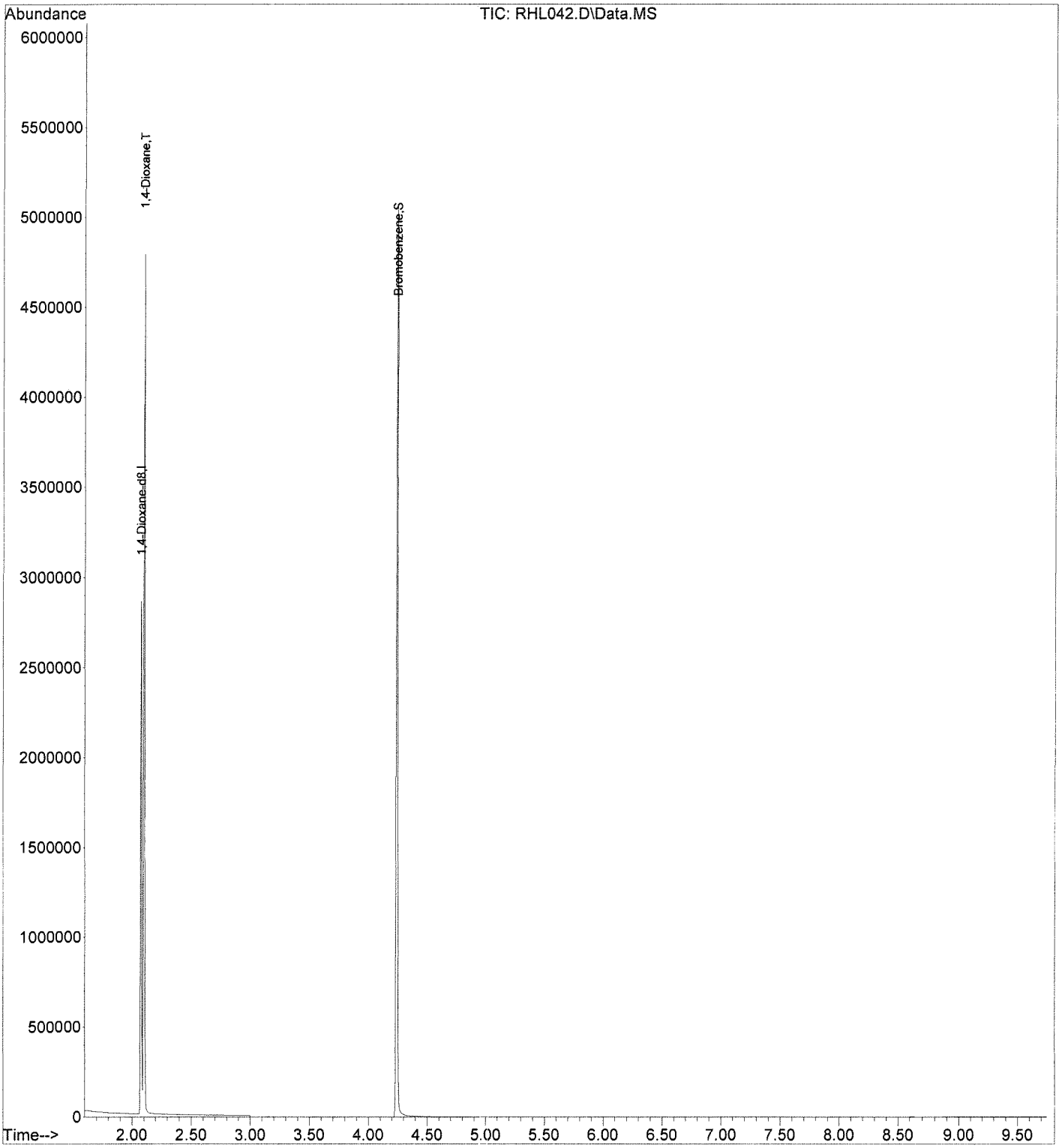
Data File : C:\msdchem\1\DATA\16H16\RHL042.D Vial: 3
Acq On : 16 Aug 2016 10:48 Operator: DJun
Sample : CSVE9A1237 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 16 11:14:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	1096561	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	2369631	20.58	ppm	0.00
Spiked Amount 20.000			Recovery =	102.90%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	1853800	18.99	ppm	# 12

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL042.D Vial: 3
Acq On : 16 Aug 2016 10:48 Operator: DJun
Sample : CSVE9A1237 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 16 11:14:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H16\RHL058.D Vial: 19
Acq On : 16 Aug 2016 15:08 Operator: DJun
Sample : CSVE9A1238 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:47:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	107	-0.01
2	T	1,4-Dioxane	20.000	18.928	5.4	101	-0.01
3	S	Bromobenzene	20.000	20.869	-4.3	103	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H16\RHL058.D Vial: 19
Acq On : 16 Aug 2016 15:08 Operator: DJun
Sample : CSVE9A1238 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:47:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	107	-0.01
2	T	1,4-Dioxane	1.781	1.685	5.4	101	-0.01
3	S	Bromobenzene	2.100	2.191	-4.3	103	0.00

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

Quantitation Report (QT Reviewed)

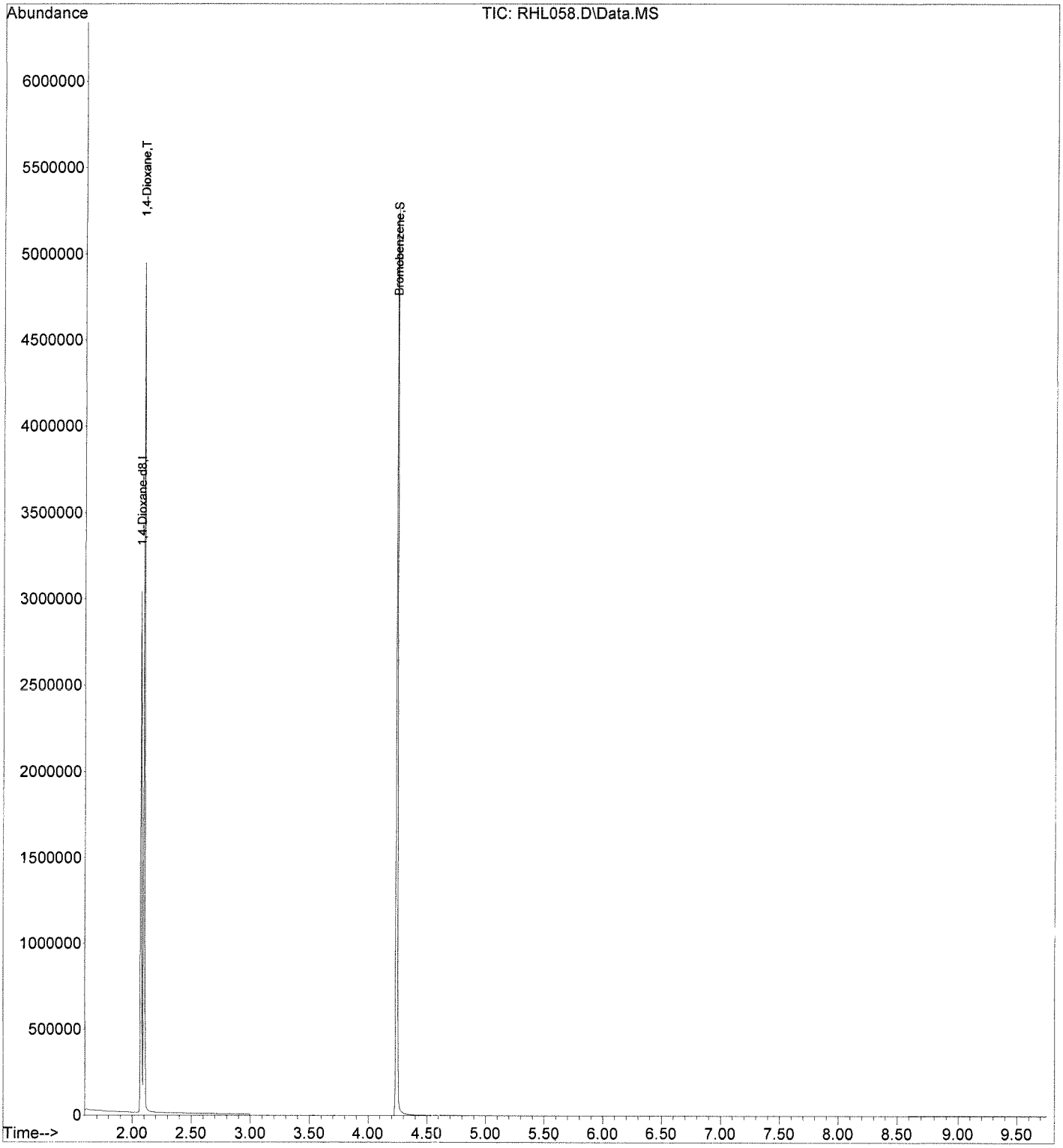
Data File : C:\msdchem\1\DATA\16H16\RHL058.D Vial: 19
Acq On : 16 Aug 2016 15:08 Operator: DJun
Sample : CSVE9A1238 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:47:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	1133175	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.241	77	2482562	20.87	ppm	0.00
Spiked Amount 20.000			Recovery =	104.35%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.099	88	1909862	18.93	ppm	# 12

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16H16\RHL058.D Vial: 19
Acq On : 16 Aug 2016 15:08 Operator: DJun
Sample : CSVE9A1238 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 08:47:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
	2	BFBE9A1201				
	3	SVE9A12 1				0.05 ppm 14 DIOX
	4	2				.075
	5	3				.15
	6	4				.2
	7	5				.5
	8	6				1
	9	7				5
	10	8				20
	11	9				60
	12	10				100
	13	ISVE9A12 1				ICV
SVA001W	14	LOQ-01	1		x	
	15	LOD-01				
SVA002S	16	LOQ-02	1	x		
	17	LOD-02				
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC / ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 8/16/16 10:34 End Date/Time: 8/16/16 15:08

ANALYTICAL BATCH: CSVE9A1237

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RHL040	IBE9A1237				
	041	BFBE9A1237				
	042	CSVE9A1237				
SVH030W	043	SVH030WB	1		X	
	044	WL				
	045	WC				
	046	16H116-01M				
	047	-01S				
	048	-01				
	049	-02				
	050	16H117-01				
	051	-02				
	052	-03				
	053	-04				
	054	-05				
	055	16H133-01				
	056	-01M				
	057	-01S				
	058	CSVE9A1238				

DJ 8/16/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV		
DCC	SS2C-14-30-02	20
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-28-03	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16H16

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: DJ

Date Disposed: 8/18/16

Disposed By: DJ

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	5
☐ 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:

Book #: ESV-092
Preparation Batch: SVH030W
Matrix: water
Micropipette ID: 100 mL: PE97C-03 —
Micropipette ID: 1000 mL: PE00-03 —

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1 —
LCS/MS (D10X)	SS2B-12-21-03	1.0 —
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	56056
Na_2SO_4	SWIB-003-13-13
H_2SO_4	3114101
NaOH	SPIB-08-87-03
Silica Sand	-
Silica Gel	-
Reagent Water	SWIA-006-01-22
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9728559 B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVH030WB			5
-WL			5
-WC			5
H116-01			5
-01M			5
-01S			6
-02			6
H117-01			6
-02			6
-03			6
-04			6
-05			1
H133-01			1
-01M			1
-01S			1

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	~~35~~ TW 8/12/16	
3		
4		
5	35	35
6	35	35
8		

Thermometer ID = SVOC-T1

Prepared By: JM — Witnessed By: NAT
Standard Added By: JM — Checked By: ML
Extract Received By: BJ 8/12/16 — Location: SE01 #2A
Disposed By: — Disposed On:

FileID: SVH030W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVH030W01	SVH030WB	1000	ml	8/11/16 11:52	2	1000	2	1	
16SVH030W02	SVH030WL	1000	ml	8/11/16 11:52	2	1000	2	1	1,4 Dioxane
16SVH030W03	SVH030WC	1000	ml	8/11/16 11:52	2	1000	2	1	1,4 Dioxane
16SVH030W04	H116-01	970	ml	8/11/16 11:52	2	1000	2	1.03	orange
16SVH030W05	H116-01M	1000	ml	8/11/16 11:52	2	1000	2	1	orange
16SVH030W06	H116-01S	900	ml	8/11/16 11:52	2	1000	2	1.11	orange
16SVH030W07	H116-02	950	ml	8/11/16 11:52	2	1000	2	1.05	orange
16SVH030W08	H117-01	940	ml	8/11/16 11:52	2	1000	2	1.06	orange
16SVH030W09	H117-02	1030	ml	8/11/16 11:52	2	1000	2	0.97	orange
16SVH030W10	H117-03	910	ml	8/11/16 11:52	2	1000	2	1.1	
16SVH030W11	H117-04	1060	ml	8/11/16 11:52	2	1000	2	0.94	
16SVH030W12	H117-05	910	ml	8/11/16 11:52	2	1000	2	1.1	
16SVH030W13	H133-01	880	ml	8/11/16 11:52	2	1000	2	1.14	light brown
16SVH030W14	H133-01M	960	ml	8/11/16 11:52	2	1000	2	1.04	light brown
16SVH030W15	H133-01S	930	ml	8/11/16 11:52	2	1000	2	1.08	light brown

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 8/11/16 10:15 ☐ pHAdj(≤2) @

Prepared By: JMuert

☑ Extraction Ended @ 8/12/16 4:15 ☑ pHAdj(≥11) @ 8/11/16 10:15

Checked By: ML

Comments: volume entered after extraction started, pH 6-7, no Cl detected

Date 8/12/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H154**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1004
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3033
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 08-29-2016
EMAX Batch No.: 16H154

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/12/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0029	H154-01	08/10/16	WATER	1,4-DIOXANE BY 8270 SIM
JBEREB0001	H154-02	08/10/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERSW0001	H154-03	08/10/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

16th 184

Date: 8/10/2016

Page 1 of 1

COC #: GW-06

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) J. DeVaughn (Printed Name) J. DeVaughn

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
							GW		
1	OU5MW-07	JBERGW0029	NA	8/10/16	1515	GW	X	2	
2	OU5MW-07	JBEREB0001	NA	8/10/16	1430	GW	X	2	JBER-E equipment rinse blank
3	SOURCE WATER	JBERSW0001	NA	8/10/16	1500	GW	X	2	Potable water source blank

Total No. of Containers (this page): 6
Total (entire COC): 6

Total # of coolers: 1
FedEx airbill #(s):

Relinquished by: J. DeVaughn Signature: J. DeVaughn, HGL Printed Name: Company:	Date: 8/11/16 Time: 1300	Received by: Signature: Printed Name: Company:	Date: Time:	NOTES Preservation Cool 4±2 Deg C (All Samples) Matrix GW: Groundwater
Relinquished by: Signature: Printed Name: Company:	Date: Time:	Received by: Shen Fama Signature: Shen Fama Printed Name: Fed Ex Company:	Date: 081216 Time: 0910	

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

Temp = 30°C

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 116154
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7838 0431 5519	Recipient Shen Tama
☐ EMAX Courier ☐ Client Delivery		Date 08-12-16 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	☐ From Superfund Site	☐ Rad screening required	(Ice)	

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 3.0 °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 130538505 Faulty 8/12/16	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
2	4	D10		R8

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

8/12/16

PM 8/12/16

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 08/12/16 8/12/16

SRF Date 8/12/16

PM Date 8/12/16

ORIGIN ID:GSTA (330) 840-9449
J.DE VAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 11AUG16
ACTWGT: 49.00 LB
CAD: 6990279/SSF01704
DIMS: 27x14x14 IN

BILL THIRD PARTY

Part # 156297-435 RITZ 10/15

TO **EMAX LABORATORIES INC**
ATTN: SAMPLE RECEIVING
1835 W 205 TH ST

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

TRK# 0201 **7838 0431 5519**

FRI - 12 AUG 10:30A
PRIORITY OVERNIGHT

XH HHRA

DSR
90501
CA-US **LAX**

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H154

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H154

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of three (3) water samples were received on 08/12/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RHL061) and CCV(Datafile ID:RHL069). 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. SVH036WB - 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. SVH036WL/SVH036WC was within LCS limits. Refer to LCS summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING
SDG NO. : 16H154
Instrument ID : T-OE9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVH036WB	1	NA	08/18/1611:24	08/16/1611:00	RHL062	RAL010	SVH036W	Method Blank
LCS1W	SVH036WL	1	NA	08/18/1611:35	08/16/1611:00	RHL063	RAL010	SVH036W	Lab Control Sample (LCS)
LCD1W	SVH036WC	1	NA	08/18/1611:51	08/16/1611:00	RHL064	RAL010	SVH036W	LCS Duplicate
JBERGW0029	H154-01	0.99	NA	08/18/1612:06	08/16/1611:00	RHL065	RAL010	SVH036W	Field Sample
JBEREB0001	H154-02	1.01	NA	08/18/1612:22	08/16/1611:00	RHL066	RAL010	SVH036W	Field Sample
JBERSW0001	H154-03	1.04	NA	08/18/1612:38	08/16/1611:00	RHL067	RAL010	SVH036W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 08/10/16
Project : JBER GW SAMPLING	Date Received: 08/12/16
Batch No. : 16H154	Date Extracted: 08/16/16 11:00
Sample ID: JBERGW0029	Date Analyzed: 08/18/16 12:06
Lab Samp ID: H154-01	Dilution Factor: 0.99
Lab File ID: RHL065	Matrix : WATER
Ext Btch ID: SVH036W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	36.7	39.60	92.7	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 08/10/16
Project : JBER GW SAMPLING	Date Received: 08/12/16
Batch No. : 16H154	Date Extracted: 08/16/16 11:00
Sample ID: JBEREB0001	Date Analyzed: 08/18/16 12:22
Lab Samp ID: H154-02	Dilution Factor: 1.01
Lab File ID: RHL066	Matrix : WATER
Ext Btch ID: SVH036W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.51	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	35.6	40.40	88.1	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/10/16
Project	: JBER GW SAMPLING	Date Received:	08/12/16
Batch No.	: 16H154	Date Extracted:	08/16/16 11:00
Sample ID:	JBERSW0001	Date Analyzed:	08/18/16 12:38
Lab Samp ID:	H154-03	Dilution Factor:	1.04
Lab File ID:	RHL067	Matrix :	WATER
Ext Btch ID:	SVH036W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.52	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	37.0	41.60	89.0	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: NA
Project : JBER GW SAMPLING	Date Received: 08/16/16
Batch No. : 16H154	Date Extracted: 08/16/16 11:00
Sample ID: MBLK1W	Date Analyzed: 08/18/16 11:24
Lab Samp ID: SVH036WB	Dilution Factor: 1
Lab File ID: RHL062	Matrix : WATER
Ext Btch ID: SVH036W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	36.9	40.00	92.3	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H154
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVH036WB	SVH036WL	SVH036WC		
LAB FILE ID:	RHL062	RHL063	RHL064		
DATE EXTRACTED:	08/16/1611:00	08/16/1611:00	08/16/1611:00	DATE COLLECTED:	NA
DATE ANALYZED:	08/18/1611:24	08/18/1611:35	08/18/1611:51	DATE RECEIVED:	08/16/16
PREP. BATCH:	SVH036W	SVH036W	SVH036W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	28.6	71	40.0	32.2	80	12	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	40.9	102	40.0	40.9	102	30-130

INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H154
Lab File ID: RAL002 BFB Injection Date : 01/12/16
Instrument ID: TOE9 BFB Injection Time : 10:33
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

2-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc | Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: | SAS No.: SDG No.: 16H154
Lab File ID: RHL060 | BFB Injection Date : 08/18/16
Instrument ID: TOE9 | BFB Injection Time : 10:33
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.45
75	30.0 - 60.0% of mass 95	42.20
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.51
173	Less than 2.0% of mass 174	0.38(0.4)1
174	50.0- 100.0% of mass 95	91.78
175	5.0 - 9.0% of mass 174	7.05(7.7)1
176	95.0 - 101.0% of mass 174	87.79(95.6)1
177	5.0 - 9.0% of mass 176	5.57(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	SSTD020	CSVE9A1239	RHL061	08/18/16	10:50
2	MBLK1W	SVH036WB	RHL062	08/18/16	11:24
3	LCS1W	SVH036WL	RHL063	08/18/16	11:35
4	LCD1W	SVH036WC	RHL064	08/18/16	11:51
5	JBERGW0029	H154-01	RHL065	08/18/16	12:06
6	JBEREB0001	H154-02	RHL066	08/18/16	12:22
7	JBERSW0001	H154-03	RHL067	08/18/16	12:38
8	SSTD020	CSVE9A1240	RHL069	08/18/16	13:10

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16H154
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.26
	LOWER LIMIT	528004		1.92
	SAMPLE ID			
1	SSTD020	1248453		2.07
2	MBLK1W	889930		2.07
3	LCS1W	904030		2.07
4	LCD1W	909538		2.07
5	JBERGW0029	888855		2.07
6	JBEREB0001	914851		2.08
7	JBERSW0001	886316		2.07
8	SSTD020	1223519		2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL061
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/18/16 10:50

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-Dioxane-d8	20.000	0	1248453	1	1	2.075	2.087	0				
	2	1,4-Dioxane	18.812	-5.9	2091265	1.675	1.781	2.102	2.113	5.77				
	3	Bromobenzene	20.168	0.8	2643300	2.117	2.100	4.243	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL069
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/18/16 13:10

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-Dioxane-d8	20.000	0	1223519	1	1	2.075	2.087	0				
2	1,4-Dioxane	18.793	-6.0	2047429	1.673	1.781	2.099	2.113	5.77				
3	Bromobenzene	21.119	5.6	2712613	2.217	2.100	4.241	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H18\RHL061.D Vial: 3
Acq On : 18 Aug 2016 10:50 Operator: DJun
Sample : CSVE9A1239 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 11:23:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	118	-0.01
2	T	1,4-Dioxane	20.000	18.812	5.9	111	-0.01
3	S	Bromobenzene	20.000	20.168	-0.8	109	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H18\RHL061.D Vial: 3
Acq On : 18 Aug 2016 10:50 Operator: DJun
Sample : CSVE9A1239 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 18 11:23:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	118	-0.01
2	T	1,4-Dioxane	1.781	1.675	6.0	111	-0.01
3	S	Bromobenzene	2.100	2.117	-0.8	109	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H18\RHL069.D Vial: 11
Acq On : 18 Aug 2016 13:10 Operator: DJun
Sample : CSVE9A1240 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 19 08:34:39 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	116	-0.01
2	T	1,4-Dioxane	20.000	18.793	6.0	109	-0.01
3	S	Bromobenzene	20.000	21.119	-5.6	112	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H18\RHL069.D Vial: 11
Acq On : 18 Aug 2016 13:10 Operator: DJun
Sample : CSVE9A1240 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 19 08:34:39 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	116	-0.01
2	T	1,4-Dioxane	1.781	1.673	6.1	109	-0.01
3	S	Bromobenzene	2.100	2.217	-5.6	112	0.00

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

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
	2	BFBE9A1201				
	3	SVE9A12 1				0.05 ppm 14 DIOX
	4	2				.075
	5	3				.15
	6	4				.2
	7	5				.5
	8	6				1
	9	7				5
	10	8				20
	11	9				60
	12	10				100
	13	ISVE9A121				ICV
SVA001W	14	LOQ-01	1		x	
	15	LOD-01				
SVA002S	16	LOQ-02	1	x		
	17	LOD-02				
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

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.

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EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 8/18/16 10:33 End Date/Time: 8/18/16 13:10

ANALYTICAL BATCH: CSVE9A1239

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RHL059	IBE9A1239				
	060	DFTE9A1239				
	061	CSVE9A1239				
SVH036W	062	SVH036WB	1		x	
	063	↓ WL	↓		↓	
	064	↓ WC				
	065	16H154-01				
	066	↓ -02				
	067	↓ -03				
↓	↓ 068	16H164-01	↓		↓	
	069	CSVE9A1240				
						DJ 8/18/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name / ID / Conc. (mg/L)	
DFTPP	
INT. STD.	SS2A-13-01-15 / 1000
ICV	
DCC	SS2C-14-30-02 / 20
BENZIDINE	
APP 9	
APP 9 ADD	
BFB	SS2C-14-28-03 / 50
Solvent	ID
CH_2Cl_2	55219
DATA FILE	16H18
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO000-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: DJ

Date Disposed: 8/19/16

Disposed By: DJ

This page is checked during data review.

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EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-092
Preparation Batch: SVH036W
Matrix: Water
Micropipette ID: 100 uL: PE97C-03 ✓
Micropipette ID: 1000 uL: PE00-01 ✓

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1 ✓
LCS/MS (DIOXANE)	SS2B-12-24-02	1.0 ✓
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	SL6056
Na_2SO_4	SWIB-003-13-11
H_2SO_4	–
NaOH	SPIB-08-87-04
Silica Sand	–
Silica Gel	–
Reagent Water	SWIA-006-01-22
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9728559 B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVH036WB			1
-WL			1
-WC			1
#154-01			1
-02			1
-03			3
#164-01			3

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	~~3~~ TW 8/17/16	
3	35	35
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: VM Witnessed By: NAT
Standard Added By: VM Checked By: ML
Extract Received By: TW 8/17/16 Location: SE01 # 18A
Disposed By: Disposed On:

FileID: SVH036W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVH036W01	SVH036WB	1000	ml	8/16/16 12:27	2	1000	2	1	
16SVH036W02	SVH036WL	1000	ml	8/16/16 12:27	2	1000	2	1	1,4 Dioxane
16SVH036W03	SVH036WC	1000	ml	8/16/16 12:27	2	1000	2	1	1,4 Dioxane
16SVH036W04	H154-01	1010	ml	8/16/16 12:27	2	1000	2	0.99	light yellow
16SVH036W05	H154-02	990	ml	8/16/16 12:27	2	1000	2	1.01	
16SVH036W06	H154-03	960	ml	8/16/16 12:27	2	1000	2	1.04	
16SVH036W07	H164-01	890	ml	8/16/16 12:27	2	1000	2	1.12	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 8/16/16 11:00 ☐ pHAdj(≤2) @ Prepared By: JMuert

☑ Extraction Ended @ 8/17/16 5:00 ☑ pHAdj(≥11) @ 8/16/16 11:00 Checked By: ML

Comments: volume entered after extraction started, pH 5-6, no Chlorine detected Date 8/17/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H209**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1004
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3033
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 09-14-2016
EMAX Batch No.: 16H209

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/18/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0018	H209-01	08/16/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0019	H209-02	08/16/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0018MS	H209-01M	08/16/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0018MSD	H209-01S	08/16/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

16H209

Date: 8/16/2016

Page 1 of 1

COC #: GW-07

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) J. DeVaughn (Printed Name) J. DeVaughn

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers
					GW		
AP-2982	JBERGW0018	NA	8/16/16	1245	GW	X	2
AP-2982	JBERGW0018-MS	NA	8/16/16	1245	GW	X	2
AP-2982	JBERGW0018-MSD	NA	8/16/16	1245	GW	X	2
AP-3231	JBERGW0019	NA	8/16/16	1320	GW	X	2

1
2

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

OBSERVATIONS, COMMENTS
SPECIAL INSTRUCTIONS

Total No. of Containers (this page): 8
Total (entire COC): 8

Total # of coolers: 1
FedEx airbill #(s):

Relinquished by	Date	Received by	Date
Signature: J. DeVaughn	8/17/16	Signature:	
Printed Name: J. DeVaughn	Time: 1100	Printed Name:	Time
Company: HGL		Company:	
Relinquished by	Date	Received by	Date
Signature:		Signature: Sheri Lema	081816
Printed Name:	Time	Printed Name: Emax	Time 0900
Company:		Company:	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

Temp = 1.02°C

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16-H209
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7838 5094 3238	Recipient Sheri Lamo
☐ EMAX Courier ☐ Client Delivery		Date 08/18/16 Time 0900

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	(Ice)	

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 1.2 °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 130538505 SF out 8/16 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

cs 8/18/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. RB 8/18/16

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 8/18/16 8/18/16

SRF Date 8/18/16

PM Date 8/18/16

ORIGIN ID:GSTA (330) 840-9449
J. DEVAUGHN
HYDROGEOLOGIC, INC
581 BOSTON MILLS RD STE 600

HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 17AUG16
ACTWGT: 53.80 LB
CAD: 6990280/SSF01704
DIMS: 27x14x13 IN

BILL THIRD PARTY

Part # 156297-435 RIT2 10/15

TO ATN SAMPLE RECEIVING
EMAX LABORATORIES, INC
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8886
INV:
PO: REF:
DEPT:

FedEx Express

TRK# 0201 7838 5094 3238

THU - 18 AUG 10:30A
PRIORITY OVERNIGHT

XH HHRA

DSR AHS
90501
CA-US LAX

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H209

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H209

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of two (2) water samples were received on 08/18/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RHL072) and CCV(Datafile ID:RHL080). 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. SVH050WB - 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. SVH050WL/SVH050WC was 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) set of MS/MSD was analyzed. 1,4-Dioxane was within MS QC limits in H209-01M/S. Refer to Matrix QC summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING
SDG NO. : 16H209
Instrument ID : T-OE9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVH050WB	1	NA	08/31/1610:23	08/22/1610:30	RHL073	RAL010	SVH050W	Method Blank
LCS1W	SVH050WL	1	NA	08/31/1610:34	08/22/1610:30	RHL074	RAL010	SVH050W	Lab Control Sample (LCS)
LCD1W	SVH050WC	1	NA	08/31/1610:50	08/22/1610:30	RHL075	RAL010	SVH050W	LCS Duplicate
JBERGW0018MS	H209-01M	1.06	NA	08/31/1611:06	08/22/1610:30	RHL076	RAL010	SVH050W	Matrix Spike Sample (MS)
JBERGW0018MSD	H209-01S	0.97	NA	08/31/1611:22	08/22/1610:30	RHL077	RAL010	SVH050W	MS Duplicate (MSD)
JBERGW0018	H209-01	0.94	NA	08/31/1611:38	08/22/1610:30	RHL078	RAL010	SVH050W	Field Sample
JBERGW0019	H209-02	0.94	NA	08/31/1611:54	08/22/1610:30	RHL079	RAL010	SVH050W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/16/16
Project	: JBER GW SAMPLING	Date Received:	08/18/16
Batch No.	: 16H209	Date Extracted:	08/22/16 10:30
Sample ID:	JBERGW0018	Date Analyzed:	08/31/16 11:38
Lab Samp ID:	H209-01	Dilution Factor:	0.94
Lab File ID:	RHL078	Matrix :	WATER
Ext Btch ID:	SVH050W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.47	0.12	0.24

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	24.6	37.60	65.3	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/16/16
Project	: JBER GW SAMPLING	Date Received:	08/18/16
Batch No.	: 16H209	Date Extracted:	08/22/16 10:30
Sample ID:	JBERGW0019	Date Analyzed:	08/31/16 11:54
Lab Samp ID:	H209-02	Dilution Factor:	0.94
Lab File ID:	RHL079	Matrix :	WATER
Ext Btch ID:	SVH050W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.47	0.12	0.24

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	32.4	37.60	86.3	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	08/22/16
Batch No.	: 16H209	Date Extracted:	08/22/16 10:30
Sample ID:	MBLK1W	Date Analyzed:	08/31/16 10:23
Lab Samp ID:	SVH050WB	Dilution Factor:	1
Lab File ID:	RHL073	Matrix :	WATER
Ext Btch ID:	SVH050W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	34.0	40.00	84.9	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H209
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVH050WB	SVH050WL	SVH050WC		
LAB FILE ID:	RHL073	RHL074	RHL075		
DATE EXTRACTED:	08/22/1610:30	08/22/1610:30	08/22/1610:30	DATE COLLECTED:	NA
DATE ANALYZED:	08/31/1610:23	08/31/1610:34	08/31/1610:50	DATE RECEIVED:	08/22/16
PREP. BATCH:	SVH050W	SVH050W	SVH050W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	27.1	68	40.0	27.6	69	2	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	35.7	89	40.0	36.1	90	30-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H209
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	0.94	1.06	0.97		
SAMPLE ID:	JBERGW0018				
LAB SAMP ID:	H209-01	H209-01M	H209-01S		
LAB FILE ID:	RHL078	RHL076	RHL077		
DATE EXTRACTED:	08/22/1610:30	08/22/1610:30	08/22/1610:30	DATE COLLECTED:	08/16/16
DATE ANALYZED:	08/31/1611:38	08/31/1611:06	08/31/1611:22	DATE RECEIVED:	08/18/16
PREP. BATCH:	SVH050W	SVH050W	SVH050W		
CALIB. REF:	RAL010	RAL010	RAL010		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,4-Dioxane	ND	42.4	21.9	52	38.8	23.1	60	14	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
Bromobenzene	42.4	27.4	65	38.8	30.2	78	30-130

INITIAL CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H209

Lab File ID: RAL002 BFB Injection Date : 01/12/16

Instrument ID: TOE9 BFB Injection Time : 10:33

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

07-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

1W 02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H209

Lab File ID: RHL071 BFB Injection Date : 08/31/16

Instrument ID: TOE9 BFB Injection Time : 09:03

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.44
75	30.0 - 60.0% of mass 95	39.92
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.02
173	Less than 2.0% of mass 174	0.00(0.0)1
174	50.0- 100.0% of mass 95	81.77
175	5.0 - 9.0% of mass 174	6.00(7.3)1
176	95.0 - 101.0% of mass 174	81.28(99.4)1
177	5.0 - 9.0% of mass 176	4.68(5.8)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	SSTD020	CSVE9A1241	RHL072	08/31/16	09:18
2	MBLK1W	SVH050WB	RHL073	08/31/16	10:23
3	LCS1W	SVH050WL	RHL074	08/31/16	10:34
4	LCD1W	SVH050WC	RHL075	08/31/16	10:50
5	JBERGW0018MS	H209-01M	RHL076	08/31/16	11:06
6	JBERGW0018MSD	H209-01S	RHL077	08/31/16	11:22
7	JBERGW0018	H209-01	RHL078	08/31/16	11:38
8	JBERGW0019	H209-02	RHL079	08/31/16	11:54
9	SSTD020	CSVE9A1242	RHL080	08/31/16	13:29

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16H209
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.26
	LOWER LIMIT	528004	1.92
	SAMPLE ID		
1	SSTD020	901058	2.07
2	MBLK1W	983058	2.07
3	LCS1W	964614	2.08
4	LCD1W	982430	2.07
5	JBERGW0018MS	944733	2.08
6	JBERGW0018MSD	942661	2.08
7	JBERGW0018	972378	2.08
8	JBERGW0019	956106	2.07
9	SSTD020	1126575	2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL072
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/31/16 09:18

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-Dioxane-d8	20.000	0	901058	1	1	2.072	2.087	0				
2	1,4-Dioxane	18.835	-5.8	1511161	1.677	1.781	2.097	2.113	5.77				
3	Bromobenzene	19.634	-1.8	1857229	2.061	2.100	4.243	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RHL080
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :08/31/16 13:29

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-Dioxane-d8	20.000	0	1126575	1	1	2.069	2.087	0				
2	1,4-Dioxane	18.626	-6.9	1868479	1.659	1.781	2.094	2.113	5.77				
3	Bromobenzene	19.397	-3.0	2294004	2.036	2.100	4.236	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H31\RHL072.D Vial: 3
Acq On : 31 Aug 2016 09:18 Operator: KVu
Sample : CSVE9A1241 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 31 09:40:50 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	85	-0.02
2	T	1,4-Dioxane	20.000	18.835	5.8	80	0.00
3	S	Bromobenzene	20.000	19.634	1.8	77	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H31\RHL072.D Vial: 3
Acq On : 31 Aug 2016 09:18 Operator: KVu
Sample : CSVE9A1241 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 31 09:40:50 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	85	-0.02
2	T	1,4-Dioxane	1.781	1.677	5.8	80	0.00
3	S	Bromobenzene	2.100	2.061	1.9	77	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H31\RHL080.D Vial: 11
Acq On : 31 Aug 2016 13:29 Operator: KVu
Sample : CSVE9A1242 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 31 13:51:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	107	-0.02
2	T	1,4-Dioxane	20.000	18.626	6.9	99	0.00
3	S	Bromobenzene	20.000	19.397	3.0	95	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16H31\RHL080.D Vial: 11
Acq On : 31 Aug 2016 13:29 Operator: KVu
Sample : CSVE9A1242 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Aug 31 13:51:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	107	-0.02
2	T	1,4-Dioxane	1.781	1.659	6.9	99	0.00
3	S	Bromobenzene	2.100	2.036	3.0	95	0.00

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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
↓	2	BFBE9A1201	↓			
↓	3	SVE9A12 1	↓			0.05 ppm 14 DIOX
↓	4	↓ 2	↓			.075
↓	5	3	↓			.15
↓	6	4	↓			.2
↓	7	5	↓			.5
↓	8	6	↓			1
↓	9	7	↓			5
↓	10	8	↓			20
↓	11	9	↓			60
↓	12	↓ 10	↓			100 ↓
↓	13	ISVE9A12 1	↓			ICV
SVA001W	14	LOQ-01	1		x	
↓	15	LOD-01	↓		↓	
SVA002S	16	LOQ-02	1	x		
↓	↓ 17	LOD-02	↓	↓		
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	552L9
DATA FILE	16A12

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 8/31/16 9:03 End Date/Time: 8/31/16 13:29

ANALYTICAL BATCH: CSVE9A1241

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RHL070	IBE9A1241				
	071	BFBE9A1241				
	072	CSVE9A1241				
SVH050W	073	SVH050WB	1		X	
↓	074	↓ WL	↓		↓	
	075	WC				
	076	16H209-01M				
	077	01S				
	078	01				
	079	02				
	080	CSVE9A1242				
						VW 8/31/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name / ID / Conc. (mg/L)	
DFTPP	
INT. STD.	SS2A-13-01-15 — 1000
ICV	
DCC	SS2C-14-30-02 — 20
BENZIDINE	
APP 9	
APP 9 ADD	
BFB	SS2C-14-28-03 — 50
Solvent	ID
CH_2Cl_2	55219
DATA FILE	16H31
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KV

Date Disposed: 9/1/16

Disposed By: KV

This page is checked during data review.

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-092
Preparation Batch: SVH050W
Matrix: WATER
Micropipette ID: 100µL: PE97C-03 ✓
Micropipette ID: 1000µL: PE00-03 ✓

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.4 ✓
LCS/MS (1,4DIOXANE)	LS2B-12-24-02	1.0 ✓
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	560S6
Na_2SO_4	SWB-003-11-20
H_2SO_4	–
NaOH	SPIB-08-87-03
Silica Sand	–
Silica Gel	–
Reagent Water	SWA-006-01-22
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9703627A

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVH050 WB			1
WL			1
WC			1
H209-01			1
-01M			1
-01S			2
-02			2

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3		
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: JM — Witnessed By: NAT
Standard Added By: JM — Checked By: ML
Extract Received By: SJ 8/22/16 — Location: SE09 #14
Disposed By: — Disposed On:

FileID: SVH050W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVH050W01	SVH050WB	1000	ml	8/22/16 13:05	2	1000	2	1	
16SVH050W02	SVH050WL	1000	ml	8/22/16 13:05	2	1000	2	1	1,4-Dioxane
16SVH050W03	SVH050WC	1000	ml	8/22/16 13:05	2	1000	2	1	1,4-Dioxane
16SVH050W04	H209-01	1060	ml	8/22/16 13:05	2	1000	2	0.94	yellow
16SVH050W05	H209-01M	940	ml	8/22/16 13:05	2	1000	2	1.06	yellow
16SVH050W06	H209-01S	1030	ml	8/22/16 13:06	2	1000	2	0.97	yellow
16SVH050W07	H209-02	1060	ml	8/22/16 13:06	2	1000	2	0.94	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 8/22/16 10:30 ☐ pHAdj(≤2) @ Prepared By: JMuert

☑ Extraction Ended @ 8/23/16 4:30 ☑ pHAdj(≥11) @ 8/22/16 10:30 Checked By: ML

Comments: volume entered after extraction started, pH 5, no Cl detected Date 8/23/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H276**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1004
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3032
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 09-14-2016
EMAX Batch No.: 16H276

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/24/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0012	H276-01	08/22/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW9000	H276-02	08/22/16	WATER	1,4-DIOXANE BY 8270 SIM

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

Laboratory Chain of Custody Record

HGL HydroGeoLogic, Inc
Exceeding Expectations

Date: 8/22/2016 Page 1 of 1

16H276

COC #: GW-08

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) J. DeVaughn (Printed Name) J. DeVaughn

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers
					GW		
41755WL-04	JBERGW0012	NA	8/22/16	1550	GW	X	2
41755WL-04	JBERGW9000	NA	8/22/16	1550	GW	X	2

1
2

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS

Relinquished by	Date	Received by	Date
Signature: J. DeVaughn	8/23/16	Signature	
Printed Name: J. DeVaughn	Time: 1200	Printed Name	Time
Company: HGL		Company	
Relinquished by	Date	Received by	Date
Signature		Signature: Shea Tema	082416
Printed Name	Time	Printed Name: Email	Time: 0900
Company		Company	

Total No. of Containers (this page): 4
Total (entire COC): 4

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

Total # of coolers:
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

TEMP=5.5°C

SAMPLE RECEIPT FORM 1 Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 116H276
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7839 0075 5605 7	Recipient Sheri Lema
☐ EMAX Courier ☐ Client Delivery		Date 082416 Time 0900

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) (none)	☐ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 5.5 °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 130538506 SF outside	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

8/24/16 RB 8/24/16

☐ 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 _____ **SRF** _____ **PM** RB

Date 8/24/16 8/24/16 **Date** 8/24/16 **Date** 8/24/16

5.5°C

ORIGIN ID:GSTA (330) 840-9449
J.DEVAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 23AUG16
ACTWGT: 45.00 LB
CAD: 6990279/SSF01704
DIMS: 36x14x13 IN

BILL THIRD PARTY

Part # 156297-435 RIT2 10/15

TO **EMAX LAB INC**
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

TRK# 0201 **7839 0075 5657**

WED - 24 AUG 10:30A
PRIORITY OVERNIGHT

XH HHRA

DSR
90501
CA-US **LAX**

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H276

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H276

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of two (2) water samples were received on 08/24/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RIL003) and CCV(Datafile ID:RIL027). 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. SVH065WB - 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. SVH065WL/SVH065WC 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
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING

SDG NO. : 16H276
Instrument ID : T-0E9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVH065WB	1	NA	09/07/1610:09	08/29/1612:00	RIL004	RAL010	SVH065W	Method Blank
LCS1W	SVH065WL	1	NA	09/07/1610:20	08/29/1612:00	RIL005	RAL010	SVH065W	Lab Control Sample (LCS)
LCD1W	SVH065WC	1	NA	09/07/1610:36	08/29/1612:00	RIL006	RAL010	SVH065W	LCS Duplicate
JBERGW0012	H276-01	1.02	NA	09/07/1610:52	08/29/1612:00	RIL007	RAL010	SVH065W	Field Sample
JBERGW9000	H276-02	1	NA	09/07/1611:08	08/29/1612:00	RIL008	RAL010	SVH065W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/22/16
Project	: JBER GW SAMPLING	Date Received:	08/24/16
Batch No.	: 16H276	Date Extracted:	08/29/16 12:00
Sample ID:	JBERGW0012	Date Analyzed:	09/07/16 10:52
Lab Samp ID:	H276-01	Dilution Factor:	1.02
Lab File ID:	RIL007	Matrix :	WATER
Ext Btch ID:	SVH065W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	0.34J	0.51	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	31.9	40.80	78.3	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected	: 08/22/16
Project	: JBER GW SAMPLING	Date Received	: 08/24/16
Batch No.	: 16H276	Date Extracted	: 08/29/16 12:00
Sample ID	: JBERGW9000	Date Analyzed	: 09/07/16 11:08
Lab Samp ID	: H276-02	Dilution Factor	: 1
Lab File ID	: RIL008	Matrix	: WATER
Ext Btch ID	: SVH065W	% Moisture	: NA
Calib. Ref.	: RAL010	Instrument ID	: T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	0.37J	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	31.0	40.00	77.6	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	08/29/16
Batch No.	: 16H276	Date Extracted:	08/29/16 12:00
Sample ID:	MBLK1W	Date Analyzed:	09/07/16 10:09
Lab Samp ID:	SVH065WB	Dilution Factor:	1
Lab File ID:	RIL004	Matrix :	WATER
Ext Btch ID:	SVH065W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	36.5	40.00	91.3	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H276
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVH065WB	SVH065WL	SVH065WC		
LAB FILE ID:	RIL004	RIL005	RIL006		
DATE EXTRACTED:	08/29/1612:00	08/29/1612:00	08/29/1612:00	DATE COLLECTED:	NA
DATE ANALYZED:	09/07/1610:09	09/07/1610:20	09/07/1610:36	DATE RECEIVED:	08/29/16
PREP. BATCH:	SVH065W	SVH065W	SVH065W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	30.9	77	40.0	28.5	71	8	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	30.3	76	40.0	35.9	90	30-130

INITIAL CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H276

Lab File ID: RAL002 BFB Injection Date : 01/12/16

Instrument ID: TOE9 BFB Injection Time : 10:33

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.59
	LOWER LIMIT	528004	1.59
	SAMPLE ID		
1	SVE9A121	945510	2.09
2	SVE9A122	919219	2.09
3	SVE9A123	946724	2.09
4	SVE9A124	946102	2.09
5	SVE9A125	981248	2.09
6	SVE9A126	969591	2.08
7	SVE9A127	986337	2.09
8	SVE9A129	999724	2.08
9	SVE9A1210	1168668	2.10
10	ISVE9A121	1099692	2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc | Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: | SAS No.: SDG No.: 16H276
Lab File ID: RIL002 | BFB Injection Date : 09/07/16
Instrument ID: TOE9 | BFB Injection Time : 09:20
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.54
75	30.0 - 60.0% of mass 95	40.79
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.43
173	Less than 2.0% of mass 174	0.50(0.6)1
174	50.0- 100.0% of mass 95	86.85
175	5.0 - 9.0% of mass 174	6.96(8.0)1
176	95.0 - 101.0% of mass 174	87.07(100.3)1
177	5.0 - 9.0% of mass 176	5.34(6.1)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	SSTD020	CSVE9A1243	RIL003	09/07/16	09:52
2	MBLK1W	SVH065WB	RIL004	09/07/16	10:09
3	LCS1W	SVH065WL	RIL005	09/07/16	10:20
4	LCD1W	SVH065WC	RIL006	09/07/16	10:36
5	JBERGW0012	H276-01	RIL007	09/07/16	10:52
6	JBERGW9000	H276-02	RIL008	09/07/16	11:08
7	SSTD020	CSVE9A1244	RIL027	09/07/16	16:11

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16H276
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.26
	LOWER LIMIT	528004	1.92
	SAMPLE ID		
1	SSTD020	1407475	2.07
2	MBLK1W	875184	2.07
3	LCS1W	1116799	2.07
4	LCD1W	906535	2.07
5	JBERGW0012	948486	2.08
6	JBERGW9000	916399	2.08
7	SSTD020	1444320	2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL003
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/07/16 09:52

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-Dioxane-d8	20.000	0	1407475	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.048	-4.8	2387159	1.696	1.781	2.102	2.113	5.77				
3	Bromobenzene	19.601	-2.0	2896192	2.058	2.100	4.243	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL027
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/07/16 16:11

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	1444320	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.021	-4.9	2446223	1.694	1.781	2.102	2.113	5.77				
3	Bromobenzene	20.785	3.9	3151443	2.182	2.100	4.243	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL003.D Vial: 3
Acq On : 07 Sep 2016 09:52 Operator: KVu
Sample : CSVE9A1243 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 07 10:06:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	133	-0.01
2	T	1,4-Dioxane	20.000	19.048	4.8	127	-0.01
3	S	Bromobenzene	20.000	19.601	2.0	120	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL003.D Vial: 3
Acq On : 07 Sep 2016 09:52 Operator: KVu
Sample : CSVE9A1243 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 07 10:06:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	133	-0.01
2	T	1,4-Dioxane	1.781	1.696	4.8	127	-0.01
3	S	Bromobenzene	2.100	2.058	2.0	120	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL027.D Vial: 27
Acq On : 07 Sep 2016 16:11 Operator: KVu
Sample : CSVE9A1244 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 07:31:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	137	-0.01
2	T	1,4-Dioxane	20.000	19.021	4.9	130	-0.01
3	S	Bromobenzene	20.000	20.785	-3.9	131	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL027.D Vial: 27
Acq On : 07 Sep 2016 16:11 Operator: KVu
Sample : CSVE9A1244 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 07:31:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	137	-0.01
2	T	1,4-Dioxane	1.781	1.694	4.9	130	-0.01
3	S	Bromobenzene	2.100	2.182	-3.9	131	0.00

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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
	2	BFBE9A1201				
	3	SVE9A12 1				0.05 ppm 14 Dioxane
	4	2				.075
	5	3				.15
	6	4				.2
	7	5				.5
	8	6				1
	9	7				5
	10	8				20
	11	9				60
	12	10				100
	13	ISVE9A12 1				ICV
SVA001W	14	LOQ-01	1		x	
	15	LOD-01				
SVA002S	16	LOQ-02	1	x		
	17	LOD-02				
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

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.

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EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 9/7/16 9:20 End Date/Time: 9/7/16 16:11

ANALYTICAL BATCH: CSVE9A1243

Preparative Batch	Data File Name		Run ID	DF	Matrix S	Matrix W	Notes
	RIL001		IBE9A1243				
	↓	2	BFBE9A1243				
		3	CSVE9A1243				
SVH065W		4	SVH065WB	1		x	
↓		5	↓ WL			↓	
		6	↓ WC				
		7	16H276-01				
		8	↓ 02				
		9	16H302-01				
SVI002W		10	SVI002WB	1		x	
↓		11	↓ WL			↓	
		12	↓ WC				
		13	16H345-01				
		14	↓ 02				Bad injection
		15	↓ 03				
		16	↓ 04				
SVI011W		17	SVI011WB	1		x	
↓		18	↓ WL			↓	
		19	↓ WC				
		20	16I015-01				
		21	↓ 02				
		22	↓ 03				
		23	↓ 04				
		24	16I025-01				
↓		25	↓ 03				
SVI002W		26	16H345-02N			↓	
	↓	27	CSVE9A1244				
							KV 9/8/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV		
DCC	SS2C-14-30-02	20
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-28-03	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16I07

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KV

Date Disposed: 9/8/16

Disposed By: KV

This page is checked during data review.

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EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☒ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-093
Preparation Batch: SVH065W
Matrix: WATER
Micropipette ID: 100 ul (PE97C-03) ~
Micropipette ID: 1000 ul (PE00-01) ~

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1 ~
LCS/MS (1,4-Dioxane)	SS2B-12-24-02	1.0 ~
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	56056
Na_2SO_4	SWIB-003-07-12
H_2SO_4	~
NaOH	SPIB-08-09-01
Silica Sand	~
Silica Gel	~
Reagent Water	SWIA-006-02-07
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9703627A

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVH065WB			4
-WL			4
-WC			4
H276-01			4
-02			4
H302-01			4

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2		
3		
4	35	35
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: TW — Witnessed By: NAT
Standard Added By: TW — Checked By: ML
Extract Received By: TW 8/30/16 — Location: SE01 #17
Disposed By: — Disposed On:

FileID: SVH065W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVH065W01	SVH065WB	1000	ml	8/29/16 15:51	2	1000	2	1	
16SVH065W02	SVH065WL	1000	ml	8/29/16 15:51	2	1000	2	1	1, 4 - Dioxane
16SVH065W03	SVH065WC	1000	ml	8/29/16 15:51	2	1000	2	1	1, 4 - Dioxane
16SVH065W04	H276-01	980	ml	8/29/16 15:51	2	1000	2	1.02	yellow
16SVH065W05	H276-02	1000	ml	8/29/16 15:51	2	1000	2	1	yellow
16SVH065W06	H302-01	910	ml	8/29/16 15:51	2	1000	2	1.1	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 8/29/16 12:00 ☐ pHAdj(≤2) @

Prepared By: TWangc

☑ Extraction Ended @ 8/30/16 6:00 ☑ pHAdj(≥11) @ 8/29/16 12:00

Checked By: HL

Comments: volume entered after extraction started, pH 6-7, no Cl detected

Date 8/30/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16H345**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1004
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3034
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 09-19-2016
EMAX Batch No.: 16H345

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 08/31/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0020	H345-01	08/30/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW9001	H345-02	08/30/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0023	H345-03	08/30/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0022	H345-04	08/29/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

16H345

Date: 8-30-16

Page 1 of 1

COC #: GW-

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) J. DeVaughn (Printed Name) J. DeVaughn

	Station	Field Sample ID	Depth	Date	Time	Matrix	1,4-Dioxane (8270 SIM)	No. of Containers
							GW	
1	402WL-02	JBERGW00020	NA	8-30-16	0937	GW	2	2
2	402WL-02	JBERGW90001	NA	8-30-16	0937	GW	2	2
3	49WL-01	JBERGW00023	NA	8-30-16	1130	GW	2	2
4	045MW-03	JBERGW00022	NA	8-29-16	1505	GW	2	2

Requested Parameters

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

OBSERVATIONS, COMMENTS
SPECIAL INSTRUCTIONS

Relinquished by	Date	Received by	Date
Signature: J. DeVaughn	8/30/16	Signature	
Printed Name: J. DeVaughn	Time: 1300	Printed Name	Time
Company: HGL		Company	
Relinquished by	Date	Received by: Sherlema	Date: 08/31/16
Signature		Signature: Sherlema	
Printed Name	Time	Printed Name: Emat	Time: 0850
Company		Company	

Total No. of Containers (this page): 8
Total (entire COC): 8

Total # of coolers: 1
FedEx airbill #(s):

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

Temp=2.8°C

1691

SAMPLE RECEIPT FORM 1 Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 160345
☑ Fedex ☐ UPS ☐ GSO ☐ Others	782960914474	Recipient Shenlano
☐ EMAX Courier ☐ Client Delivery		Date 08-31-16 Time 0850

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	HCl	

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 2.8 °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* 130538506 Scanned	*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
3,4	5-6,7-8	D10		R8

e 8/31/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. RB 8/31/16

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	Informed Client.
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 SB 8/31/16 **Date** 8/31/16

SRF _____ **Date** 8/31/16

PM RB **Date** 8/31/16

ORIGIN ID:GSTA (330) 840-9449
J. DEVAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD

HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 30AUG16
ACTWGT: 54.50 LB
CAD: 6990279/SSF01704
DIMS: 25x13x13 IN

BILL THIRD PARTY

Part # 156287-435 REV# 10/15

TO **EMAX LABORATORIES INC**
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889
INV:
PO:
REF:
DEPT:

FedEx Express

J16201607050UV

TRK# 0201 **7839 6091 4474**

WED - 31 AUG 10:30A
PRIORITY OVERNIGHT

XH HHRA

DSR AHS
90501
CA-US **LAX**

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16H345

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16H345

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of four (4) water samples were received on 08/31/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RIL003) and CCV(Datafile ID:RIL027). 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. SVI002WB - 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. SVI002WL/SVI002WC 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
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING

SDG NO. : 16H345
Instrument ID : T-0E9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVI002WB	1	NA	09/07/1611:40	09/01/1611:00	RIL010	RAL010	SVI002W	Method Blank
LCS1W	SVI002WL	1	NA	09/07/1611:55	09/01/1611:00	RIL011	RAL010	SVI002W	Lab Control Sample (LCS)
LCD1W	SVI002WC	1	NA	09/07/1612:11	09/01/1611:00	RIL012	RAL010	SVI002W	LCS Duplicate
JBERGW0020	H345-01	1.09	NA	09/07/1612:27	09/01/1611:00	RIL013	RAL010	SVI002W	Field Sample
JBERGW0023	H345-03	1.03	NA	09/07/1612:59	09/01/1611:00	RIL015	RAL010	SVI002W	Field Sample
JBERGW0022	H345-04	1.05	NA	09/07/1613:15	09/01/1611:00	RIL016	RAL010	SVI002W	Field Sample
JBERGW9001	H345-02N	1.08	NA	09/07/1615:55	09/01/1611:00	RIL026	RAL010	SVI002W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/30/16
Project	: JBER GW SAMPLING	Date Received:	08/31/16
Batch No.	: 16H345	Date Extracted:	09/01/16 11:00
Sample ID:	JBERGW0020	Date Analyzed:	09/07/16 12:27
Lab Samp ID:	H345-01	Dilution Factor:	1.09
Lab File ID:	RIL013	Matrix :	WATER
Ext Btch ID:	SVI002W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.55	0.14	0.27

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	38.7	43.60	88.7	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 08/30/16
Project : JBER GW SAMPLING	Date Received: 08/31/16
Batch No. : 16H345	Date Extracted: 09/01/16 11:00
Sample ID: JBERGW9001	Date Analyzed: 09/07/16 15:55
Lab Samp ID: H345-02N	Dilution Factor: 1.08
Lab File ID: RIL026	Matrix : WATER
Ext Btch ID: SVI002W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.54	0.14	0.27

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	40.2	43.20	93.0	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 08/30/16
Project : JBER GW SAMPLING	Date Received: 08/31/16
Batch No. : 16H345	Date Extracted: 09/01/16 11:00
Sample ID: JBERGW0023	Date Analyzed: 09/07/16 12:59
Lab Samp ID: H345-03	Dilution Factor: 1.03
Lab File ID: RIL015	Matrix : WATER
Ext Btch ID: SVI002W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.52	0.13	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	39.4	41.20	95.7	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/29/16
Project	: JBER GW SAMPLING	Date Received:	08/31/16
Batch No.	: 16H345	Date Extracted:	09/01/16 11:00
Sample ID:	JBERGW0022	Date Analyzed:	09/07/16 13:15
Lab Samp ID:	H345-04	Dilution Factor:	1.05
Lab File ID:	RIL016	Matrix :	WATER
Ext Btch ID:	SVI002W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.52	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	35.3	42.00	83.9	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	09/01/16
Batch No.	: 16H345	Date Extracted:	09/01/16 11:00
Sample ID	: MBLK1W	Date Analyzed:	09/07/16 11:40
Lab Samp ID	: SVI002WB	Dilution Factor:	1
Lab File ID	: RIL010	Matrix :	WATER
Ext Btch ID	: SVI002W	% Moisture :	NA
Calib. Ref.	: RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	36.8	40.00	92.0	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16H345
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVI002WB	SVI002WL	SVI002WC		
LAB FILE ID:	RIL010	RIL011	RIL012		
DATE EXTRACTED:	09/01/1611:00	09/01/1611:00	09/01/1611:00	DATE COLLECTED:	NA
DATE ANALYZED:	09/07/1611:40	09/07/1611:55	09/07/1612:11	DATE RECEIVED:	09/01/16
PREP. BATCH:	SVI002W	SVI002W	SVI002W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	26.5	66	40.0	26.9	67	2	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	38.1	95	40.0	36.5	91	30-130

INITIAL CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16H345

Lab File ID: RAL002 BFB Injection Date : 01/12/16

Instrument ID: TOE9 BFB Injection Time : 10:33

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.59
	LOWER LIMIT	528004	1.59
	SAMPLE ID		
1	SVE9A121	945510	2.09
2	SVE9A122	919219	2.09
3	SVE9A123	946724	2.09
4	SVE9A124	946102	2.09
5	SVE9A125	981248	2.09
6	SVE9A126	969591	2.08
7	SVE9A127	986337	2.09
8	SVE9A129	999724	2.08
9	SVE9A1210	1168668	2.10
10	ISVE9A121	1099692	2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

dlc 02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc — Project: JBER GW SAMPLING
Lab Code: EMXT — Case No.: — SAS No.: — SDG No.: 16H345
Lab File ID: RIL002 — BFB Injection Date : 09/07/16
Instrument ID: TOE9 — BFB Injection Time : 09:20
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.54
75	30.0 - 60.0% of mass 95	40.79
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.43
173	Less than 2.0% of mass 174	0.50(0.6)1
174	50.0- 100.0% of mass 95	86.85
175	5.0 - 9.0% of mass 174	6.96(8.0)1
176	95.0 - 101.0% of mass 174	87.07(100.3)1
177	5.0 - 9.0% of mass 176	5.34(6.1)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	SSTD025	CSVE9A1243	RIL003	09/07/16	09:52
2	MBLK1W	SVI002WB	RIL010	09/07/16	11:40
3	LCS1W	SVI002WL	RIL011	09/07/16	11:55
4	LCD1W	SVI002WC	RIL012	09/07/16	12:11
5	JBERGW0020	H345-01	RIL013	09/07/16	12:27
6	JBERGW0023	H345-03	RIL015	09/07/16	12:59
7	JBERGW0022	H345-04	RIL016	09/07/16	13:15
8	JBERGW9001	H345-02N	RIL026	09/07/16	15:55
9	SSTD025	CSVE9A1244	RIL027	09/07/16	16:11

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16H345
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT	#
	12 HOUR STD	1056008		2.09	
	UPPER LIMIT	2112016		2.26	
	LOWER LIMIT	528004		1.92	
	SAMPLE ID				
1	SSTD020	1407475		2.07	
2	MBLK1W	901365		2.07	
3	LCS1W	889156		2.08	
4	LCD1W	921460		2.08	
5	JBERGW0020	906233		2.07	
6	JBERGW0023	941138		2.08	
7	JBERGW0022	952350		2.08	
8	JBERGW9001	926698		2.08	
9	SSTD020	1444320		2.07	

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL003
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/07/16 09:52

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-Dioxane-d8	20.000	0	1407475	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.048	-4.8	2387159	1.696	1.781	2.102	2.113	5.77				
3	Bromobenzene	19.601	-2.0	2896192	2.058	2.100	4.243	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL027
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/07/16 16:11

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	1444320	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.021	-4.9	2446223	1.694	1.781	2.102	2.113	5.77				
3	Bromobenzene	20.785	3.9	3151443	2.182	2.100	4.243	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL003.D Vial: 3
Acq On : 07 Sep 2016 09:52 Operator: KVu
Sample : CSVE9A1243 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 07 10:06:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	133	-0.01
2	T	1,4-Dioxane	20.000	19.048	4.8	127	-0.01
3	S	Bromobenzene	20.000	19.601	2.0	120	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL003.D Vial: 3
Acq On : 07 Sep 2016 09:52 Operator: KVu
Sample : CSVE9A1243 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 07 10:06:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	133	-0.01
2	T	1,4-Dioxane	1.781	1.696	4.8	127	-0.01
3	S	Bromobenzene	2.100	2.058	2.0	120	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL027.D Vial: 27
Acq On : 07 Sep 2016 16:11 Operator: KVu
Sample : CSVE9A1244 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 07:31:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	137	-0.01
2	T	1,4-Dioxane	20.000	19.021	4.9	130	-0.01
3	S	Bromobenzene	20.000	20.785	-3.9	131	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL027.D Vial: 27
Acq On : 07 Sep 2016 16:11 Operator: KVu
Sample : CSVE9A1244 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 07:31:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	137	-0.01
2	T	1,4-Dioxane	1.781	1.694	4.9	130	-0.01
3	S	Bromobenzene	2.100	2.182	-3.9	131	0.00

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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:37 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
↓	2	BFBE9A1201	↓			
↓	3	SVE9A12 1	↓			0.05 ppm 14 DIOX
↓	4	↓ 2	↓			.075
↓	5	↓ 3	↓			.15
↓	6	↓ 4	↓			.2
↓	7	↓ 5	↓			.5
↓	8	↓ 6	↓			1
↓	9	↓ 7	↓			5
↓	10	↓ 8	↓			20
↓	11	↓ 9	↓			60
↓	12	↓ 10	↓			100
↓	13	ISVE9A12 1	↓			ICV
SVA001W	14	LOQ - 01	1		x	
↓	15	LOD - 01	↓		↓	
SVA002S	16	LOQ - 02	1	x		
↓	17	LOD - 02	↓	↓		
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	100
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO000-01

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-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 9/7/16 9:20 End Date/Time: 9/7/16 16:11

ANALYTICAL BATCH: CSVE9A1243

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RIL001	IBE9A1243				
	2	BFBE9A1243				
	3	CSVE9A1243				
SVH065W	4	SVH065WB	1		x	
	5	WL				
	6	WC				
	7	16H276-01				
	8	02				
	9	16H302-01				
SVI002W	10	SVI002WB	1		x	
	11	WL				
	12	WC				
	13	16H345-01				
	14	02				Bad injection
	15	03				
	16	04				
SVI011W	17	SVI011WB	1		x	
	18	WL				
	19	WC				
	20	16IC15-01				
	21	02				
	22	03				
	23	04				
	24	16I025-01				
	25	03				
SVI002W	26	16H345-02N				
	27	CSVE9A1244				
						KV 9/8/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV		
DCC	SS2C-14-30-02	20
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-28-03	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16I07

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KV

Date Disposed: 9/8/16

Disposed By: KV

This page is checked during data review.

TOE3

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-093
Preparation Batch: SVI002W
Matrix: WATER
Micropipette ID: 1000µl: PE00-03
Micropipette ID: 100µl: PE97C-03

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1
LCS/MS (1,4DIXANE)	SS2B-12-24-02	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	56056
Na_2SO_4	SWIB-003-11-04
H_2SO_4	
NaOH	SPIB-08-09-01
Silica Sand	
Silica Gel	
Reagent Water	SWIA-006-02-07
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9703627A

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVI002WB			6
WL			6
WC			6
4345-01			6
-02			6
-03			6
-04			4

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2		
3		
4	35	35
5		
6	35	35
8		

Thermometer ID = SVOC-T1

Prepared By: JM — Witnessed By: TW
Standard Added By: JM — Checked By: ML
Extract Received By: DJ 9/2/16 — Location: SE01#8
Disposed By: — Disposed On:

FileID: SVI002W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVI002W01	SVI002WB	1000	ml	9/1/16 10:46	2	1000	2	1	
16SVI002W02	SVI002WL	1000	ml	9/1/16 10:46	2	1000	2	1	1,4Dioxine
16SVI002W03	SVI002WC	1000	ml	9/1/16 10:46	2	1000	2	1	1,4Dioxine
16SVI002W04	H345-01	920	ml	9/1/16 11:13	2	1000	2	1.09	light yellow
16SVI002W05	H345-02	930	ml	9/1/16 11:13	2	1000	2	1.08	yellow
16SVI002W06	H345-03	970	ml	9/1/16 11:13	2	1000	2	1.03	light orange
16SVI002W07	H345-04	950	ml	9/1/16 11:13	2	1000	2	1.05	light yellow

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 9/1/16 11:00 ☐ pHAdj(≤2) @ Prepared By: JMuert

☑ Extraction Ended @ 9/2/16 5:00 ☑ pHAdj(≥11) @ 9/1/16 11:00 Checked By: ML

Comments: volume,entered after extraction started,pH 6,cl not detected . Date 9/2/16

SOP EMAX-3520 Rev. 5

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16I015**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1004
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3034
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 09-19-2016
EMAX Batch No.: 161015

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 09/02/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0025	I015-01	08/31/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0010	I015-02	08/31/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0015	I015-03	09/01/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0014	I015-04	09/01/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

Date: 9/1/2016 Page 1 of 1

COC #: GW-10

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) J. DeVaughn (Printed Name) J. DeVaughn

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
1	OU5MW-31	JBERGW0025	NA	8/31/16	0908	GW	X	2	
2	AP-4413	JBERGW0010	NA	8/31/16	1533	GW	X	2	
3	OU4MW-11	JBERGW0015	NA	9/1/16	0932	GW	X	2	
4	GW-5A	JBERGW0014	NA	9/1/16	1040	GW	X	2	

Relinquished by: J. DeVaughn — Signature — Printed Name: J. DeVaughn — Company: HGL — Date: 9/1/16 — Time: 1300

Received by — Signature — Printed Name — Company — Date — Time

Relinquished by — Signature — Printed Name — Company — Date — Time

Received by: Shen Lama — Signature — Printed Name: Email — Company — Date: 090216 — Time: 0900

Total No. of Containers (this page): 8
Total (entire COC): 8

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

Total # of coolers: 1
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

Temp = 3.2°C

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 160105
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7839 8257 6638	Recipient Sheri Lana
☐ EMAX Courier ☐ Client Delivery		Date 090216 Time 0900

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	(Ice)	

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 3.2 °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 130538506 ST outside 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		R8

a 9/2/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NB 9/2/16

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	Informed client
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 SO Date 090216 / 9/2/16

SRF Date 9/2/16

PM Date 9/2/16

ORIGIN ID:GSTA (330) 840-9449
JEFF DEVAUGHN 1
HYDROGEOLOGIC INC.
581 BOSTON MILLS RD

HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 01SEP16
ACTWGT: 55.50 LB
CAD: 6990280/SSFO1704
DIMS: 26x14x14 IN

BILL THIRD PARTY

TO ATTN SAMPLE RECEIVING
EMAX LABORATORIES, INC
1835 W 205TH ST

TORRANCE CA 90501
(310) 618 8889
INV:
PO:
REF:
DEPT:

FedEx
Express

TRK# 0201 7839 8257 6638

FRI - 02 SEP 10:30A
PRIORITY OVERNIGHT

XH HHRA

DSR
90501
CA-US LAX

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16I015

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16I015

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of four (4) water samples were received on 09/02/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RIL003) and CCV(Datafile ID:RIL027). 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. SVI011WB - 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. SVI011WL/SVI011WC 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
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING

SDG NO. : 161015
Instrument ID : T-0E9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVI011WB	1	NA	09/07/1613:31	09/06/1612:30	RIL017	RAL010	SVI011W	Method Blank
LCS1W	SVI011WL	1	NA	09/07/1613:47	09/06/1612:30	RIL018	RAL010	SVI011W	Lab Control Sample (LCS)
LCD1W	SVI011WC	1	NA	09/07/1614:03	09/06/1612:30	RIL019	RAL010	SVI011W	LCS Duplicate
JBERGW0025	I015-01	1	NA	09/07/1614:20	09/06/1612:30	RIL020	RAL010	SVI011W	Field Sample
JBERGW0010	I015-02	1.05	NA	09/07/1614:35	09/06/1612:30	RIL021	RAL010	SVI011W	Field Sample
JBERGW0015	I015-03	1.09	NA	09/07/1614:51	09/06/1612:30	RIL022	RAL010	SVI011W	Field Sample
JBERGW0014	I015-04	1.05	NA	09/07/1615:07	09/06/1612:30	RIL023	RAL010	SVI011W	Field Sample

FN - Filename
% Moist - Percent Moisture

GSS

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	08/31/16
Project	: JBER GW SAMPLING	Date Received:	09/02/16
Batch No.	: 16I015	Date Extracted:	09/06/16 12:30
Sample ID:	JBERGW0025	Date Analyzed:	09/07/16 14:20
Lab Samp ID:	I015-01	Dilution Factor:	1
Lab File ID:	RIL020	Matrix :	WATER
Ext Btch ID:	SVI011W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	37.3	40.00	93.3	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 08/31/16
Project : JBER GW SAMPLING	Date Received: 09/02/16
Batch No. : 16I015	Date Extracted: 09/06/16 12:30
Sample ID: JBERGW0010	Date Analyzed: 09/07/16 14:35
Lab Samp ID: I015-02	Dilution Factor: 1.05
Lab File ID: RIL021	Matrix : WATER
Ext Btch ID: SVI011W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	0.61	0.52	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	32.8	42.00	78.1	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	09/01/16
Project	: JBER GW SAMPLING	Date Received:	09/02/16
Batch No.	: 16I015	Date Extracted:	09/06/16 12:30
Sample ID	: JBERGW0015	Date Analyzed:	09/07/16 14:51
Lab Samp ID	: I015-03	Dilution Factor:	1.09
Lab File ID	: RIL022	Matrix :	WATER
Ext Btch ID	: SVI011W	% Moisture :	NA
Calib. Ref.	: RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.55	0.14	0.27

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	38.2	43.60	87.7	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	09/01/16
Project	: JBER GW SAMPLING	Date Received:	09/02/16
Batch No.	: 16I015	Date Extracted:	09/06/16 12:30
Sample ID	: JBERGW0014	Date Analyzed:	09/07/16 15:07
Lab Samp ID	: I015-04	Dilution Factor:	1.05
Lab File ID	: RIL023	Matrix :	WATER
Ext Btch ID	: SVI011W	% Moisture :	NA
Calib. Ref.	: RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.52	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	38.0	42.00	90.5	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: NA
Project : JBER GW SAMPLING	Date Received: 09/06/16
Batch No. : 16I015	Date Extracted: 09/06/16 12:30
Sample ID: MBLK1W	Date Analyzed: 09/07/16 13:31
Lab Samp ID: SVI011WB	Dilution Factor: 1
Lab File ID: RIL017	Matrix : WATER
Ext Btch ID: SVI011W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	38.4	40.00	95.9	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16I015
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVI011WB	SVI011WL	SVI011WC		
LAB FILE ID:	RIL017	RIL018	RIL019		
DATE EXTRACTED:	09/06/1612:30	09/06/1612:30	09/06/1612:30	DATE COLLECTED:	NA
DATE ANALYZED:	09/07/1613:31	09/07/1613:47	09/07/1614:03	DATE RECEIVED:	09/06/16
PREP. BATCH:	SVI011W	SVI011W	SVI011W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	31.9	80	40.0	28.5	71	11	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	41.2	103	40.0	35.9	90	30-130

INITIAL CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16I015

Lab File ID: RAL002 BFB Injection Date : 01/12/16

Instrument ID: TOE9 BFB Injection Time : 10:33

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

2-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16I015

Lab File ID: RIL002 BFB Injection Date : 09/07/16

Instrument ID: TOE9 BFB Injection Time : 09:20

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.54
75	30.0 - 60.0% of mass 95	40.79
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.43
173	Less than 2.0% of mass 174	0.50(0.6)1
174	50.0- 100.0% of mass 95	86.85
175	5.0 - 9.0% of mass 174	6.96(8.0)1
176	95.0 - 101.0% of mass 174	87.07(100.3)1
177	5.0 - 9.0% of mass 176	5.34(6.1)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	SSTD020	CSVE9A1243	RIL003	09/07/16	09:52
2	MBLK1W	SVI011WB	RIL017	09/07/16	13:31
3	LCS1W	SVI011WL	RIL018	09/07/16	13:47
4	LCD1W	SVI011WC	RIL019	09/07/16	14:03
5	JBERGW0025	I015-01	RIL020	09/07/16	14:20
6	JBERGW0010	I015-02	RIL021	09/07/16	14:35
7	JBERGW0015	I015-03	RIL022	09/07/16	14:51
8	JBERGW0014	I015-04	RIL023	09/07/16	15:07
9	SSTD020	CSVE9A1244	RIL027	09/07/16	15:07

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16I015
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.26
	LOWER LIMIT	528004	1.92
	SAMPLE ID		
1	SSTD020	1407475	2.07
2	MBLK1W	874417	2.07
3	LCS1W	893550	2.07
4	LCD1W	954209	2.07
5	JBERGW0025	890079	2.08
6	JBERGW0010	949042	2.08
7	JBERGW0015	961703	2.08
8	JBERGW0014	961106	2.08
9	SSTD020	1444320	2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL003
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/07/16 09:52

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-Dioxane-d8	20.000	0	1407475	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.048	-4.8	2387159	1.696	1.781	2.102	2.113	5.77				
3	Bromobenzene	19.601	-2.0	2896192	2.058	2.100	4.243	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL027
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/07/16 16:11

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	1444320	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.021	-4.9	2446223	1.694	1.781	2.102	2.113	5.77				
3	Bromobenzene	20.785	3.9	3151443	2.182	2.100	4.243	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL003.D Vial: 3
Acq On : 07 Sep 2016 09:52 Operator: KVu
Sample : CSVE9A1243 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 07 10:06:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	133	-0.01
2	T	1,4-Dioxane	20.000	19.048	4.8	127	-0.01
3	S	Bromobenzene	20.000	19.601	2.0	120	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL003.D Vial: 3
Acq On : 07 Sep 2016 09:52 Operator: KVu
Sample : CSVE9A1243 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 07 10:06:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	133	-0.01
2	T	1,4-Dioxane	1.781	1.696	4.8	127	-0.01
3	S	Bromobenzene	2.100	2.058	2.0	120	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL027.D Vial: 27
Acq On : 07 Sep 2016 16:11 Operator: KVu
Sample : CSVE9A1244 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 07:31:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	137	-0.01
2	T	1,4-Dioxane	20.000	19.021	4.9	130	-0.01
3	S	Bromobenzene	20.000	20.785	-3.9	131	0.00

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

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Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL027.D Vial: 27
Acq On : 07 Sep 2016 16:11 Operator: KVu
Sample : CSVE9A1244 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 07:31:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	137	-0.01
2	T	1,4-Dioxane	1.781	1.694	4.9	130	-0.01
3	S	Bromobenzene	2.100	2.182	-3.9	131	0.00

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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
↓	2	BFBE9A1201	↓			
↓	3	SVE9A12 1	↓			0.05 ppm 14 Dio
↓	4	↓ 2	↓			.075
↓	5	3	↓			.15
↓	6	4	↓			.2
↓	7	5	↓			.5
↓	8	6	↓			1
↓	9	7	↓			5
↓	10	8	↓			20
↓	11	9	↓			60
↓	12	↓ 10	↓			100 ↓
↓	13	ISVE9A12 1	↓			ICV
SVA001W	14	LOQ - 01	1		X	
↓	15	LOD - 01	↓		↓	
SVA002S	16	LOQ - 02	1	X		
↓	↓ 17	LOD - 02	↓	↓		
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC / ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

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.

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EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 9/7/16 9:20 End Date/Time: 9/7/16 16:11

ANALYTICAL BATCH: CSVE9X1243

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RIL001	IBE9A1243				
	2	BFBE9A1243				
	3	CSVE9A1243				
SVH065W	4	SVH065WB	1		X	
	5	WL				
	6	WC				
	7	16H276-01				
	8	02				
	9	16H302-01				
SVI002W	10	SVI002WB	1		X	
	11	WL				
	12	WC				
	13	16H345-01				
	14	02				Bad injection
	15	03				
	16	04				
SVI011W	17	SVI011WB	1		X	
	18	WL				
	19	WC				
	20	16IC15-01				
	21	02				
	22	03				
	23	04				
	24	16I025-01				
	25	03				
SVI002W	26	16H345-02N				
	27	CSVE9A1244				
						KV 9/8/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name / ID / Conc. (mg/L)	
DFTPP	
INT. STD.	SS2A-13-01-15 1000
ICV	
DCC	SS2C-14-30-02 20
BENZIDINE	
APP 9	
APP 9 ADD	
BFB	SS2C-14-28-03 50
Solvent	ID
CH_2Cl_2	55219
DATA FILE	16I07
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KV

Date Disposed: 9/8/16

Disposed By: KV

This page is checked during data review.

TOE 3031

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☒ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-093

Preparation Batch: ~~SVE011W~~ NAT 9/6/16 SVI011W

Matrix: WATER

Micropipette ID: 100uL (PE97C-03) ✓

Micropipette ID: 1000uL (PE00-01) ✓

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1 ✓
LCS/MS (1,4-Dioxane)	SS2B-12-24-02	1.0 ✓
LCS/MS		
LCS/MS		
LCS/MS		
Reagent	**Lot# / ID**	
CH_2Cl_2	56056	
Na_2SO_4	SWIB-003-13-24	
H_2SO_4	—	
NaOH	SPIB-08-90-01	
Silica Sand	—	
Silica Gel	—	
Reagent Water	SWIA-006-02-07	
Residual Chlorine Strip	6271	
pH Strip	HC681919	
Filter Paper	9703627 A	

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVI011WB			1
-WL			1
-WL			1
I015-01			1
-02			1
-03			1
-04			2
I025-01			2
-02			2

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3		
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: TW Witnessed By: NAT

Standard Added By: TW Checked By: ML

Extract Received By: RV 9/7/16 Location: SE01#18

Disposed By: Disposed On:

FileID: SVI011W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVI011W01	SVI011WB	1000	ml	9/6/16 16:18	2	1000	2	1	
16SVI011W02	SVI011WL	1000	ml	9/6/16 16:18	2	1000	2	1	1, 4 - Dioxane
16SVI011W03	SVI011WC	1000	ml	9/6/16 16:18	2	1000	2	1	1, 4 - Dioxane
16SVI011W04	I015-01	1000	ml	9/6/16 16:18	2	1000	2	1	yellow
16SVI011W05	I015-02	950	ml	9/6/16 16:18	2	1000	2	1.05	dirty, yellow
16SVI011W06	I015-03	920	ml	9/6/16 16:18	2	1000	2	1.09	yellow
16SVI011W07	I015-04	950	ml	9/6/16 16:18	2	1000	2	1.05	
16SVI011W08	I025-01	1030	ml	9/6/16 16:18	2	1000	2	0.97	light yellow
16SVI011W09	I025-02	1050	ml	9/6/16 16:18	2	1000	2	0.95	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 9/6/16 12:30 ☐ pHAdj(≤2) @ Prepared By: TWangc

☑ Extraction Ended @ 9/7/16 6:30 ☑ pHAdj(≥11) @ 9/6/16 12:30 Checked By: ML

Comments: volume entered after extraction started, pH 5-6, no Cl detected Date 9/7/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16I025**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1010
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3032
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 09-16-2016
EMAX Batch No.: 16I025

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 09/03/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0009	I025-01	09/01/16	WATER	1,4-DIOXANE BY 8270 SIM
JBEREB0002	I025-02	09/02/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc. Exceeding Expectations

Laboratory Chain of Custody Record

16I025

Date: 9.2.16

Page 1 of 1

COC #: GW-

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) Alex Hedgepeth (Printed Name)

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers
						GW		
1	AP-3468	JBERGW0009	—	9.1.16	1526	W	2	
2	AP-3468	JBERERB0001	—	9.2.16	845	W	2	

OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS

Relinquished by	Date	Received by	Date	Total No. of Containers (this page):	
Signature	9.2.16	Signature		Total (entire COC):	
Printed Name: Alex Hedgepeth	Time: 900	Printed Name	Time		
Company: HGL		Company			
Relinquished by	Date	Received by	Date: 090316		
Signature		Signature: Shen-Tarra	Time: 1010		
Printed Name	Time	Printed Name: Emax			
Company		Company			

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

Total # of coolers:
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

Temp=2.0°C

1 of 1

Laboratory Chain of Custody Record

HGL HydroGeoLogic, Inc
Exceeding Expectations

Date: 9/2/2016 Page 1 of 1

COC #: GW-11

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) (Printed Name)

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
						GW		
AP-3468	JBERGW0009	NA	9/1/16	1526	GW	X	2	
AP-3468	JBEREB0002	NA	9/2/16	0830	GW	X	2	JBER-R equipment rinse blank
								Corrected Field Sample ID

Total No. of Containers (this page): 8
Total (entire COC): 8

Total # of coolers: 1
FedEx airbill #(s):

Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	
Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

SPECIAL INSTRUCTIONS:

Corrections to original signed COC shown in red text.

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 161025
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7839 - 8993 - 2453	Recipient Sun
☐ EMAX Courier ☐ Client Delivery		Date 090316 Time 1010

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 20 °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 130638505 Fluke/IR	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

cs 9/6/16

my for Richard 9/6/16

☐ 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** 9/6/16

SRF _____ **Date** 9/6/16

PM my for Richard **Date** 9/6/16

Ye Myint

From: DeVaughn, Jeffrey [jdevaughn@hgl.com]
Sent: Thursday, September 08, 2016 9:05 PM
To: Ye Myint
Subject: RE: Sample Logins for 16I025 - JBER GW
Attachments: JBER VI Study - Lab COC GW-11.pdf

Here is the corrected COC.

No additional groundwater samples will be shipped this week. We have 6 samples remaining overall, all field QA/QC is complete.

Jeff DeVaughn, CPG
Senior Project Manager
HydroGeoLogic, Inc.
581 Boston Mills Road
Suite 600
Hudson, Ohio 44236
jdevaughn@hgl.com

330-463-3306 (direct)
330-840-9449 (mobile)

From: DeVaughn, Jeffrey
Sent: Wednesday, September 07, 2016 6:28 AM
To: YMyint@emaxlabs.com
Subject: RE: Sample Logins for 16I025 - JBER GW

Ye, we will move forward with sample JBERGWEB0002 (currently shown as 0001). I will provide a corrected COC later today.

Jeff DeVaughn
HGL Hudson, Ohio
330-463-3304 (office)
330-840-9449 (mobile)

-----Original Message-----
From: Ye Myint [YMyint@emaxlabs.com]
Received: Tuesday, 06 Sep 2016, 5:44PM
To: DeVaughn, Jeffrey [jdevaughn@hgl.com]
Subject: Sample Logins for 16I025 - JBER GW

Hello Jeff,

Attached is the logins file for 16I025. Please review and let us know if there are any corrections required. Thanks.

Ye Myint
Project Manager
EMAX Laboratories, Inc.
1835W 205th St.
Torrance, CA 90501
Phone : (310) 618-8889 Ext. 121
Fax : 310-618-0818

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Ye Myint

From: DeVaughn, Jeffrey [jdevaughn@hgl.com]
Sent: Tuesday, September 06, 2016 10:28 PM
To: Ye Myint
Subject: RE: Sample Logins for 16I025 - JBER GW
Importance: High

There will be a correction to the COC for the sample shipment you received Saturday 9/3/16.

Please proceed with the analysis of sample JBERGW0009, as this sample is not at issue.

I am working to determine if sample JBEREB0001 should be analyzed (if you have not already done so). This sample is an equipment rinse blank and may have been collected incorrectly.
If we retain this sample, the Sample ID will need to be corrected to JBEREB0002. Sample JBEREB0001 was already collected previously.

I will provide you with a corrected COC either way on Wednesday evening.

I will let you know ASAP on Wednesday AM.

Jeff DeVaughn, CPG
Senior Project Manager
HydroGeoLogic, Inc.
581 Boston Mills Road
Suite 600
Hudson, Ohio 44236
jdevaughn@hgl.com

330-463-3306 (direct)
330-840-9449 (mobile)

From: Ye Myint [mailto:YMyint@emaxlabs.com]
Sent: Tuesday, September 06, 2016 5:44 PM
To: DeVaughn, Jeffrey <jdevaughn@hgl.com>
Subject: Sample Logins for 16I025 - JBER GW

Hello Jeff,

Attached is the logins file for 16I025. Please review and let us know if there are any corrections required.
Thanks.

Ye Myint
Project Manager
EMAX Laboratories, Inc.
1835W 205th St.
Torrance, CA 90501

Phone : (310) 618-8889 Ext. 121
Fax : 310-618-0818

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ORIGIN ID:GSTA (330) 840-9449
J DEVAUGHN
HYDROGEOLOGIC
581 BOSTON MILLS RD STE 600

HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 02SEP16
ACTWGT: 45.10 LB
CAD: 6990279/SSF01704
DIMS: 26x14x14 IN

BILL THIRD PARTY

TO EMAX LABORATORIES INC
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

TRK# 0201 7839 8993 2483

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO HHRA

DSR AHS
90501
CA-US LAX

100

Custody Sealed
Cooler

FedEx Home

Customer Support | Logout
Logged in as 1835w205th

FedEx InSight

Welcome | My Options | Find a Shipment | Inbound View | Outbound View | Third Party View | Customized Views

FedEx InSight ®

Shipment Detail

Tracking Number
783989932483

Shipment Information

Status	Departed FedEx location; ANCHORAGE, AK
Ship (P/U) Date	09/02/2016
Est. Delivery Date	09/03/2016
Service Type	FedEx Priority Overnight
Number of Pieces	1
Weight	46 lb.

Shipment Reference

Reference Type	Description

Shipper

J DeVaughn
HydroGeoLogic
581 BOSTON MILLS RD STE 600
HUDSON, OH 44236
US
3308409449

Recipient

EMAX Laboratories Inc
Attn: Sample Receiving
1835 W 205TH ST
TORRANCE, CA 90501
US
3106188889

Associated Shipments | Shipment Description | Tracking Results

Associated Tracking Numbers

All Statuses

No Results Found

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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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16I025

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16I025

METHOD SW 3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of two (2) water samples were received on 09/03/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW 3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RIL003) and CCV(Datafile ID:RIL027). 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. SVI011WB - 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. SVI011WL/SVI011WC 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
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING
SDG NO. : 161025
Instrument ID : T-0E9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVI011WB	1	NA	09/07/1613:31	09/06/1612:30	RIL017	RAL010	SVI011W	Method Blank
LCS1W	SVI011WL	1	NA	09/07/1613:47	09/06/1612:30	RIL018	RAL010	SVI011W	Lab Control Sample (LCS)
LCD1W	SVI011WC	1	NA	09/07/1614:03	09/06/1612:30	RIL019	RAL010	SVI011W	LCS Duplicate
JBERGW0009	I025-01	0.97	NA	09/07/1615:23	09/06/1612:30	RIL024	RAL010	SVI011W	Field Sample
JBEREB0002	I025-02	0.95	NA	09/07/1615:39	09/06/1612:30	RIL025	RAL010	SVI011W	Field Sample

FN - Filename
% Moist - Percent Moisture

ESS

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	09/01/16
Project	: JBER GW SAMPLING	Date Received:	09/03/16
Batch No.	: 16I025	Date Extracted:	09/06/16 12:30
Sample ID	: JBERGW0009	Date Analyzed:	09/07/16 15:23
Lab Samp ID	: I025-01	Dilution Factor:	0.97
Lab File ID	: RIL024	Matrix :	WATER
Ext Btch ID	: SVI011W	% Moisture :	NA
Calib. Ref.	: RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.49	0.13	0.24

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	36.6	38.80	94.4	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	09/02/16
Project	: JBER GW SAMPLING	Date Received:	09/03/16
Batch No.	: 16I025	Date Extracted:	09/06/16 12:30
Sample ID:	JBEREB0002	Date Analyzed:	09/07/16 15:39
Lab Samp ID:	I025-02	Dilution Factor:	0.95
Lab File ID:	RIL025	Matrix :	WATER
Ext Btch ID:	SVI011W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.48	0.12	0.24

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	28.5	38.00	75.1	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: NA
Project : JBER GW SAMPLING	Date Received: 09/06/16
Batch No. : 161025	Date Extracted: 09/06/16 12:30
Sample ID: MBLK1W	Date Analyzed: 09/07/16 13:31
Lab Samp ID: SVI011WB	Dilution Factor: 1
Lab File ID: RIL017	Matrix : WATER
Ext Btch ID: SVI011W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	38.4	40.00	95.9	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 161025
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVI011WB	SVI011WL	SVI011WC		
LAB FILE ID:	RIL017	RIL018	RIL019		
DATE EXTRACTED:	09/06/1612:30	09/06/1612:30	09/06/1612:30	DATE COLLECTED:	NA
DATE ANALYZED:	09/07/1613:31	09/07/1613:47	09/07/1614:03	DATE RECEIVED:	09/06/16
PREP. BATCH:	SVI011W	SVI011W	SVI011W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	31.9	80	40.0	28.5	71	11	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	41.2	103	40.0	35.9	90	30-130

INITIAL CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16I025
Lab File ID: RAL002 BFB Injection Date : 01/12/16
Instrument ID: TOE9 BFB Injection Time : 10:33
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		IS1(DD8) RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

sw 02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 161025

Lab File ID: RIL002 BFB Injection Date : 09/07/16

Instrument ID: TOE9 BFB Injection Time : 09:20

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.54
75	30.0 - 60.0% of mass 95	40.79
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.43
173	Less than 2.0% of mass 174	0.50(0.6)1
174	50.0- 100.0% of mass 95	86.85
175	5.0 - 9.0% of mass 174	6.96(8.0)1
176	95.0 - 101.0% of mass 174	87.07(100.3)1
177	5.0 - 9.0% of mass 176	5.34(6.1)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	SSTD020	CSVE9A1243	RIL003	09/07/16	09:52
2	MBLK1W	SVI011WB	RIL017	09/07/16	13:31
3	LCS1W	SVI011WL	RIL018	09/07/16	13:47
4	LCD1W	SVI011WC	RIL019	09/07/16	14:03
5	JBERGW0009	I025-01	RIL024	09/07/16	15:23
6	JBEREB0002	I025-02	RIL025	09/07/16	15:39
7	SSTD020	CSVE9A1244	RIL027	09/07/16	16:11

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16I025
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.26
	LOWER LIMIT	528004		1.92
	SAMPLE ID			
1	SSTD025	1407475		2.07
2	MBLK1W	874417		2.07
3	LCS1W	893550		2.07
4	LCD1W	954209		2.07
5	JBERGW0009	938997		2.08
6	JBEREB0002	913369		2.08
7	SSTD025	1444320		2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL003
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/07/16 09:52

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-Dioxane-d8	20.000	0	1407475	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.048	-4.8	2387159	1.696	1.781	2.102	2.113	5.77				
3	Bromobenzene	19.601	-2.0	2896192	2.058	2.100	4.243	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL027
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/07/16 16:11

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	1444320	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.021	-4.9	2446223	1.694	1.781	2.102	2.113	5.77				
3	Bromobenzene	20.785	3.9	3151443	2.182	2.100	4.243	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL003.D Vial: 3
Acq On : 07 Sep 2016 09:52 Operator: KVu
Sample : CSVE9A1243 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 07 10:06:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	133	-0.01
2	T	1,4-Dioxane	20.000	19.048	4.8	127	-0.01
3	S	Bromobenzene	20.000	19.601	2.0	120	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL003.D Vial: 3
Acq On : 07 Sep 2016 09:52 Operator: KVu
Sample : CSVE9A1243 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 07 10:06:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	133	-0.01
2	T	1,4-Dioxane	1.781	1.696	4.8	127	-0.01
3	S	Bromobenzene	2.100	2.058	2.0	120	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL027.D Vial: 27
Acq On : 07 Sep 2016 16:11 Operator: KVu
Sample : CSVE9A1244 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 07:31:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	137	-0.01
2	T	1,4-Dioxane	20.000	19.021	4.9	130	-0.01
3	S	Bromobenzene	20.000	20.785	-3.9	131	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I07\RIL027.D Vial: 27
Acq On : 07 Sep 2016 16:11 Operator: KVu
Sample : CSVE9A1244 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 08 07:31:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	137	-0.01
2	T	1,4-Dioxane	1.781	1.694	4.9	130	-0.01
3	S	Bromobenzene	2.100	2.182	-3.9	131	0.00

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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
↓	2	BFBE9A1201	↓			
↓	3	SVE9A12 1	↓			0.05 ppm 14 Dioxane
↓	4	↓ 2	↓			.075
↓	5	3	↓			.15
↓	6	4	↓			.2
↓	7	5	↓			.5
↓	8	6	↓			1
↓	9	7	↓			5
↓	10	8	↓			20
↓	11	9	↓			60
↓	12	↓ 10	↓			100 ↓
↓	13	ISVE9A12 1	↓			ICV
SVA001W	14	LOQ-01	1		X	
↓	15	LOD-01	↓		↓	
SVA002S	16	LOQ-02	1	X		
↓	↓ 17	LOD-02	↓	↓		
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

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.

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EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 9/7/16 9:20 End Date/Time: 9/7/16 16:11

ANALYTICAL BATCH: CSVE9A1243

Preparative Batch	Data File Name		Run ID	DF	Matrix S	Matrix W	Notes
	RIL001		IBE9A1243				
	↓	2	BFBE9A1243				
		3	CSVE9A1243				
SVH065W		4	SVH065WB	1		x	
↓		5	↓ WL			↓	
		6	↓ WC				
		7	16H276-01				
		8	↓ 02				
		9	16H302-01				
SVI002W		10	SVI002WB	1		x	
↓		11	↓ WL			↓	
		12	↓ WC				
		13	16H345-01				
		14	↓ 02				Bad injection
		15	↓ 03				
		16	↓ 04			↓	
SVI011W		17	SVI011WB	1		x	
↓		18	↓ WL			↓	
		19	↓ WC				
		20	16IC15-01				
		21	↓ 02				
		22	↓ 03				
		23	↓ 04				
		24	16I025-01				
		25	↓ 03				
SVI002W		26	16H345-02N			↓	
	↓	27	CSVE9A1244				
							KV 9/8/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV		
DCC	SS2C-14-30-02	20
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-28-03	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16I07

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KV

Date Disposed: 9/8/16

Disposed By: KV

This page is checked during data review.

SOP: 8270

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☒ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-093

Preparation Batch: ~~SVE011W~~ NAT 9/6/16 SVI011W

Matrix: WATER

Micropipette ID: 100ul (PE97C-03) ✓

Micropipette ID: 1000ul (PE00-01) ✓

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1 ✓
LCS/MS(1,4-Dioxane)	SS2B-12-24-02	1.0 ✓
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	56056
Na_2SO_4	SWIB-003-13-24
H_2SO_4	—
NaOH	SPIB-08-90-01
Silica Sand	—
Silica Gel	—
Reagent Water	SWIA-006-02-07
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9703627 A

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVI011WB			1
-WL			1
-WL			1
I015-01			1
-02			1
-03			1
-04			2
I025-01			2
-02			2

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3		
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: TW Witnessed By: NAT

Standard Added By: TW Checked By: ML

Extract Received By: KV 9/7/16 Location: SE01#18

Disposed By: Disposed On:

FileID: SVI011W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVI011W01	SVI011WB	1000	ml	9/6/16 16:18	2	1000	2	1	
16SVI011W02	SVI011WL	1000	ml	9/6/16 16:18	2	1000	2	1	1, 4 - Dioxane
16SVI011W03	SVI011WC	1000	ml	9/6/16 16:18	2	1000	2	1	1, 4 - Dioxane
16SVI011W04	I015-01	1000	ml	9/6/16 16:18	2	1000	2	1	yellow
16SVI011W05	I015-02	950	ml	9/6/16 16:18	2	1000	2	1.05	dirty, yellow
16SVI011W06	I015-03	920	ml	9/6/16 16:18	2	1000	2	1.09	yellow
16SVI011W07	I015-04	950	ml	9/6/16 16:18	2	1000	2	1.05	
16SVI011W08	I025-01	1030	ml	9/6/16 16:18	2	1000	2	0.97	light yellow
16SVI011W09	I025-02	1050	ml	9/6/16 16:18	2	1000	2	0.95	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 9/6/16 12:30 ☐ pHAdj(≤2) @

Prepared By: TWangc

☑ Extraction Ended @ 9/7/16 6:30 ☑ pHAdj(≥11) @ 9/6/16 12:30

Checked By: ML

Comments: volume entered after extraction started, pH 5-6, no Cl detected

Date 9/7/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16I157**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1007
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3076
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 10-11-2016
EMAX Batch No.: 16I157

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 09/17/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0002	I157-01	09/15/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0004	I157-02	09/15/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0031	I157-03	09/16/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

Corrected COC Recieved 9/19/16

Date: 9/16/2016 Page 1 of 1

COC #: GW-12

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) (Printed Name)

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
						GW		
AP-4344	JBERGW0002	NA	9/15/16	1026	GW	X	2	Sample time corrected
AP-4350	JBERGW0004	NA	9/15/16	1153	GW	X	2	
OU5MW-44	JBERGW0031	NA	9/16/16	1010	GW	X	2	

Total No. of Containers (this page): 6
Total (entire COC): 6

Total # of coolers: 1
FedEx airbill #(s):

Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	
Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

SPECIAL INSTRUCTIONS:

Corrections to original signed COC shown in red text.

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

TOTAL

HGL HydroGeoLogic, Inc
Exceeding Expectations

Laboratory Chain of Custody Record

16I157

Date: 9/16/2016

Page 1 of 1

COC #: GW- 12

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) (Printed Name) Pete Arroyo

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
						GW	GW		
1	AP-4344	JBERGW0002	NA	9/15/16	0945	GW	X	2	
2	AP-4350	JBERGW0004	NA	9/15/16	1153	GW	X	2	
3	OU5MW-44	JBERGW0031	NA	9/16/16	1010	GW	X	2	

Total No. of Containers (this page): 6
Total (entire COC): 6

Total # of coolers: 1
FedEx airbill #(s):

Relinquished by	Date	Received by	Date
Signature: Pete Arroyo	9/16/16	Signature:	
Printed Name: Pete Arroyo	Time: 1200	Printed Name:	Time
Company: HGL		Company:	
Relinquished by	Date	Received by	Date
Signature:		Signature:	9/17/16
Printed Name:	Time	Printed Name: Miguel Limon	Time: 11:10
Company:		Company: EMAX	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

1092

T-2.4°C

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 166157
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7841 0785 4159	Recipient Miguel Lemos
☐ EMAX Courier ☐ Client Delivery		Date 09/7/16 Time 1110

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	(Ice)	

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 2.4 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	A - S/N 130538506 Spec 9/9/16	B - S/N 140252070	C - S/N 140252067	D - S/N 150553630	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	D7	per label: 1026 (COC: 0945)	R8
1	1	D7	per label: 9116/2015 (COC 9/15/16)	R1 (9/15/16)
3	5	D10		

9/19/16 ym 9/20/16

☐ 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
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

Code	Description-Sample Management
R1	Proceed as indicated in ☒ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	Times on label is correct.
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling Date 9/19/16 9/19/16

SRF Date 9/20/16

PM for RB Date 9/20/16

Ye Myint

From: DeVaughn, Jeffrey [jdevaughn@hgl.com]
Sent: Monday, September 19, 2016 8:22 PM
To: Ye Myint
Cc: Linh Pham; Hanh Bui
Subject: RE: COC/SRF for 16I157 - JBER GW
Attachments: JBER VI Study - Lab COC GW-12.pdf

Hi Ye,

Please see the corrected COC attached. We have 3 wells remaining to sample on the project.

Jeff DeVaughn, CPG
Senior Project Manager
HydroGeoLogic, Inc.
581 Boston Mills Road
Suite 600
Hudson, Ohio 44236
jdevaughn@hgl.com

330-463-3306 (direct)
330-840-9449 (mobile)

From: Ye Myint [mailto:YMyint@emaxlabs.com]
Sent: Monday, September 19, 2016 6:18 PM
To: DeVaughn, Jeffrey <jdevaughn@hgl.com>
Cc: Linh Pham <LPham@emaxlabs.com>; Hanh Bui <HDBui@emaxlabs.com>
Subject: COC/SRF for 16I157 - JBER GW

Hello Jeff,

Attached are the COC and SRF for samples received last Saturday. Could you please verify the collections date and time for sample AP-4344?

Time on Label - 10:26 (COC: 0945)
Date on Label - 9/16/15 (COC: 9/15/16)

Thanks.

Ye Myint
Project Manager
EMAX Laboratories, Inc.
1835W 205th St.
Torrance, CA 90501
Phone : (310) 618-8889 Ext. 121
Fax : 310-618-0818

Consider the Environment before printing this email.

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ORIGIN ID:GSTA (330) 849 9449
J.DEVAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 16SEP16
ACTWGT: 53.80 LB
CAD: 6990280/SSF01204
DIMS: 26x15x14 IN

BILL THIRD PARTY

10 EMAX LABORATORIES INC
ATTN: SAMPLE RECEIVING
1835 W 205ST ST

TORRANCE CA 90501

(310) 618--8889 REF:
INV:
PO: DEPT:

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 7841 0785 4159

DSR
90501
CA-US LAX

XO HHRA

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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16I157

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16I157

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of three (3) water samples were received on 09/17/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RIL049) and CCV(Datafile ID:RIL056). 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. SVI043WB - 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. SVI043WL/SVI043WC 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
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING
SDG NO. : 161157
Instrument ID : T-OE9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVI043WB	1	NA	09/23/1610:33	09/21/1612:30	RIL050	RAL010	SVI043W	Method Blank
LCS1W	SVI043WL	1	NA	09/23/1610:44	09/21/1612:30	RIL051	RAL010	SVI043W	Lab Control Sample (LCS)
LCD1W	SVI043WC	1	NA	09/23/1611:00	09/21/1612:30	RIL052	RAL010	SVI043W	LCS Duplicate
JBERGW0002	I157-01	1.06	NA	09/23/1611:16	09/21/1612:30	RIL053	RAL010	SVI043W	Field Sample
JBERGW0004	I157-02	1.06	NA	09/23/1611:32	09/21/1612:30	RIL054	RAL010	SVI043W	Field Sample
JBERGW0031	I157-03	1.06	NA	09/23/1611:47	09/21/1612:30	RIL055	RAL010	SVI043W	Field Sample

FN - Filename
% Moist - Percent Moisture

3052

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	09/15/16
Project	: JBER GW SAMPLING	Date Received:	09/17/16
Batch No.	: 16I157	Date Extracted:	09/21/16 12:30
Sample ID:	JBERGW0002	Date Analyzed:	09/23/16 11:16
Lab Samp ID:	I157-01	Dilution Factor:	1.06
Lab File ID:	RIL053	Matrix :	WATER
Ext Btch ID:	SVI043W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.53	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	28.5	42.40	67.1	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

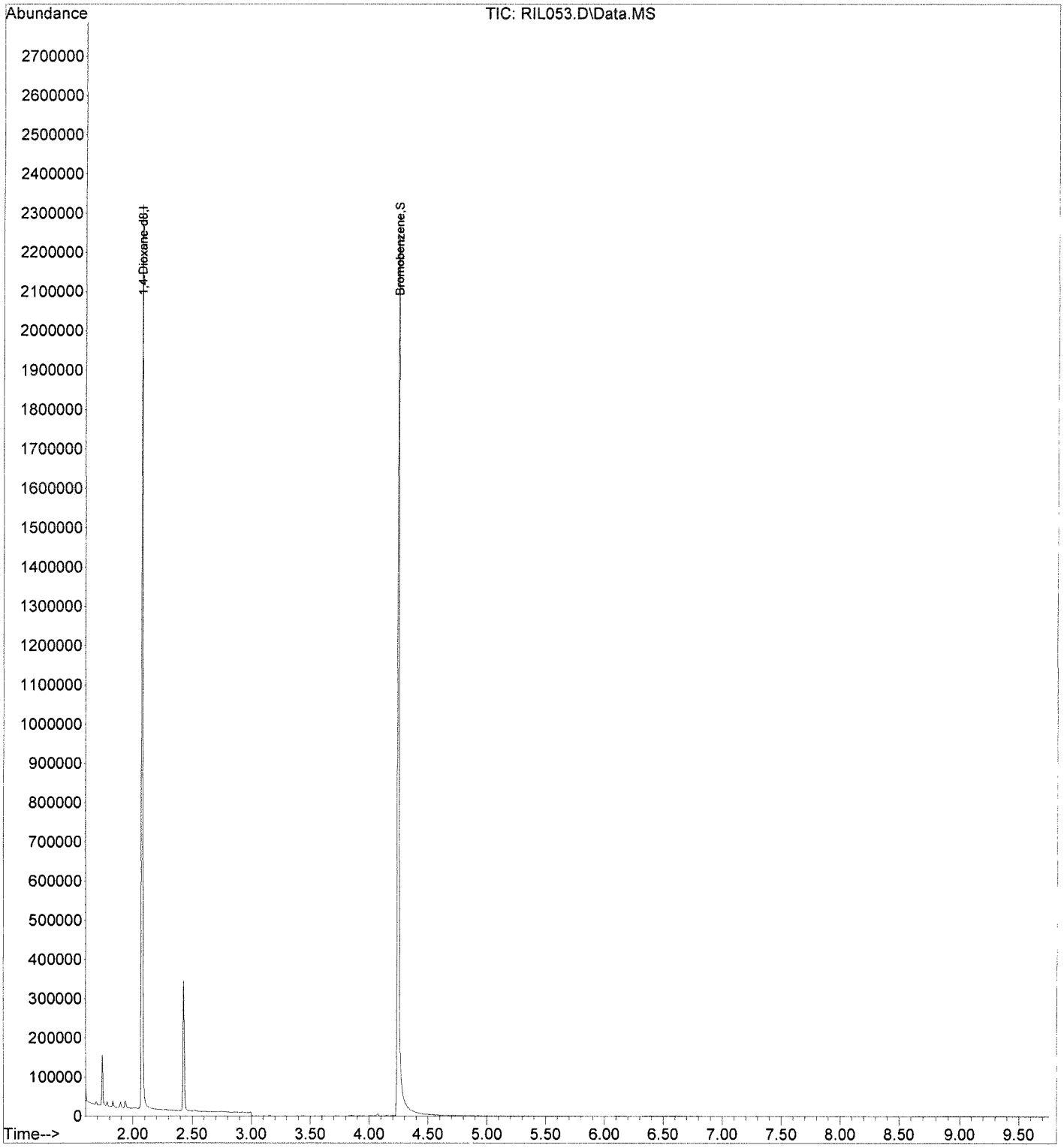
Data File : C:\msdchem\1\DATA\16I23\RIL053.D Vial: 7
Acq On : 23 Sep 2016 11:16 Operator: KVu
Sample : 16I157-01 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 12:22:18 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.077	96	904464	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.244	77	1274475	13.42	ppm	0.00
Spiked Amount 20.000			Recovery = 67.10%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16I23\RIL053.D Vial: 7
Acq On : 23 Sep 2016 11:16 Operator: KVu
Sample : 16I157-01 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 12:22:18 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	09/15/16
Project	: JBER GW SAMPLING	Date Received:	09/17/16
Batch No.	: 16I157	Date Extracted:	09/21/16 12:30
Sample ID:	JBERGW0004	Date Analyzed:	09/23/16 11:32
Lab Samp ID:	I157-02	Dilution Factor:	1.06
Lab File ID:	RIL054	Matrix :	WATER
Ext Btch ID:	SVI043W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.53	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	27.9	42.40	65.9	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

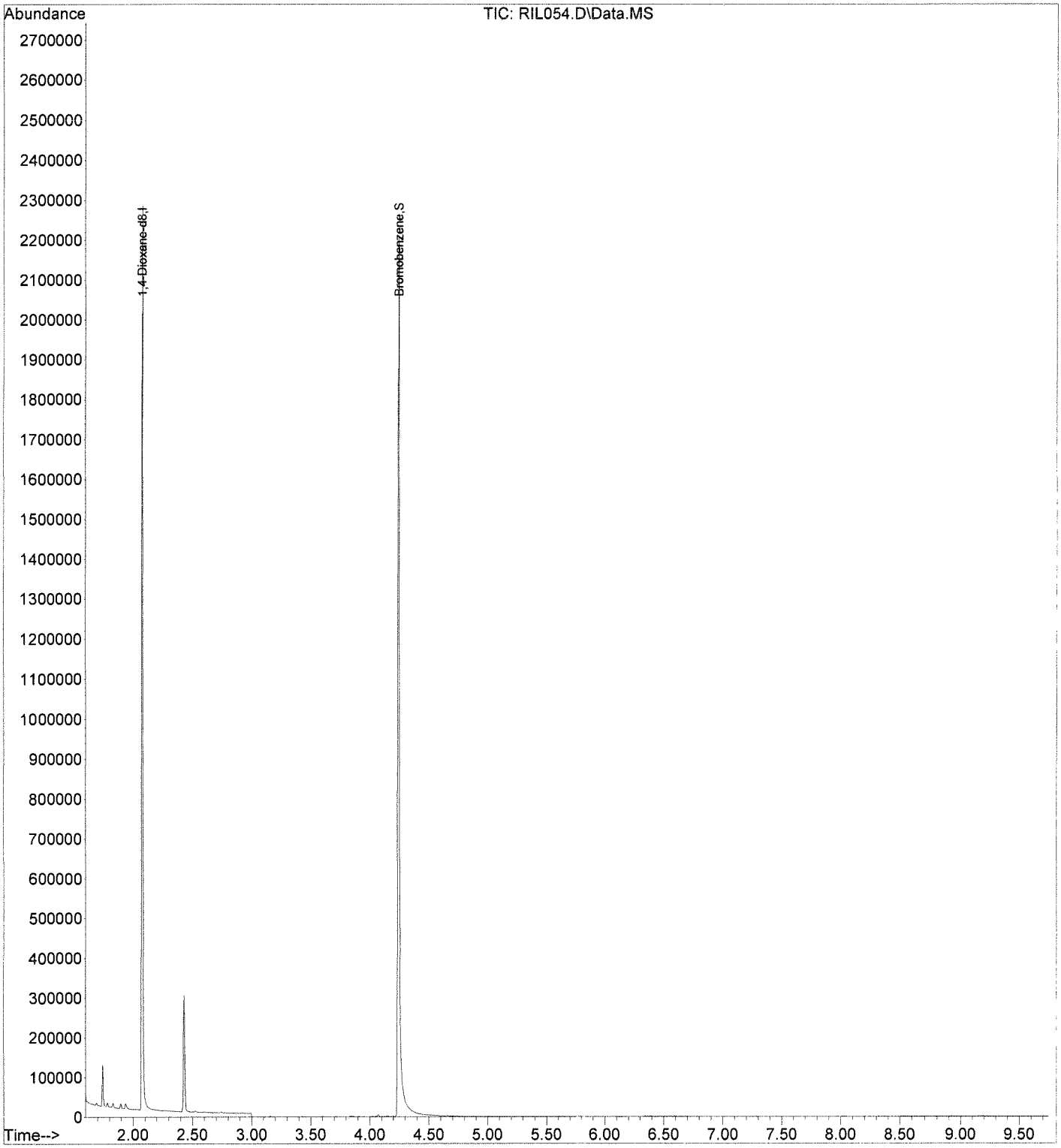
Data File : C:\msdchem\1\DATA\16I23\RIL054.D Vial: 8
Acq On : 23 Sep 2016 11:32 Operator: KVu
Sample : 16I157-02 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 12:22:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.077	96	892633	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.244	77	1234270	13.17	ppm	0.00
Spiked Amount 20.000			Recovery =	65.85%		
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16I23\RIL054.D Vial: 8
Acq On : 23 Sep 2016 11:32 Operator: KVu
Sample : 16I157-02 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 12:22:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 09/16/16
Project : JBER GW SAMPLING	Date Received: 09/17/16
Batch No. : 16I157	Date Extracted: 09/21/16 12:30
Sample ID: JBERGW0031	Date Analyzed: 09/23/16 11:47
Lab Samp ID: I157-03	Dilution Factor: 1.06
Lab File ID: RIL055	Matrix : WATER
Ext Btch ID: SVI043W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.53	0.14	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	24.5	42.40	57.8	30-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

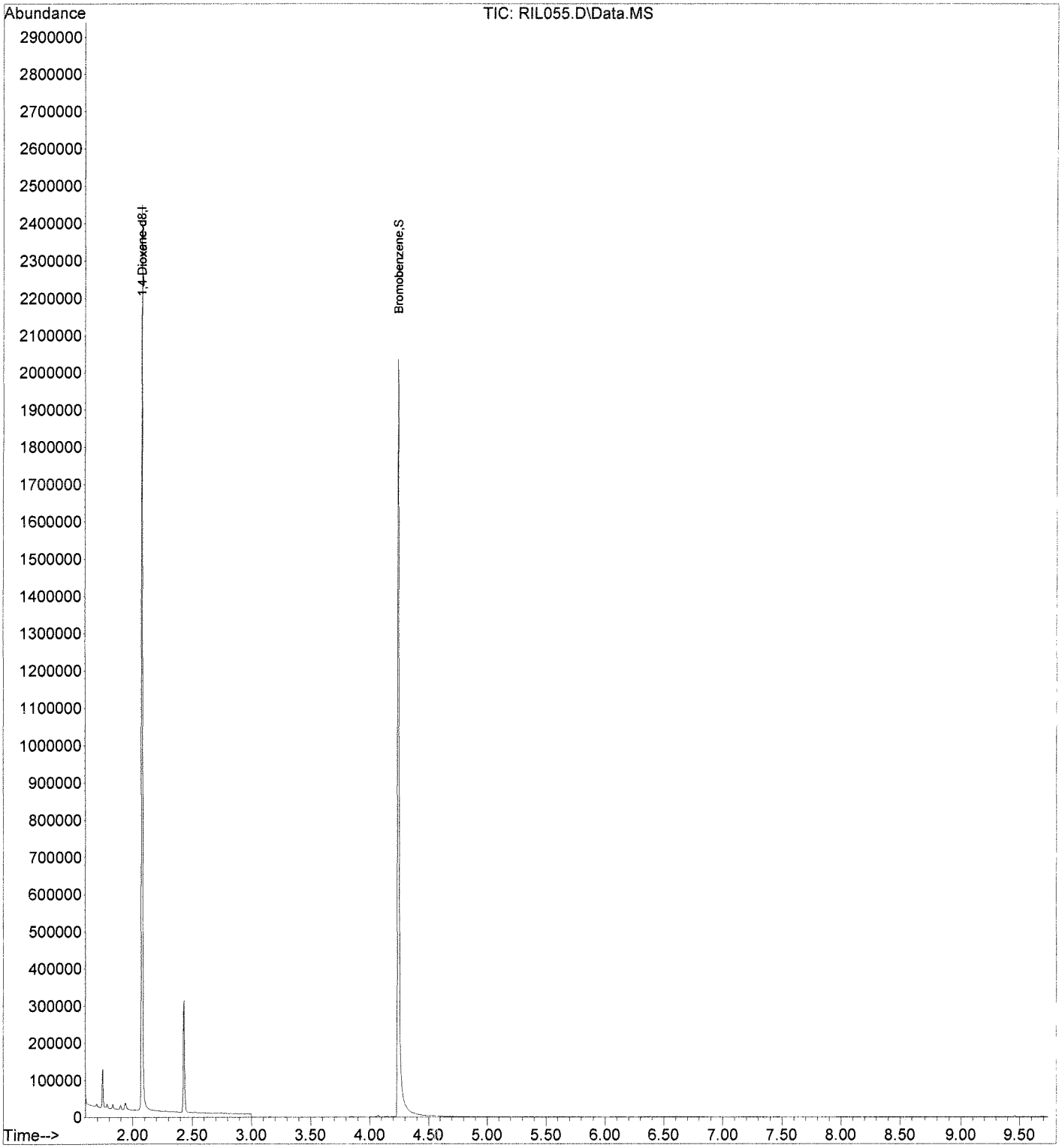
Data File : C:\msdchem\1\DATA\16I23\RIL055.D Vial: 9
Acq On : 23 Sep 2016 11:47 Operator: KVu
Sample : 16I157-03 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 12:22:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.077	96	952199	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.243	77	1154737	11.55	ppm	0.00
Spiked Amount 20.000			Recovery = 57.75%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16I23\RIL055.D Vial: 9
Acq On : 23 Sep 2016 11:47 Operator: KVu
Sample : 16I157-03 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 12:22:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: NA
Project : JBER GW SAMPLING	Date Received: 09/21/16
Batch No. : 16I157	Date Extracted: 09/21/16 12:30
Sample ID: MBLK1W	Date Analyzed: 09/23/16 10:33
Lab Samp ID: SVI043WB	Dilution Factor: 1
Lab File ID: RIL050	Matrix : WATER
Ext Btch ID: SVI043W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-0E9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	26.9	40.00	67.4	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 161157
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVI043WB	SVI043WL	SVI043WC		
LAB FILE ID:	RIL050	RIL051	RIL052		
DATE EXTRACTED:	09/21/1612:30	09/21/1612:30	09/21/1612:30	DATE COLLECTED:	NA
DATE ANALYZED:	09/23/1610:33	09/23/1610:44	09/23/1611:00	DATE RECEIVED:	09/21/16
PREP. BATCH:	SVI043W	SVI043W	SVI043W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	22.0	55	40.0	22.8	57	3	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	27.1	68	40.0	28.9	72	30-130

QC DATA

Quantitation Report (QT Reviewed)

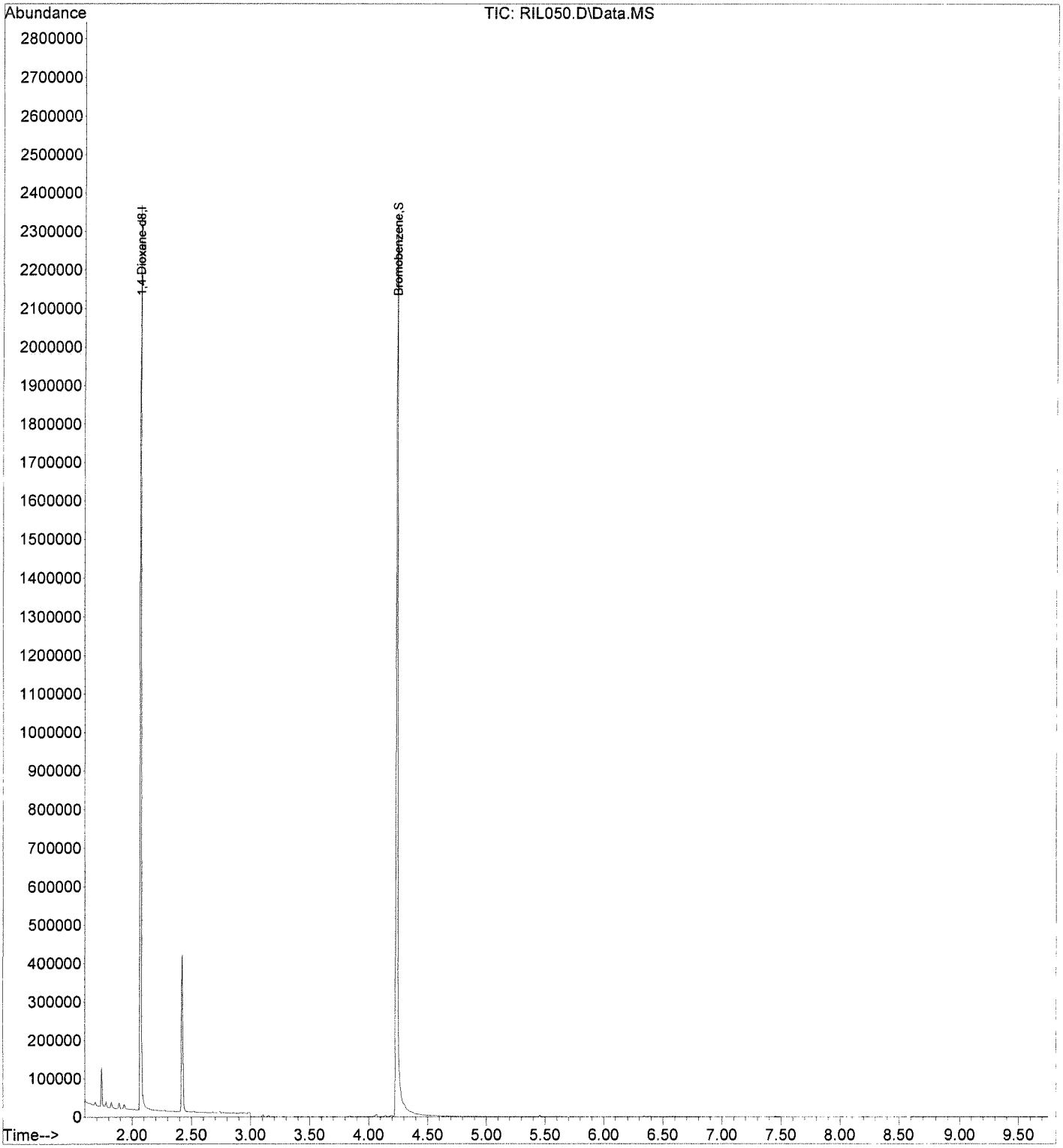
Data File : C:\msdchem\1\DATA\16I23\RIL050.D Vial: 4
Acq On : 23 Sep 2016 10:33 Operator: KVu
Sample : SVI043WB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 10:48:40 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.072	96	916699	20.00	ppm	-0.02
System Monitoring Compounds						
3) Bromobenzene	4.238	77	1296306	13.47	ppm	0.00
Spiked Amount 20.000			Recovery =	67.35%		
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16I23\RIL050.D Vial: 4
Acq On : 23 Sep 2016 10:33 Operator: KVu
Sample : SVI043WB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 10:48:40 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

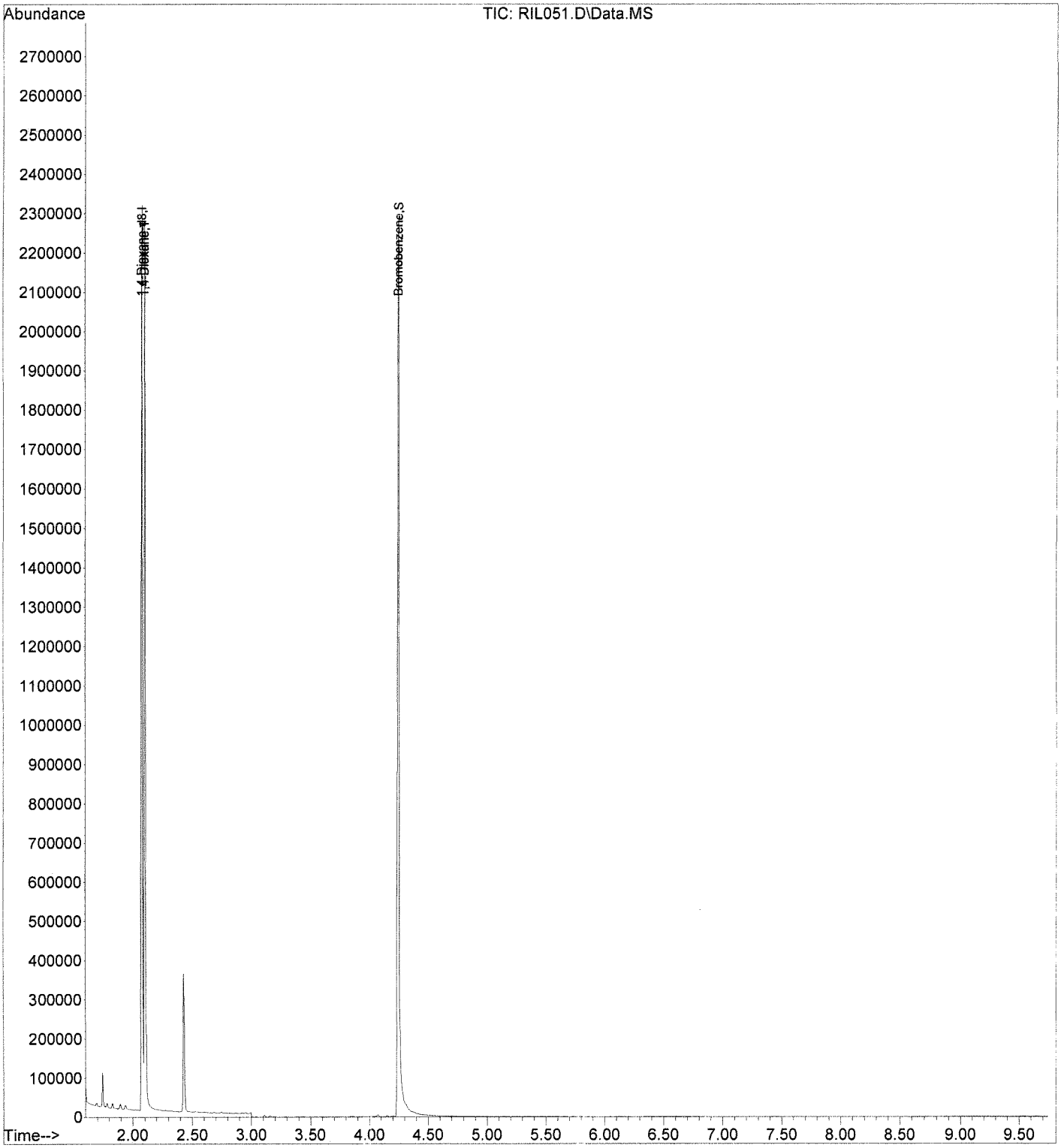
Data File : C:\msdchem\1\DATA\16I23\RIL051.D Vial: 5
Acq On : 23 Sep 2016 10:44 Operator: KVu
Sample : SVI043WL Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 14:16:36 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.077	96	898197	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.244	77	1279958	13.57	ppm	0.00
Spiked Amount 20.000			Recovery =	67.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	880563	11.01	ppm	99

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16I23\RIL051.D Vial: 5
Acq On : 23 Sep 2016 10:44 Operator: KVu
Sample : SVI043WL Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 14:16:36 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



3020

Quantitation Report (QT Reviewed)

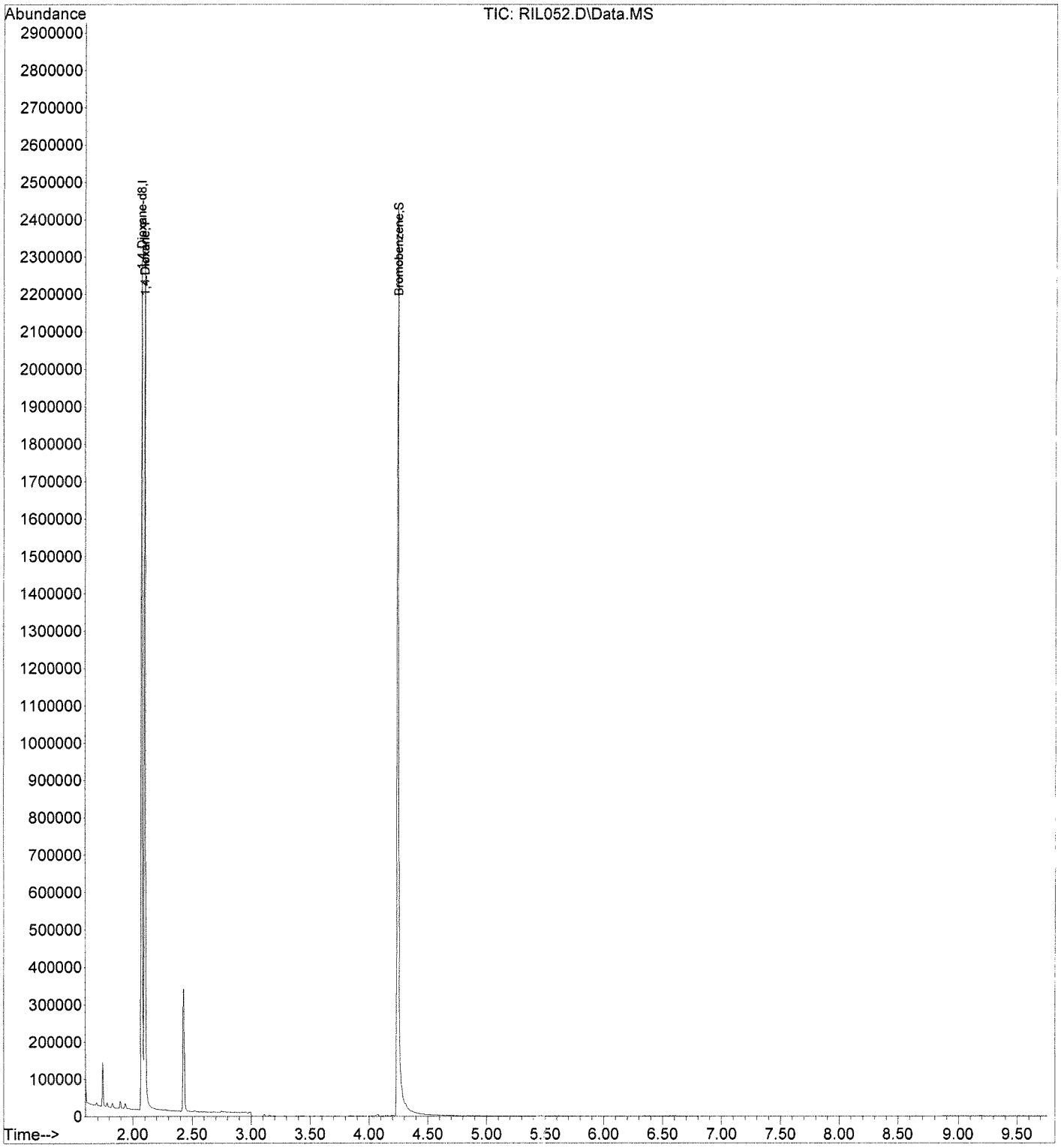
Data File : C:\msdchem\1\DATA\16I23\RIL052.D Vial: 6
Acq On : 23 Sep 2016 11:00 Operator: KVu
Sample : SVI043WC Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 14:16:48 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	887412	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.244	77	1346410	14.45	ppm	0.00
Spiked Amount 20.000			Recovery = 72.25%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	899881	11.39	ppm	100

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16I23\RIL052.D Vial: 6
Acq On : 23 Sep 2016 11:00 Operator: KVu
Sample : SVI043WC Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 14:16:48 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



INITIAL CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16I157
Lab File ID: RAL002 BFB Injection Date : 01/12/16
Instrument ID: TOE9 BFB Injection Time : 10:33
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVE9A12.M
Title : SEMIVOLATILES - SIM
Last Update : Wed Jan 13 13:39:02 2016
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	2.089	1.000	A	1	A	B
2	T	1,4-Dioxane	88	2.113	1.011	A	1	A	B
3	S	Bromobenzene	77	4.235	2.027	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

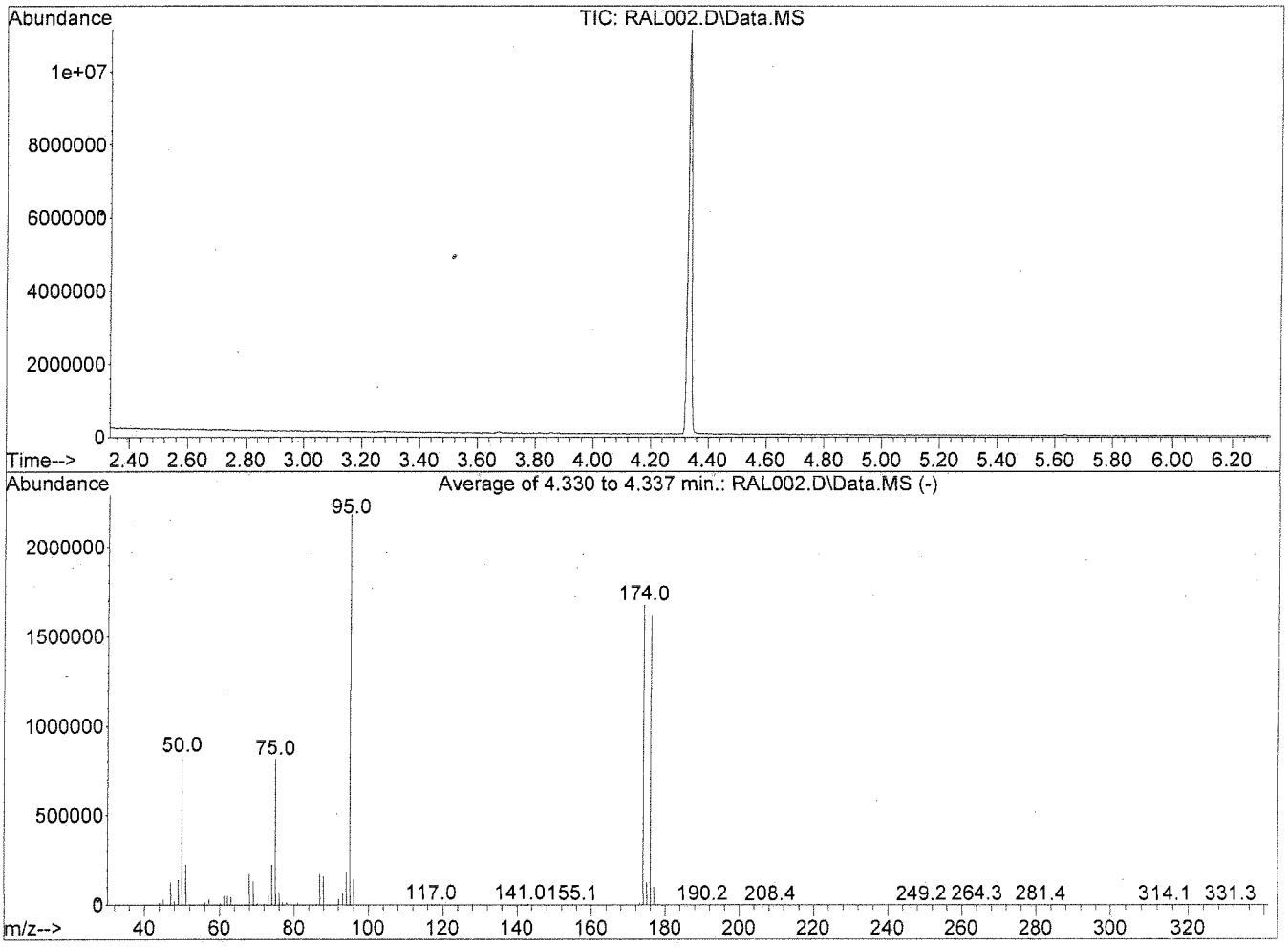
SVE9A12.M Wed Jan 13 13:39:20 2016 E9

02-04-16

Data Path : C:\msdchem\1\DATA\16A12\
Data File : RAL002.D
Acq On : 12 Jan 2016 10:33
Operator : KVu
Sample : BFBE9A1201
Misc : E9
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jan 13 13:45:13 2016



AutoFind: Scans 704, 705, 706; Background Corrected with Scan 696

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	38.1	832682	PASS
75	95	30	60	37.4	815808	PASS
95	95	100	100	100.0	2183851	PASS
96	95	5	9	6.5	140911	PASS
173	174	0.00	2	0.5	8598	PASS
174	95	50	100	76.8	1677141	PASS
175	174	5	9	7.5	125328	PASS
176	174	95	101	96.3	1614432	PASS
177	176	5	9	6.1	99275	PASS

02-04-16

3030

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL003.D Vial: 3
Acq On : 12 Jan 2016 10:46 Operator: KVu
Sample : SVE9A121 0.05PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

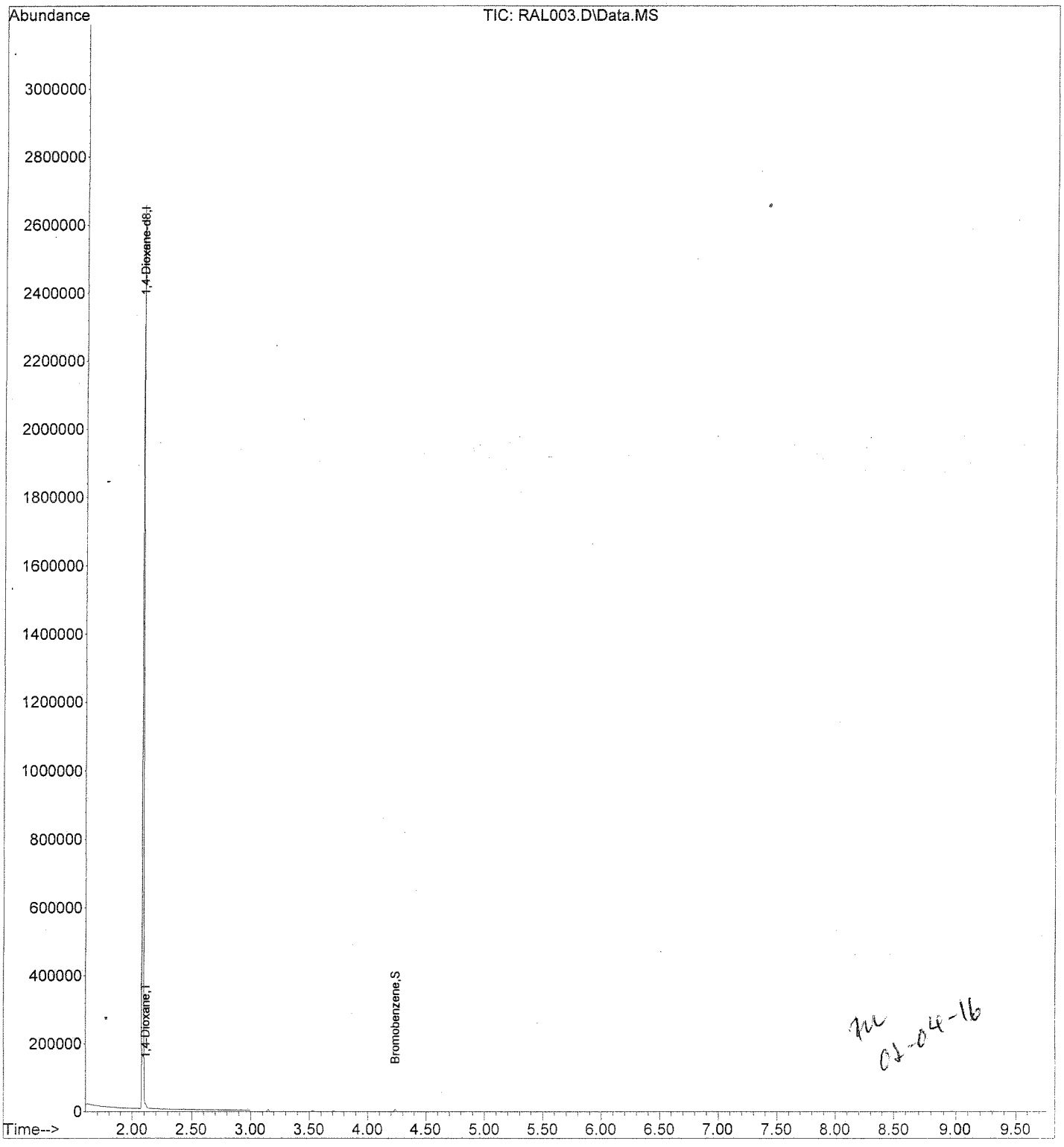
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	945510	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	4201	0.04	ppm	0.00
Spiked Amount 20.000			Recovery =	0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	4476	0.05	ppm	75

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL003.D Vial: 3
Acq On : 12 Jan 2016 10:46 Operator: KVu
Sample : SVE9A121 0.05PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:29 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



JC 01-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL004.D Vial: 4
Acq On : 12 Jan 2016 11:00 Operator: KVu
Sample : SVE9A122 0.075PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:51 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

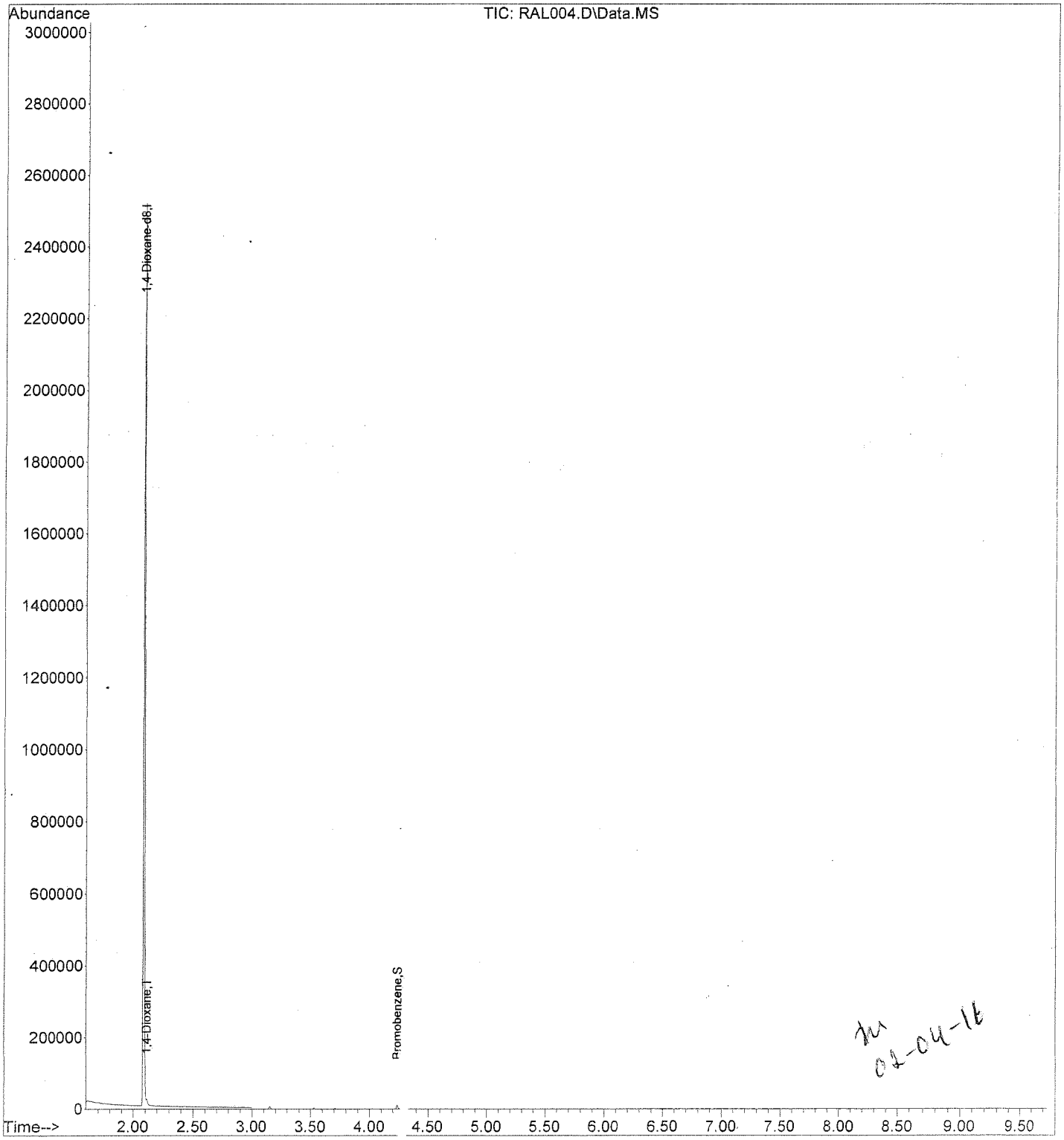
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	919219	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	6643	0.07	ppm	0.00
Spiked Amount 20.000			Recovery =	0.35%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	6082	0.07	ppm	87

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL004.D Vial: 4
Acq On : 12 Jan 2016 11:00 Operator: KVu
Sample : SVE9A122 0.075PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:39:51 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL005.D Via1: 5
Acq On : 12 Jan 2016 11:15 Operator: KVu
Sample : SVE9A123 0.15PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:11 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

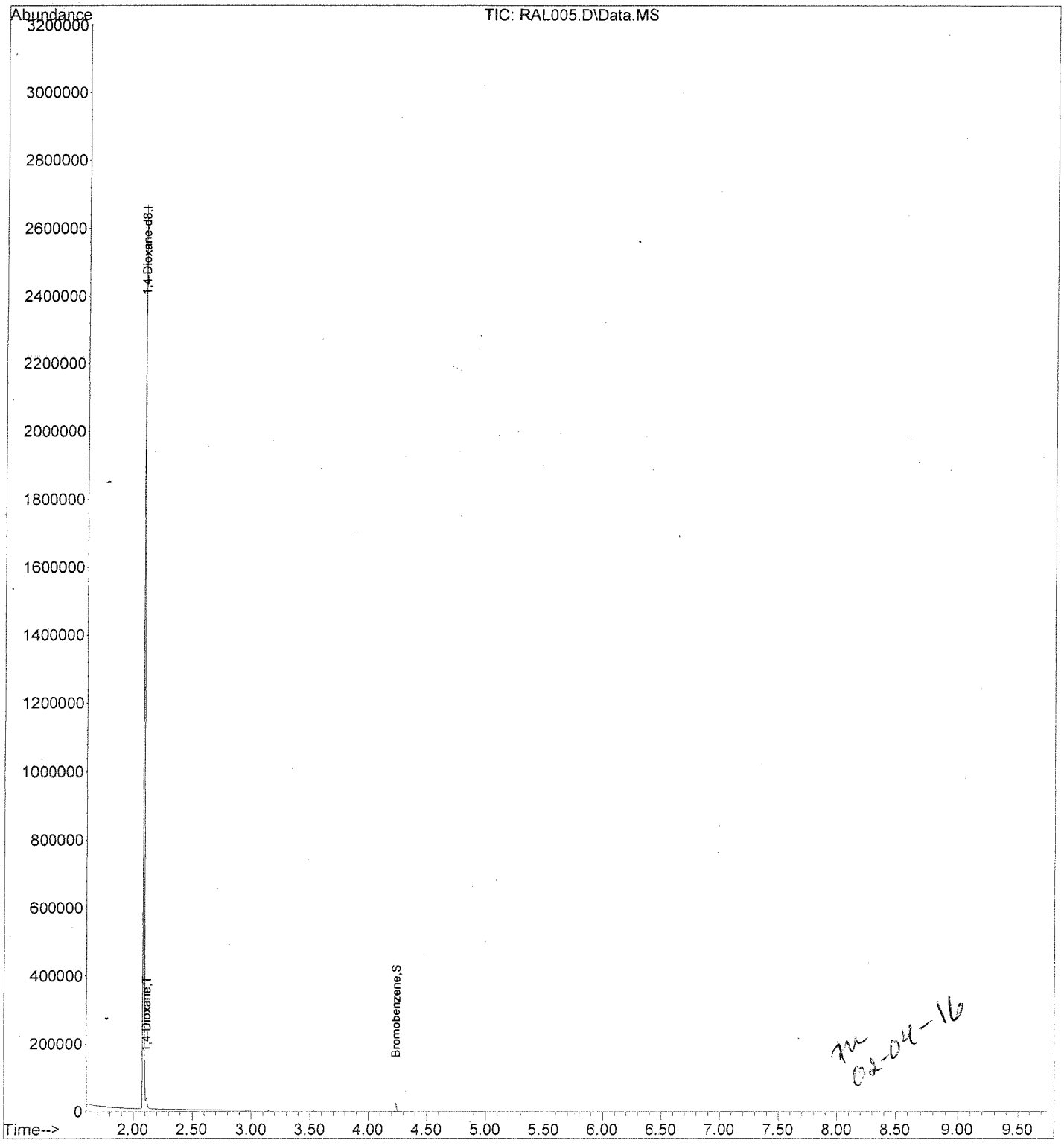
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	946724	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.236	77	15607	0.16	ppm	0.00
Spiked Amount 20.000			Recovery =	0.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	12840	0.15	ppm	94

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL005.D Vial: 5
Acq On : 12 Jan 2016 11:15 Operator: KVu
Sample : SVE9A123 0.15PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:11 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



TM 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL006.D Vial: 6
Acq On : 12 Jan 2016 11:31 Operator: KVu
Sample : SVE9A124 0.2PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:22 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

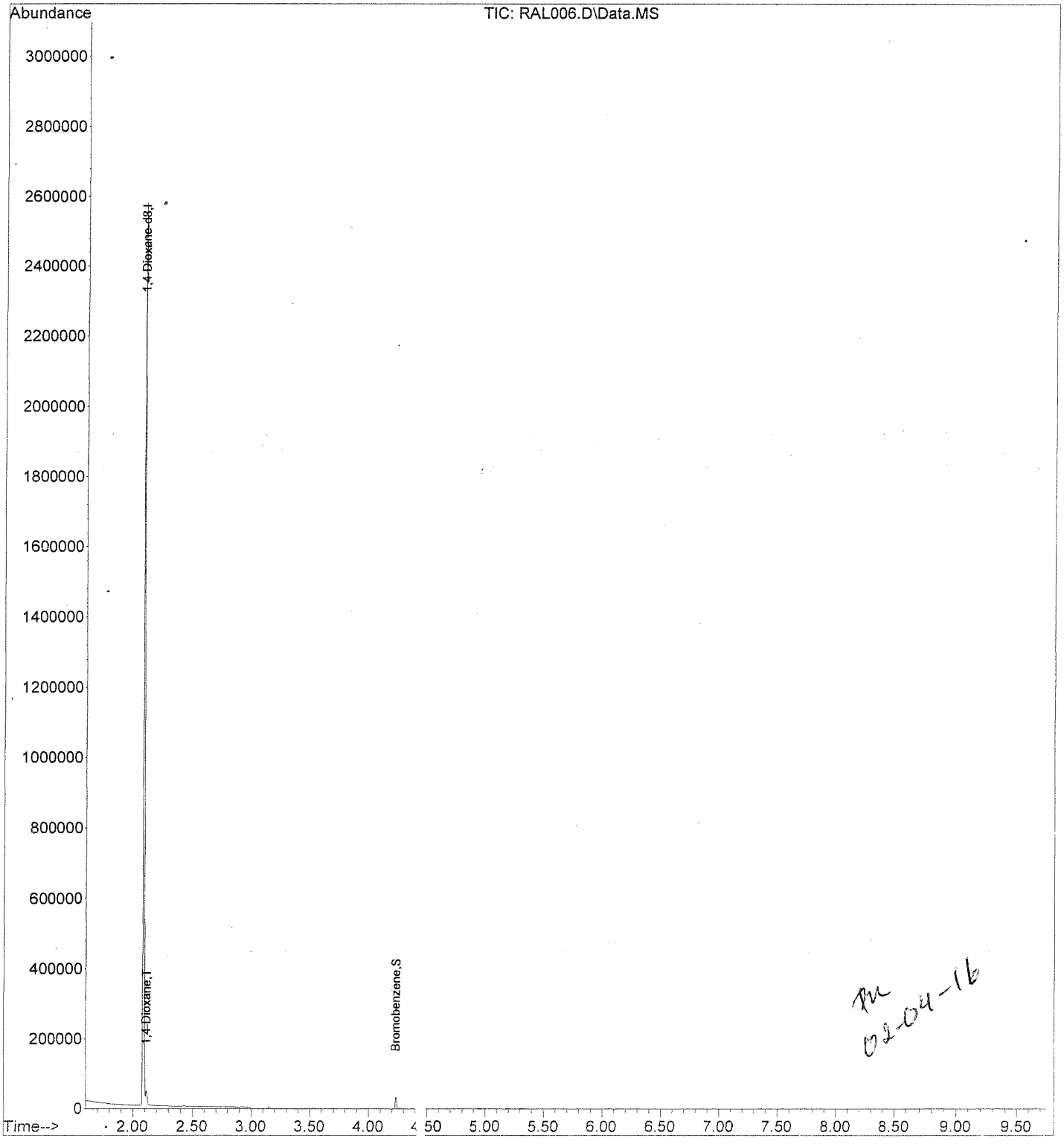
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	946102	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	20642	0.21	ppm	0.00
Spiked Amount 20.000			Recovery =	1.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	17496	0.21	ppm	96

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

07-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL006.D Vial: 6
Acq On : 12 Jan 2016 11:31 Operator: KVu
Sample : SVE9A124 0.2PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:22 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL007.D Vial: 7
Acq On : 12 Jan 2016 11:46 Operator: KVu
Sample : SVE9A125 0.5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

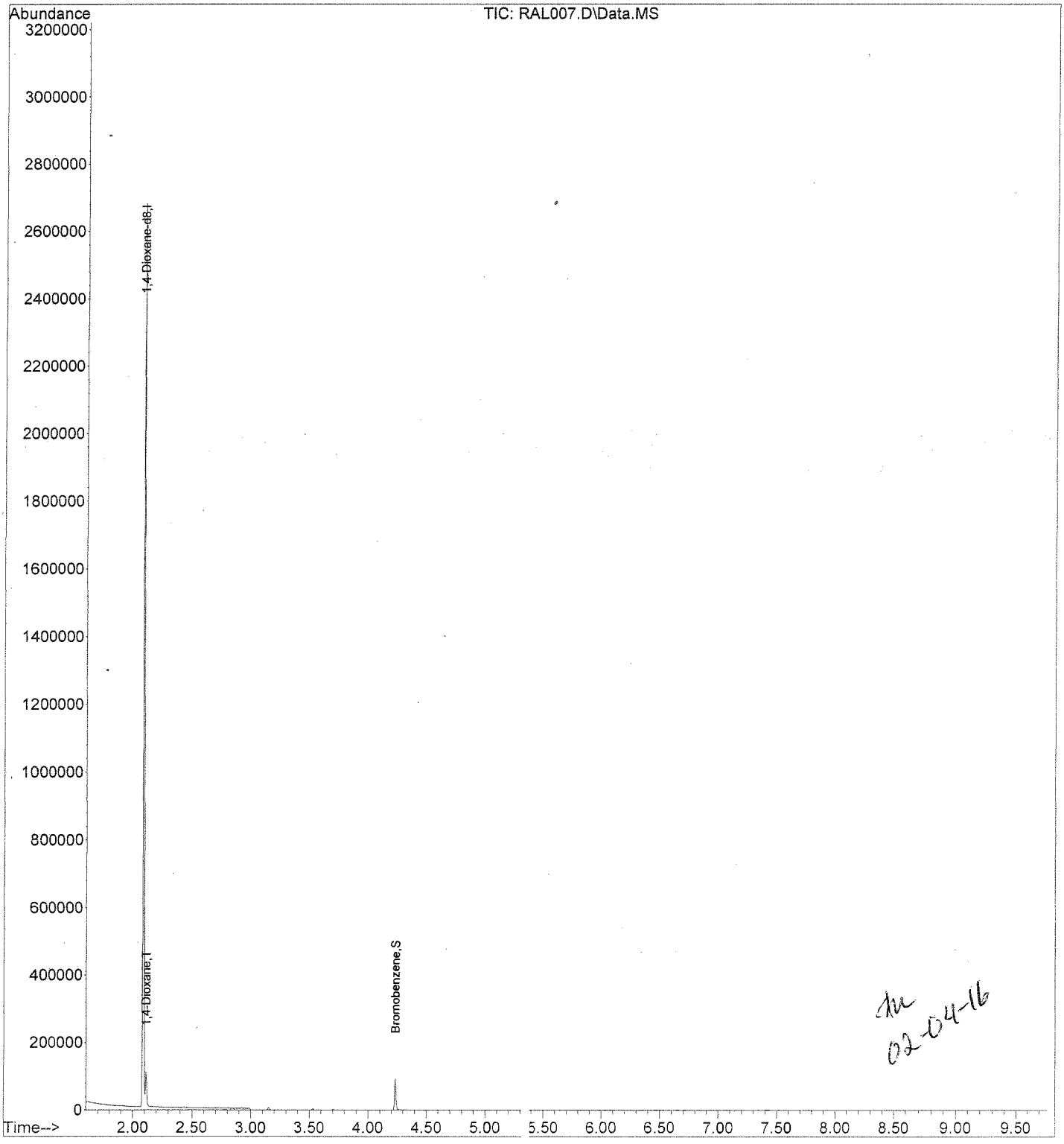
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	981248	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	53069	0.52	ppm	0.00
Spiked Amount 20.000			Recovery =	2.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	44192	0.51	ppm	99

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL007.D Vial: 7
Acq On : 12 Jan 2016 11:46 Operator: KVu
Sample : SVE9A125 0.5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



tw 02-04-16

3040

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL008.D Vial: 8
Acq On : 12 Jan 2016 12:02 Operator: KVu
Sample : SVE9A126 1PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:43 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

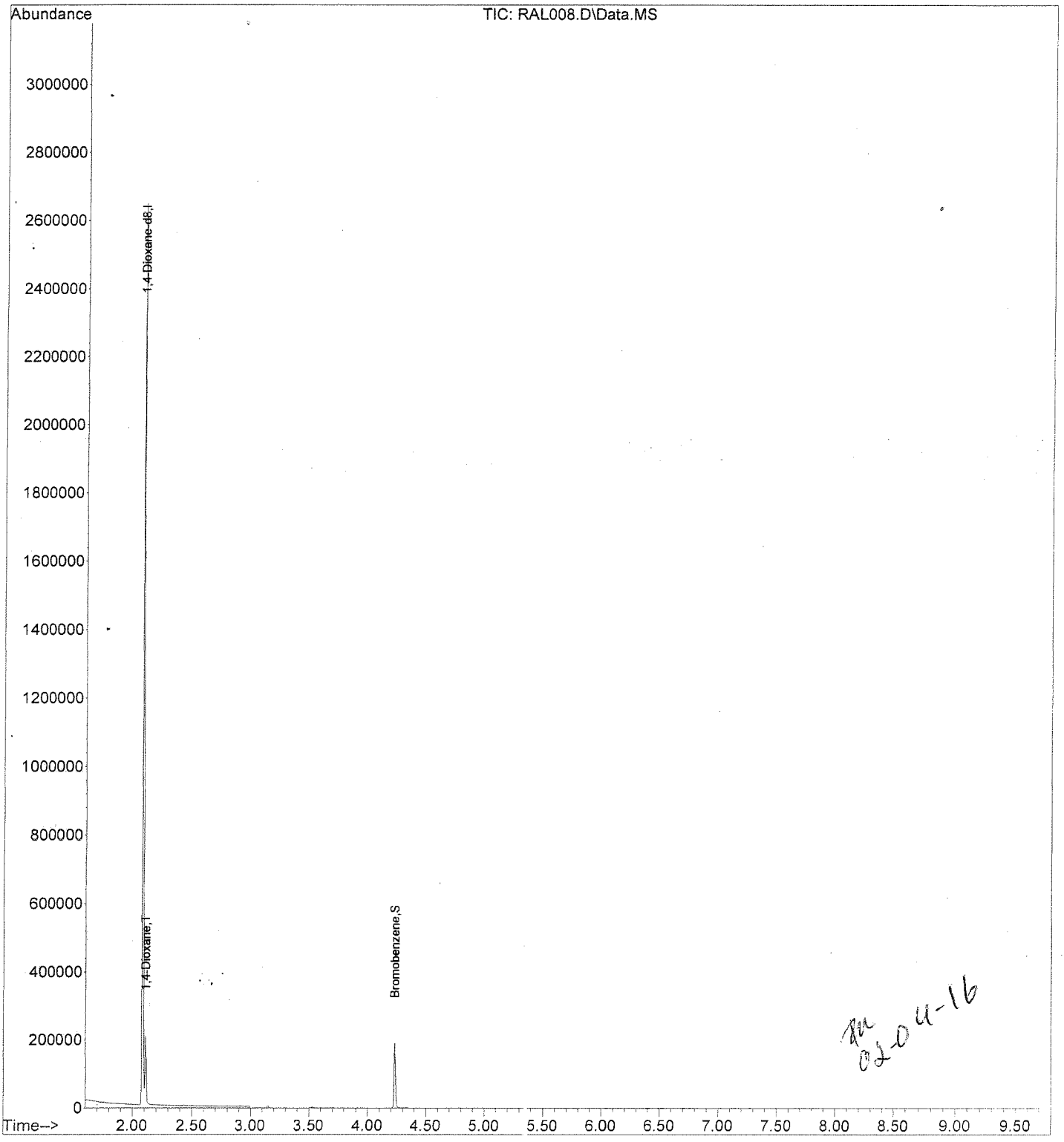
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	969591	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	106409	1.05	ppm	0.00
Spiked Amount 20.000			Recovery =	5.25%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	85828	0.99	ppm	100

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL008.D Vial: 8
Acq On : 12 Jan 2016 12:02 Operator: KVu
Sample : SVE9A126 1PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:43 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL009.D Vial: 9
Acq On : 12 Jan 2016 12:18 Operator: KVu
Sample : SVE9A127 5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

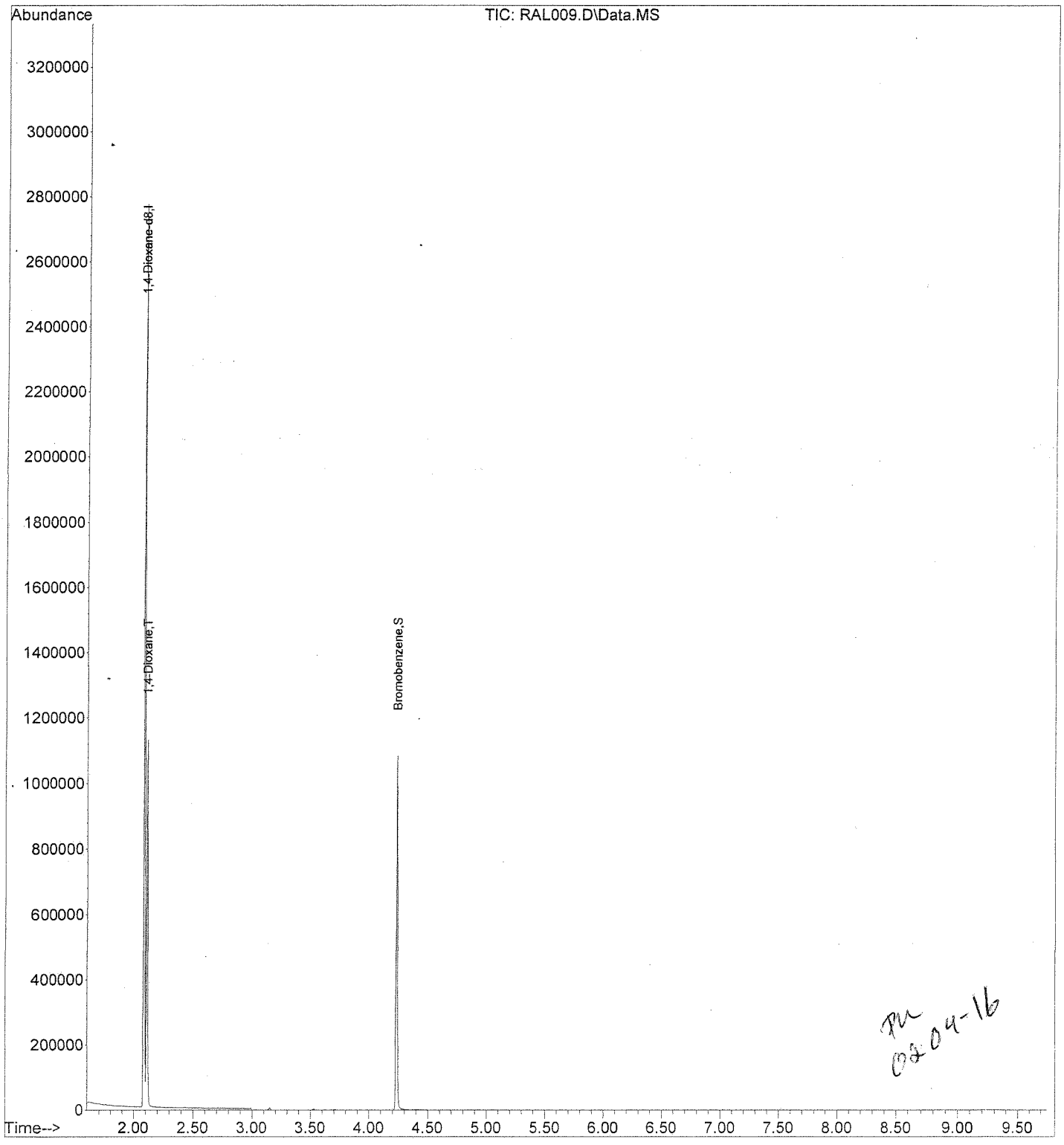
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.086	96	986337	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.233	77	570671	5.51	ppm	0.00
Spiked Amount 20.000			Recovery =	27.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	447403	5.09	ppm	100

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

m 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL009.D Vial: 9
Acq On : 12 Jan 2016 12:18 Operator: KVu
Sample : SVE9A127 5PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:40:53 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



TM 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL010.D Vial: 10
Acq On : 12 Jan 2016 12:33 Operator: KVu
Sample : SVE9A128 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:04 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

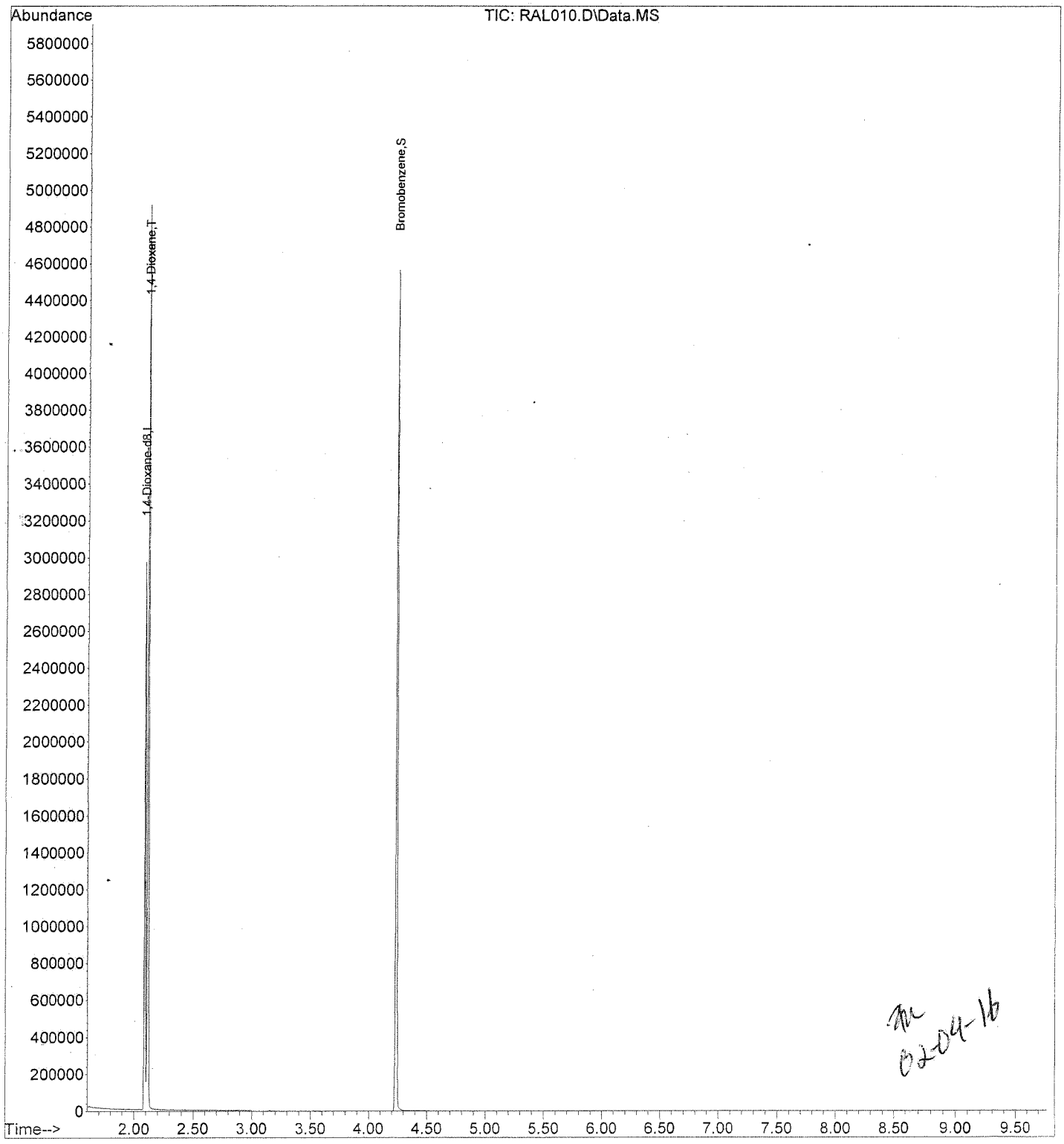
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.089	96	1056008	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	2414237	21.78	ppm	0.00
Spiked Amount 20.000			Recovery =	108.90%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.113	88	1884635	20.04	ppm	100

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL010.D Vial: 10
Acq On : 12 Jan 2016 12:33 Operator: KVu
Sample : SVE9A128 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:04 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL011.D Vial: 11
Acq On : 12 Jan 2016 12:49 Operator: KVu
Sample : SVE9A129 60PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

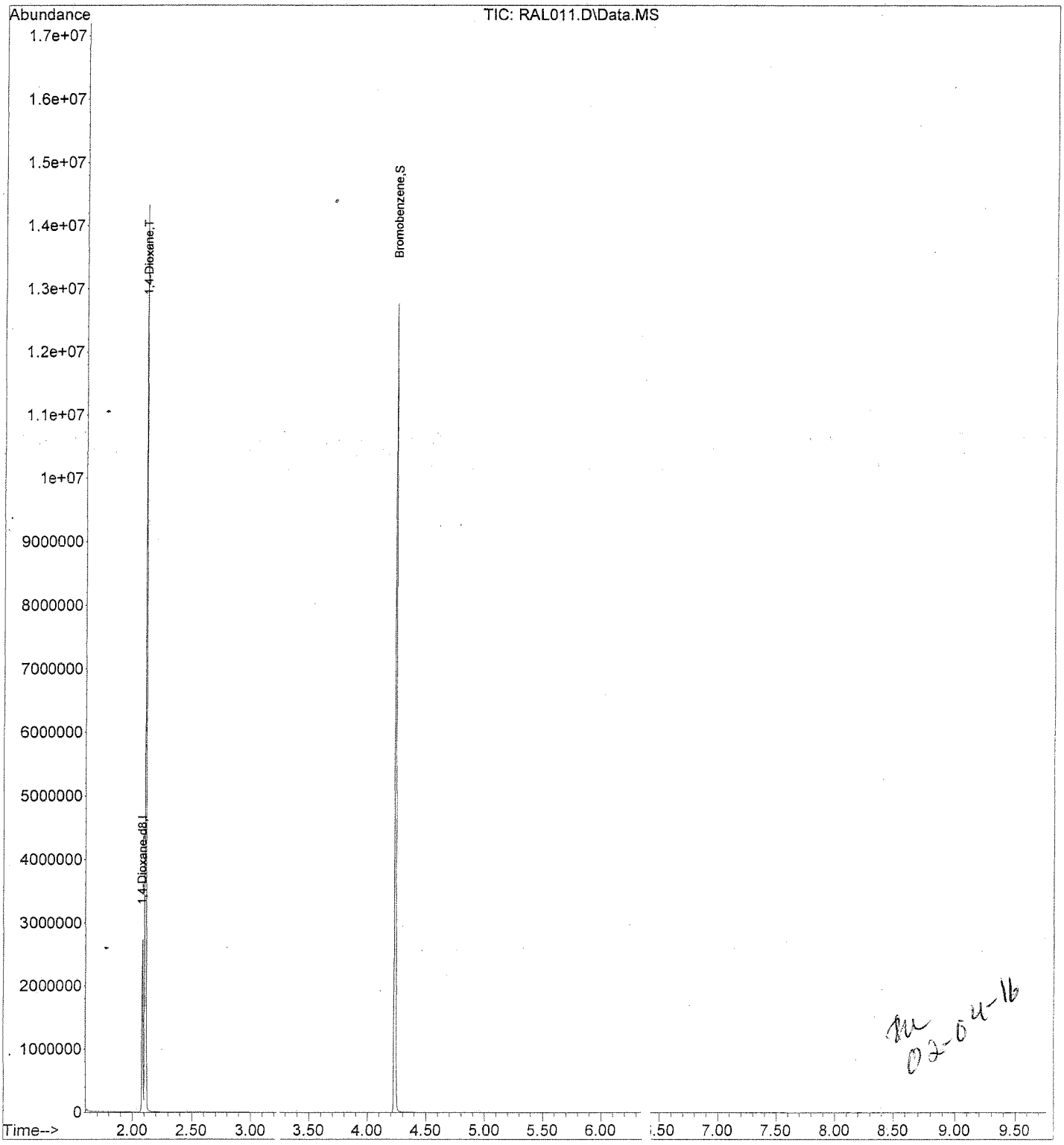
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	999724	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.235	77	6880614	65.56	ppm	0.00
Spiked Amount 20.000			Recovery =	327.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	5437581	61.08	ppm	99

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL011.D Vial: 11
Acq On : 12 Jan 2016 12:49 Operator: KVu
Sample : SVE9A129 60PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:17 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL012.D Vial: 12
Acq On : 12 Jan 2016 13:05 Operator: KVu
Sample : SVE9A1210 100PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:28 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

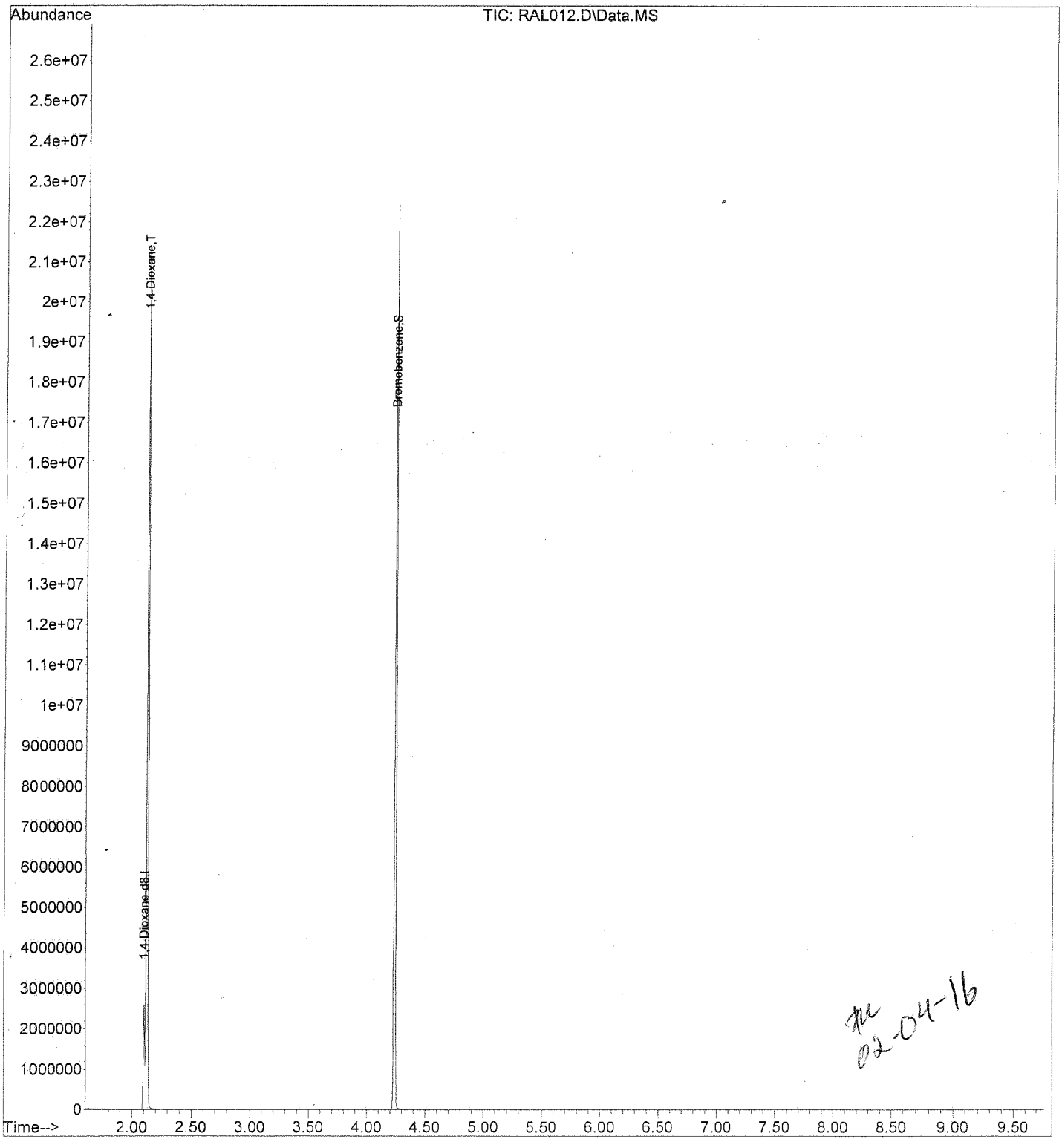
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.099	96	1168668	20.00	ppm	0.01
System Monitoring Compounds						
3) Bromobenzene	4.233	77	9692232	79.00	ppm	0.00
Spiked Amount 20.000			Recovery =	395.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.122	88	8817190	84.73	ppm	# 12

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

RL 02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL012.D Vial: 12
Acq On : 12 Jan 2016 13:05 Operator: KVu
Sample : SVE9A1210 100PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:41:28 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

3050

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integratpr: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	104	0.00
2	T	1,4-Dioxane	1.781	1.804	-1.3	105	0.00
3	S	Bromobenzene	2.100	2.517	-19.9	115	0.00

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

02-04-16

3054

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

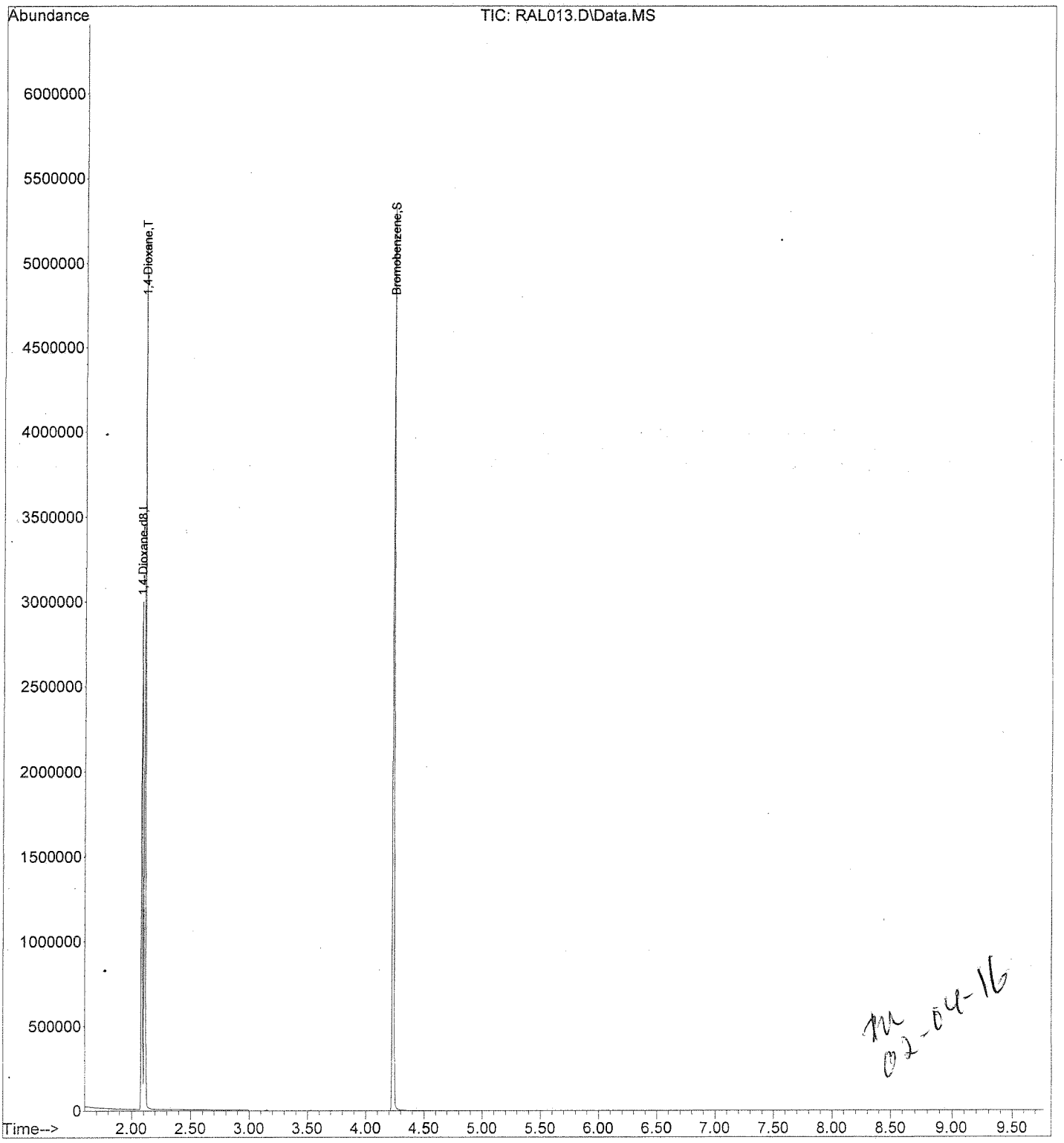
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.083	96	1099692	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	4.233	77	2767423	23.97	ppm	0.00
Spiked Amount 20.000			Recovery =	119.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.111	88	1983767	20.26	ppm	99

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

02-04-16

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



02-04-16

3056

DAILY CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16I157
Lab File ID: RIL048 BFB Injection Date : 09/23/16
Instrument ID: TOE9 BFB Injection Time : 09:38
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.00
75	30.0 - 60.0% of mass 95	41.06
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.18
173	Less than 2.0% of mass 174	0.58(0.7)1
174	50.0- 100.0% of mass 95	86.17
175	5.0 - 9.0% of mass 174	6.82(7.9)1
176	95.0 - 101.0% of mass 174	83.71(97.1)1
177	5.0 - 9.0% of mass 176	5.30(6.3)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	SSTD020	CSVE9A1247	RIL049	09/23/16	09:50
2	MBLK1W	SVI043WB	RIL050	09/23/16	10:33
3	LCS1W	SVI043WL	RIL051	09/23/16	10:44
4	LCD1W	SVI043WC	RIL052	09/23/16	11:00
5	JBERGW0002	I157-01	RIL053	09/23/16	11:16
6	JBERGW0004	I157-02	RIL054	09/23/16	11:32
7	JBERGW0031	I157-03	RIL055	09/23/16	11:47
8	SSTD020	CSVE9A1248	RIL056	09/23/16	12:22

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16I157
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.26
	LOWER LIMIT	528004	1.92
	SAMPLE ID		
1	SSTD020	1662704	2.07
2	MBLK1W	916699	2.07
3	LCS1W	898197	2.08
4	LCD1W	887412	2.07
5	JBERGW0002	904464	2.08
6	JBERGW0004	892633	2.08
7	JBERGW0031	952199	2.08
8	SSTD020	1623843	2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL049
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/23/16 09:50

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-Dioxane-d8	20.000	0	1662704	1	1	2.075	2.087	0				
2	1,4-Dioxane	18.018	-9.9	2667609	1.604	1.781	2.102	2.113	5.77				
3	Bromobenzene	19.869	-0.7	3468171	2.086	2.100	4.243	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RIL056
IC File :RAL010

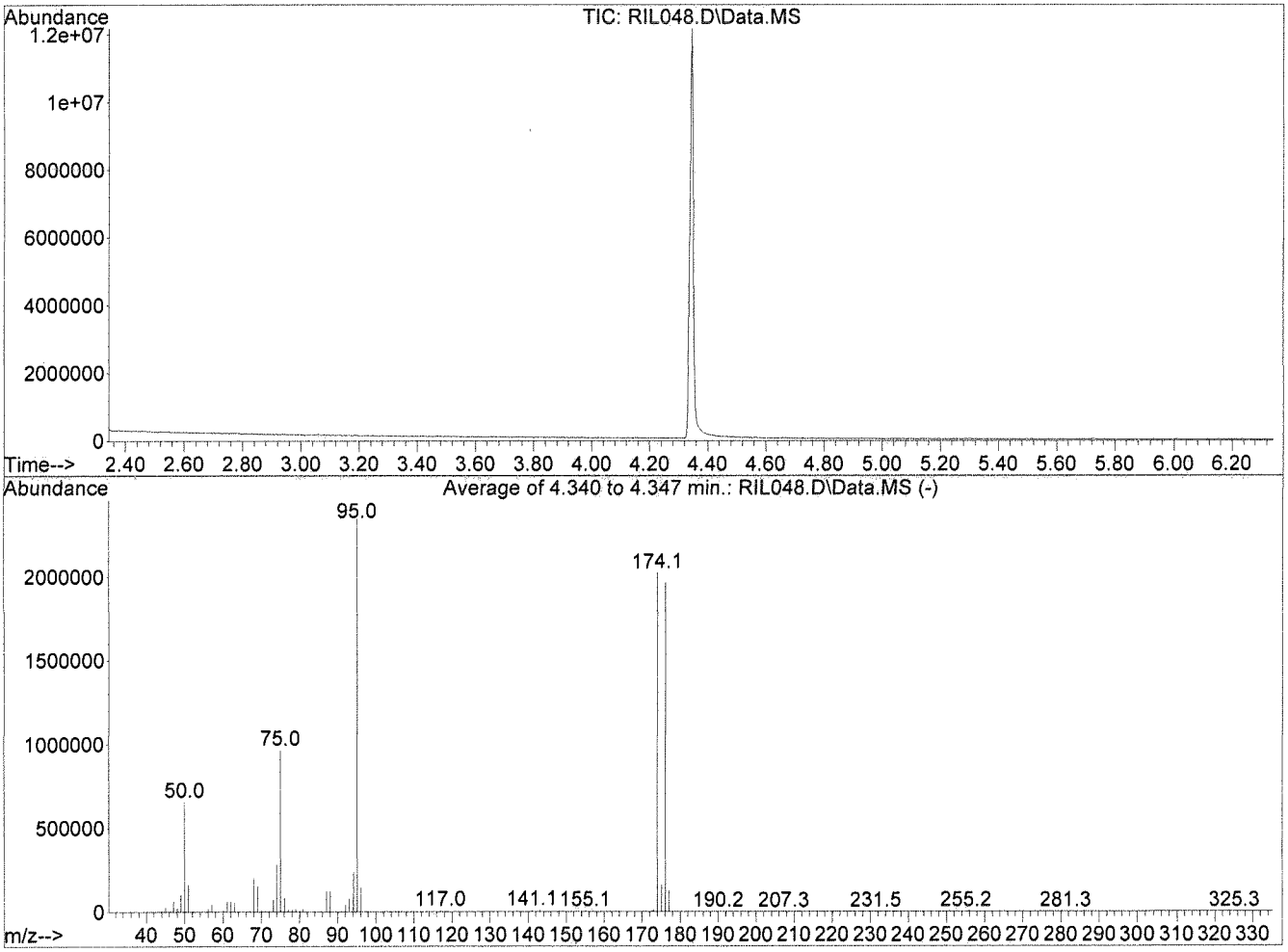
Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :09/23/16 12:22

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-Dioxane-d8	20.000	0	1623843	1	1	2.069	2.087	0				
2	1,4-Dioxane	18.419	-7.9	2663185	1.640	1.781	2.097	2.113	5.77				
3	Bromobenzene	20.272	1.4	3455837	2.128	2.100	4.238	4.235	10.96				

Data Path : C:\msdchem\1\DATA\16I23\
Data File : RIL048.D
Acq On : 23 Sep 2016 09:38
Operator : KVu
Sample : BFBE9A1247
Misc : E9
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jan 13 13:45:13 2016



AutoFind: Scans 707, 708, 709; Background Corrected with Scan 698

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	28.0	657944	PASS
75	95	30	60	41.1	965099	PASS
95	95	100	100	100.0	2350251	PASS
96	95	5	9	6.2	145317	PASS
173	174	0.00	2	0.7	13727	PASS
174	95	50	100	86.2	2025131	PASS
175	174	5	9	7.9	160339	PASS
176	174	95	101	97.1	1967275	PASS
177	176	5	9	6.3	124504	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I23\RIL049.D Vial: 3
Acq On : 23 Sep 2016 09:50 Operator: KVu
Sample : CSVE9A1247 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 10:19:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	157	-0.01
2	T	1,4-Dioxane	20.000	18.018	9.9	142	-0.01
3	S	Bromobenzene	20.000	19.869	0.7	144	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I23\RIL049.D Vial: 3
Acq On : 23 Sep 2016 09:50 Operator: KVu
Sample : CSVE9A1247 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 10:19:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	157#	-0.01
2	T	1,4-Dioxane	1.781	1.604	9.9	142	-0.01
3	S	Bromobenzene	2.100	2.086	0.7	144	0.00

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

Quantitation Report (QT Reviewed)

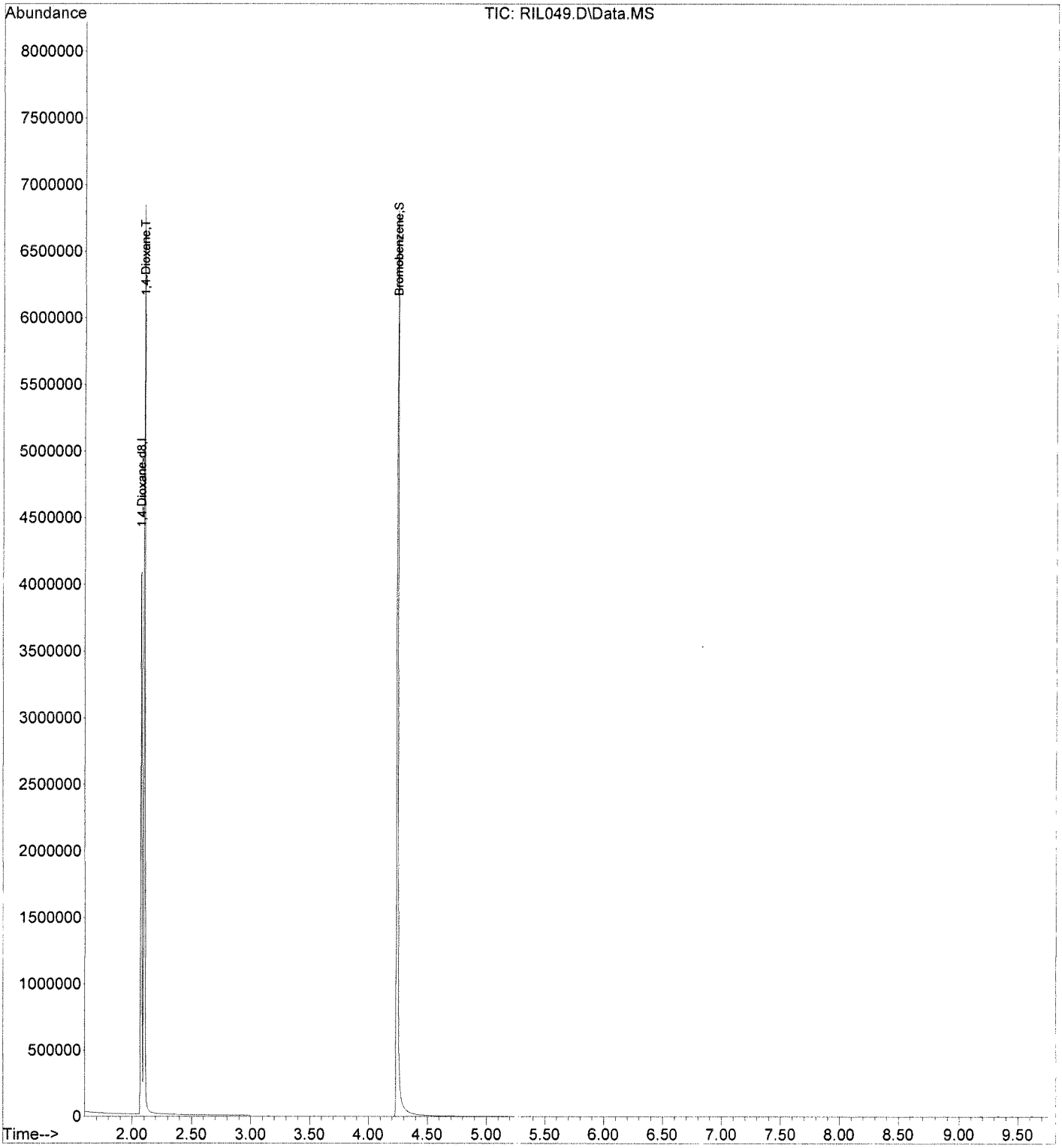
Data File : C:\msdchem\1\DATA\16I23\RIL049.D Vial: 3
Acq On : 23 Sep 2016 09:50 Operator: KVu
Sample : CSVE9A1247 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 10:19:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.075	96	1662704	20.00	ppm	-0.01
System Monitoring Compounds						
3) Bromobenzene	4.243	77	3468171	19.87	ppm	0.00
Spiked Amount 20.000			Recovery =	99.35%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.102	88	2667609	18.02	ppm	99

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16I23\RIL049.D Vial: 3
Acq On : 23 Sep 2016 09:50 Operator: KVu
Sample : CSVE9A1247 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 10:19:37 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I23\RIL056.D Vial: 10
Acq On : 23 Sep 2016 12:22 Operator: KVu
Sample : CSVE9A1248 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 14:11:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	154	-0.02
2	T	1,4-Dioxane	20.000	18.419	7.9	141	0.00
3	S	Bromobenzene	20.000	20.272	-1.4	143	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16I23\RIL056.D Vial: 10
Acq On : 23 Sep 2016 12:22 Operator: KVu
Sample : CSVE9A1248 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 14:11:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	154#	-0.02
2	T	1,4-Dioxane	1.781	1.640	7.9	141	0.00
3	S	Bromobenzene	2.100	2.128	-1.3	143	0.00

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

Quantitation Report (QT Reviewed)

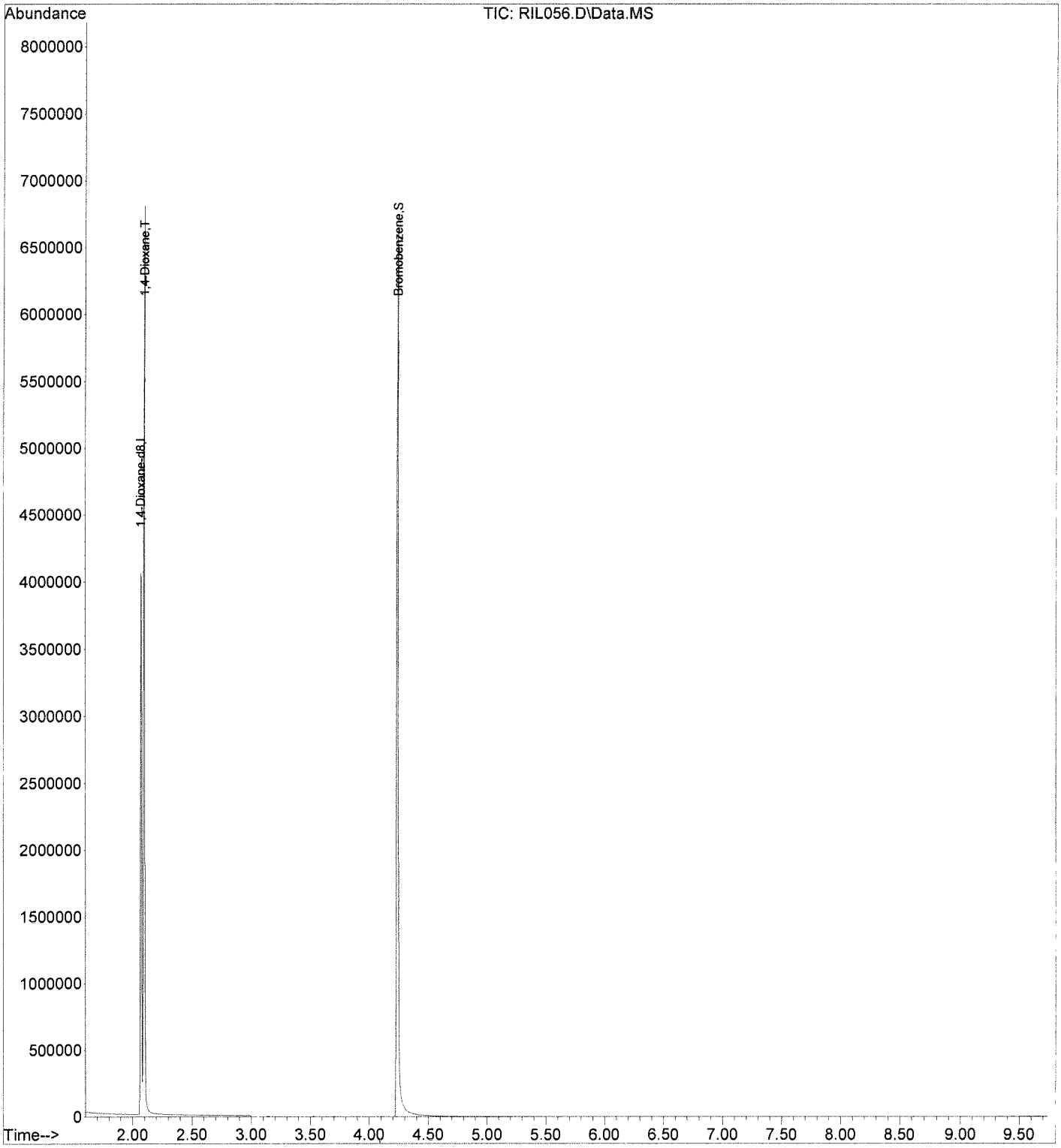
Data File : C:\msdchem\1\DATA\16I23\RIL056.D Vial: 10
Acq On : 23 Sep 2016 12:22 Operator: KVu
Sample : CSVE9A1248 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 14:11:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	2.069	96	1623843	20.00	ppm	-0.02
System Monitoring Compounds						
3) Bromobenzene	4.238	77	3455837	20.27	ppm	0.00
Spiked Amount 20.000			Recovery =	101.35%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.097	88	2663185	18.42	ppm	100

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\16I23\RIL056.D Vial: 10
Acq On : 23 Sep 2016 12:22 Operator: KVu
Sample : CSVE9A1248 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Sep 23 14:11:32 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M



ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
	2	BFBE9A1201				
	3	SVE9A12 1				0.05 ppm 14 Dioxane
	4	2				.075
	5	3				.15
	6	4				.2
	7	5				.5
	8	6				1
	9	7				5
	10	8				20
	11	9				60
	12	10				100
	13	ISVE9A12 1				ICV
SVA001W	14	LOQ-01	1		x	
	15	LOD-01				
SVA002S	16	LOQ-02	1	x		
	17	LOD-02				
						MW 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

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.

2015

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 9/23/16 9:38 End Date/Time: 9/23/16 12:22

ANALYTICAL BATCH: CSVE9A1247

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RIL047	IBE9A1247				
	048	BFBE9A1247				
	049	CSVE9A1247				
SVI043W	050	SVI043WB	1		X	
	051	WL				
	052	WC				
	053	16I157-01				
	054	02				
	055	03				
	056	CSVE9A1248				

9/26/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name / ID / Conc. (mg/L)	
DFTPP	
INT. STD.	SS2A-13-01-15 1000
ICV	
DCC	SS2C-14-30-02 20
BENZIDINE	
APP 9	
APP 9 ADD	
BFB	SS2C-14-28-03 50
Solvent	ID
CH_2Cl_2	56056
DATA FILE	16I23
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	9/26/16

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☐ 499766-2 ☐

Comments:

Analyzed By: MV

Date Disposed: 9/23/16

Disposed By: MV

This page is checked during data review.

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-093
Preparation Batch: SVI043W
Matrix: WATER
Micropipette ID: 100µl: PE97C-03
Micropipette ID: 1000µl: PE00-03

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1
LCS/MS (1,4 DIOX+HOC)	SS2B-12-24-02	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	560556
Na_2SO_4	SWIB-003-14-21
H_2SO_4	–
NaOH	SPIB-08-94-02
Silica Sand	–
Silica Gel	–
Reagent Water	SWIA-006-02-21
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9685320 B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVI043WB			6
WL			6
WC			6
E157-01			6
-02			6
-03			6

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2		
3		
4		
5		
6	35	35
8		

Thermometer ID = SVOC-T1

Prepared By: NAT Witnessed By: TW

Standard Added By: NAT Checked By: ML

Extract Received By: KV 9/22/16 Location: SE01#11

Disposed By: Disposed On:

FileID: SVI043W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVI043W01	SVI043WB	1000	ml	9/21/16 15:01	2	1000	2	1	
16SVI043W02	SVI043WL	1000	ml	9/21/16 15:01	2	1000	2	1	1,4DIOXANE
16SVI043W03	SVI043WC	1000	ml	9/21/16 15:01	2	1000	2	1	1,4DIOXANE
16SVI043W04	I157-01	940	ml	9/21/16 15:11	2	1000	2	1.06	cloudy white
16SVI043W05	I157-02	940	ml	9/21/16 15:11	2	1000	2	1.06	
16SVI043W06	I157-03	940	ml	9/21/16 15:11	2	1000	2	1.06	milky brown

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 9/21/16 12:30 ☐ pHAdj(≤2) @ Prepared By: NTran

☑ Extraction Ended @ 9/22/16 6:30 ☑ pHAdj(≥11) @ 9/21/16 12:30 Checked By: ML

Comments: volume entered after extraction started,cl not detected,pH 6-7. Date 9/22/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16I266**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1004
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3032
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 10-19-2016
EMAX Batch No.: 16I266

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 09/29/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0016	I266-01	09/27/16	WATER	1,4-DIOXANE BY 8270 SIM
JBERGW0013	I266-02	09/28/16	WATER	1,4-DIOXANE BY 8270 SIM

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

HGL HydroGeoLogic, Inc. Exceeding Expectations

Laboratory Chain of Custody Record

16I266

Date: 9/28/16 Page 1 of 1

COC #: GW- 13

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
							GW		
1	IS6-01	JBERGW0016	N/A	9/27/16	0930	GW	X	2	
2	417SSWL-08	JBERGW0013	N/A	9/28/16	0955	GW	X	2	

Total No. of Containers (this page): 4
Total (entire COC): 4

Total # of coolers: 1
FedEx airbill #(s):

Relinquished by	Date	Received by	Date
Pete Arroyo	9-29-16		9/29/16
Signature	1200	Signature	9/30/16
Printed Name	Time	Printed Name	Time
HGL			09:10
Company		Company	
Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

SPECIAL INSTRUCTIONS:

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

Temp - 1.0°

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16I266
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7842 0874 5827	Recipient LATEL
☐ EMAX Courier ☐ Client Delivery		Date 9/29/16 Time 09:00

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: COC Relinquished Date 9/29/16 on COC, COC Corrected But NOT DATED & Initialed

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 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 130538506 Facility	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
				my for Richard 9/29/16

9/29/16

☐ 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** 9/29/16 9/29/16

SRF _____ **Date** 9/29/16

PM my for Richard **Date** 9/29/16

ORIGIN ID:CSTH (330) 840-9449
J DE VAUGHN
HYDROGEOLOGIC INC
581 BOSTON MILLS RD
STE 600
HUDSON, OH 44236
UNITED STATES US

SHIP DATE: 28SEP16
ACTWGT: 43.20 LB
CAD: 6890280/SSF01722
DIMS: 24x15x14 IN

BILL THIRD PARTY

TO EMAX LAB INC
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

16I266
9/29/16
09:00

FedEx Express

TRK# 0201 7842 0874 5827

THU - 29 SEP 10:30A
PRIORITY OVERNIGHT

XH HHRA

DSR
90501
CA-US LAX

Part # 156297V 4/16 FMP EXP 06/17 **

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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16I266

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16I266

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

A total of two (2) water samples were received on 09/29/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RJL003) and CCV(Datafile ID:RJL009). 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. SVI058WB - 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. SVI058WL/SVI058WC 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
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING

SDG NO. : 161266
Instrument ID : T-OE9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVI058WB	1	NA	10/04/1610:00	09/29/1612:00	RJL004	RAL010	SVI058W	Method Blank
LCS1W	SVI058WL	1	NA	10/04/1610:12	09/29/1612:00	RJL005	RAL010	SVI058W	Lab Control Sample (LCS)
LCD1W	SVI058WC	1	NA	10/04/1610:27	09/29/1612:00	RJL006	RAL010	SVI058W	LCS Duplicate
JBERGW0016	I266-01	0.94	NA	10/04/1610:43	09/29/1612:00	RJL007	RAL010	SVI058W	Field Sample
JBERGW0013	I266-02	1.03	NA	10/04/1610:59	09/29/1612:00	RJL008	RAL010	SVI058W	Field Sample

FN - Filename
% Moist - Percent Moisture

2552

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	09/27/16
Project	: JBER GW SAMPLING	Date Received:	09/29/16
Batch No.	: 16I266	Date Extracted:	09/29/16 12:00
Sample ID:	JBERGW0016	Date Analyzed:	10/04/16 10:43
Lab Samp ID:	I266-01	Dilution Factor:	0.94
Lab File ID:	RJL007	Matrix :	WATER
Ext Btch ID:	SVI058W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.47	0.12	0.24

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	33.4	37.60	88.8	30-130

RL: Reporting Limit

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: 09/28/16
Project : JBER GW SAMPLING	Date Received: 09/29/16
Batch No. : 16I266	Date Extracted: 09/29/16 12:00
Sample ID: JBERGW0013	Date Analyzed: 10/04/16 10:59
Lab Samp ID: I266-02	Dilution Factor: 1.03
Lab File ID: RJL008	Matrix : WATER
Ext Btch ID: SVI058W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.52	0.13	0.26

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	33.5	41.20	81.4	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	NA
Project	: JBER GW SAMPLING	Date Received:	09/29/16
Batch No.	: 16I266	Date Extracted:	09/29/16 12:00
Sample ID:	MBLK1W	Date Analyzed:	10/04/16 10:00
Lab Samp ID:	SVI058WB	Dilution Factor:	1
Lab File ID:	RJL004	Matrix :	WATER
Ext Btch ID:	SVI058W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	29.6	40.00	74.1	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16I266
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVI058WB	SVI058WL	SVI058WC		
LAB FILE ID:	RJL004	RJL005	RJL006		
DATE EXTRACTED:	09/29/1612:00	09/29/1612:00	09/29/1612:00	DATE COLLECTED:	NA
DATE ANALYZED:	10/04/1610:00	10/04/1610:12	10/04/1610:27	DATE RECEIVED:	09/29/16
PREP. BATCH:	SVI058W	SVI058W	SVI058W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	26.4	66	40.0	28.4	71	7	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	33.7	84	40.0	34.0	85	30-130

INITIAL CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16I266
Lab File ID: RAL002 BFB Injection Date : 01/12/16
Instrument ID: TOE9 BFB Injection Time : 10:33
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.59
	LOWER LIMIT	528004	1.59
	SAMPLE ID		
1	SVE9A121	945510	2.09
2	SVE9A122	919219	2.09
3	SVE9A123	946724	2.09
4	SVE9A124	946102	2.09
5	SVE9A125	981248	2.09
6	SVE9A126	969591	2.08
7	SVE9A127	986337	2.09
8	SVE9A129	999724	2.08
9	SVE9A1210	1168668	2.10
10	ISVE9A121	1099692	2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

01-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

AC 02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 161266

Lab File ID: RJL002 BFB Injection Date : 10/04/16

Instrument ID: TOE9 BFB Injection Time : 09:22

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.00
75	30.0 - 60.0% of mass 95	42.50
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.59
173	Less than 2.0% of mass 174	0.97(1.0)1
174	50.0- 100.0% of mass 95	95.68
175	5.0 - 9.0% of mass 174	6.91(7.2)1
176	95.0 - 101.0% of mass 174	92.93(97.1)1
177	5.0 - 9.0% of mass 176	5.76(6.2)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	SSTD020	CSVE9A1249	RJL003	10/04/16	09:40
2	MBLK1W	SVI058WB	RJL004	10/04/16	10:00
3	LCS1W	SVI058WL	RJL005	10/04/16	10:12
4	LCD1W	SVI058WC	RJL006	10/04/16	10:27
5	JBERGW0016	I266-01	RJL007	10/04/16	10:43
6	JBERGW0013	I266-02	RJL008	10/04/16	10:59
7	SSTD020	CSVE9A1250	RJL009	10/04/16	11:18

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16I266
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.26
	LOWER LIMIT	528004	1.92
	SAMPLE ID		
1	SSTD020	853259	2.08
2	MBLK1W	931838	2.07
3	LCS1W	908005	2.07
4	LCD1W	938135	2.08
5	JBERGW0016	922183	2.08
6	JBERGW0013	1097746	2.08
7	SSTD020	852764	2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RJL003
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :10/04/16 09:40

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-Dioxane-d8	20.000	0	853259	1	1	2.077	2.087	0				
	2	1,4-Dioxane	18.649	-6.8	1416899	1.661	1.781	2.102	2.113	5.77				
	3	Bromobenzene	19.689	-1.6	1763618	2.067	2.100	4.245	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RJL009
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :10/04/16 11:18

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-Dioxane-d8	20.000	0	852764	1	1	2.075	2.087	0				
2	1,4-Dioxane	18.795	-6.0	1427123	1.674	1.781	2.102	2.113	5.77				
3	Bromobenzene	20.573	2.9	1841738	2.160	2.100	4.244	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16J04\RJL003.D Vial: 3
Acq On : 04 Oct 2016 09:40 Operator: KVu
Sample : CSVE9A1249 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 04 10:24:34 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dioxane-d8	20.000	20.000	0.0	81	-0.01
2 T	1,4-Dioxane	20.000	18.649	6.8	75	-0.01
3 S	Bromobenzene	20.000	19.689	1.6	73	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16J04\RJL003.D Vial: 3
Acq On : 04 Oct 2016 09:40 Operator: KVu
Sample : CSVE9A1249 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 04 10:24:34 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dioxane-d8	1.000	1.000	0.0	81	-0.01
2 T	1,4-Dioxane	1.781	1.661	6.7	75	-0.01
3 S	Bromobenzene	2.100	2.067	1.6	73	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16J04\RJL009.D Vial: 9
Acq On : 04 Oct 2016 11:18 Operator: KVu
Sample : CSVE9A1250 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 04 11:30:55 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	81	-0.01
2	T	1,4-Dioxane	20.000	18.795	6.0	76	-0.01
3	S	Bromobenzene	20.000	20.573	-2.9	76	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16J04\RJL009.D Vial: 9
Acq On : 04 Oct 2016 11:18 Operator: KVu
Sample : CSVE9A1250 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 04 11:30:55 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	81	-0.01
2	T	1,4-Dioxane	1.781	1.674	6.0	76	-0.01
3	S	Bromobenzene	2.100	2.160	-2.9	76	0.00

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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
	2	BFBE9A1201				
	3	SVE9A12 1				0.05 ppm 14 pt ICAL
	4	2				.075
	5	3				.15
	6	4				.2
	7	5				.5
	8	6				1
	9	7				5
	10	8				20
	11	9				60
	12	10				100
	13	ISVE9A12 1				ICV
SVA001W	14	LOQ-01	1		X	
	15	LOD-01				
SVA002S	16	LOQ-02	1	X		
	17	LOD-02				
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

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.

3823

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 10/4/16 9:22 End Date/Time: 10/4/16 11:18

ANALYTICAL BATCH: CSVE9A1249

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RJL061	IBE9A1249				
	2	BFBE9A1249				
	3	CSVE9A1249				
SVI058W	4	SVI058WB	1		x	
	5	WL				
	6	WC				
	7	161256-01				
	8	02				
	9	CSVE9A1250				
		MV 10/4/16				

	Instrument No:	E9
INITIAL CALIBRATION REFERENCE		
Date	1/12/16	
ICAL ID	SVE9A12	
Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SSDA-13-01-15	1000
ICV		
DCC	SS2C-14-32-03	20
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-32-02	50
Solvent	ID	
CH_2Cl_2	56056	
DATA FILE	16J04	
Electronic Data Archival		
Location		Date
HPCHEM_SVOA/TOE9		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO000-01

Syringe ID: ☑ 499766-2 ☐

Comments:

Analyzed By: KV

Date Disposed: 10/4/16

Disposed By: MV

This page is checked during data review.

8270D

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-093
Preparation Batch: SVI0588W
Matrix: WATER
Micropipette ID: 100µl PE97C-03
Micropipette ID: 1000µl PE00-03

Standards	ID	Amount Added (ml)
Surrogate	SS2B-12-21-01	0.1
LCS/MS (1,4DIOXANE)	SS2B-12-24-02	1.0
LCS/MS		
LCS/MS		
LCS/MS		
Reagent	**Lot# / ID**	
CH_2Cl_2	161598	
Na_2SO_4	SWIB-003-15-03	
H_2SO_4		
NaOH	SPIB-08-96-04	
Silica Sand		
Silica Gel		
Reagent Water	SWIA-006-02-21	
Residual Chlorine Strip	6271	
pH Strip	HC681919	
Filter Paper	9703627A	

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVI0588LCS			6
WL			6
MB			6
I266-01			6
-02			6

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2		
3		
4		
5		
6	35	35
8		

Thermometer ID = SVOC-T1

Prepared By: JM — Witnessed By: NA
Standard Added By: JM — Checked By: ML
Extract Received By: KJ 9/30/16 — Location: SE01 #18
Disposed By: — Disposed On:

FileID: SVI058W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVI058W01	SVI058WB	1000	ml	9/29/16 11:59	2	1000	2	1	
16SVI058W02	SVI058WL	1000	ml	9/29/16 11:59	2	1000	2	1	1,4 DIOXANE
16SVI058W03	SVI058WC	1000	ml	9/29/16 11:59	2	1000	2	1	1,4 DIOXANE
16SVI058W04	I266-01	1060	ml	9/29/16 11:59	2	1000	2	0.94	
16SVI058W05	I266-02	970	ml	9/29/16 11:59	2	1000	2	1.03	dirty light yellow

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 9/29/16 12:00 ☐ pHAdj(≤2) @ Prepared By: JMuert

☑ Extraction Ended @ 9/30/16 6:00 ☑ pHAdj(≥11) @ 9/29/16 12:00 Checked By: ML

Comments: pH 6,chlorine not detected. Date 9/30/16

TABLE OF CONTENTS

CLIENT: **HYDROGEOLOGIC, INC.**

PROJECT: **JBER GW SAMPLING**

SDG: **16J080**

SECTION		PAGE
Cover Letter, COC/Sample Receipt Form		1000 – 1006
GC/MS-VOA	**	2000 –
GC/MS-SVOA	METHOD SW3520C/8270C SIM	3000 – 3032
GC-VOA	**	4000 –
GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 10-27-2016
EMAX Batch No.: 16J080

Attn: Jeff DeVaughn

HydroGeologic, Inc.
581 Boston Mills Road, Ste 600
Hudson OH 44236

Subject: Laboratory Report
Project: JBER GW SAMPLING

Enclosed is the Laboratory report for samples received on 10/07/16.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
JBERGW0011	J080-01	10/05/16	WATER	1,4-DIOXANE BY 8270 SIM

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

Laboratory Chain of Custody Record

HGL — Exceeding Expectations

Date: 10/6/2016 Page 1 of 1 COC #: GW-14

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) (Printed Name)

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers
						GW	
41755/WL-02	JBERGW0011	NA	10/5/16	1540	GW	X	2

OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS

Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	
Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	

Total No. of Containers (this page): 4
Total (entire COC): 4

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

Total # of coolers: 1
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

Corrections to original signed COC shown in red text

Jeff DeVaughn

Digitally signed by Jeff DeVaughn
DN: cn=Jeff DeVaughn, o=HydroGeoLogic, Inc., ou=Hudson, Ohio Office, email=jdevaughn@hgl.com, c=US
Date: 2016.10.09 09:00:32 -08'00'

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

1 of 1

Laboratory Chain of Custody Record

HydroGeoLogic, Inc
Exceeding Expectations

Date: 10/6/2016 Page 1 of 1 16J080 COC #: GW-14

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER Groundwater Sampling
Job/P.O. #:

Sampler: (Signature) J. DeVaughn (Printed Name) J. DeVaughn

	Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: 1,4-Dioxane (8270 SIM)	No. of Containers
						GW		
1	41755WL-08	JBERGW0011	NA	10/5/16	1540	GW	X	2

EMAX
1835 W. 205th St.
Torrance, CA 90501

POC: Richard Beauvil
Phone: (310) 618-8889

OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS

Relinquished by	Date	Received by	Date
Signature: J. DeVaughn	10/6/16	Signature: [illegible]	10/7/16
Printed Name: J. DeVaughn	Time: 0900	Printed Name: INDRA PATEL	Time
Company: HGL		Company	
Relinquished by	Date	Received by	Date
Signature		Signature	
Printed Name	Time	Printed Name	Time
Company		Company	

Total No. of Containers (this page): 2
Total (entire COC): 2
DV 10/6/16

NOTES

Preservation
Cool 4±2 Deg C (All Samples)

Matrix
GW: Groundwater

T = 2.4°C

Total # of coolers: 1
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

~~Corrections to original signed COC shown in red text.~~

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

ESST

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 16 JOBO
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7842 8074 7470	Recipient I GATES
☐ EMAX Courier ☐ Client Delivery		Date 10/7/16 Time 0900

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☑ Preservative (if any)	☐ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures	☑ Cooler 1 2.4 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
(Cool, ≤6 °C but not frozen)	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	A - S/N 130532506 SF calibrated	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

Fm 10/7/16

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NB 10/11/16

NOTES/OBSERVATIONS:

LEGEND:

☐ **Continue to next page.**

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in _____	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in _____	D16	Preservation not indicated in _____	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in _____	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	_____
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	_____
D10	No initial/date on corrections in COC/label	D22	_____	R10	_____
D11	Container count mismatch COC vs received	D23	_____	R11	_____
D12	Container size mismatch COC vs received	D24	_____	R12	_____

REVIEWS:

Sample Labeling _____ Date 10-7-16

SRF _____ Date 10/7/16

PM NB Date 10/11/16

Fm 10/7/16

Richard Beauvil

From: DeVaughn, Jeffrey [jdevaughn@hgl.com]
Sent: Sunday, October 09, 2016 10:05 AM
To: Richard Beauvil; Ye Myint
Subject: JBER Final GW Sample Shipment
Attachments: JBER VI Study - Lab COC GW-14 Corrected.pdf

Folks,

Please see the attached corrected COC for the final groundwater sample shipment made last week (one sample).

I noted an incorrect station ID on my electronic COC and I'm not sure if that's what was in the cooler or if I provided a correct hand-written copy.
If the COCs differ, please use the attached.

Also note I am shipping a few empty unused coolers back your way. Our field mobilization is complete!

Thanks!

Jeff DeVaughn, CPG
Senior Project Manager
HydroGeoLogic, Inc.
581 Boston Mills Road
Suite 600
Hudson, Ohio 44236
jdevaughn@hgl.com

330-463-3306 (direct)
330-840-9449 (mobile)

Consider the Environment before printing this email.

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ORIGIN ID:GSTA (907) 762-7000
JEFF DEVAUGHN, HGL

101 W 48TH AVE

ANCHORAGE, AK 99503
UNITED STATES US

SHIP DATE: 060CT16
ACTWGT: 38.10 LB
CAD: 6990279/SSF01722
DIMS: 24x13x13 IN

BILL THIRD PARTY

TO EMAX LABORATORIES
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

T=2.4 C
"D" Thru

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx
Express

FRI - 07 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7842 8074 7470

XH HHRA

DSR
90501
CA-US LAX

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range 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.

LABORATORY REPORT FOR

HYDROGEOLOGIC, INC.

JBER GW SAMPLING

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 16J080

CASE NARRATIVE

Client : HYDROGEOLOGIC, INC.

Project: JBER GW SAMPLING

SDG : 16J080

METHOD SW3520C/8270C SIM
1,4-DIOXANE BY GC/MS SIM

One (1) water sample was received on 10/07/16 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/8270C SIM 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 out at a frequency required by the project. There were two (2) CCVs associated with this SDG: CCV(Datafile ID:RJL012) and CCV(Datafile ID:RJL054). 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. SVJ024WB - 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. SVJ024WL/SVJ024WC 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.

LAB CHRONICLE
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.
Project : JBER GW SAMPLING

SDG NO. : 16J080
Instrument ID : E9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVJ024WB	1	NA	10/17/1616:52	10/11/1616:15	RJL034	RAL010	SVJ024W	Method Blank
LCS1W	SVJ024WL	1	NA	10/17/1617:08	10/11/1616:15	RJL035	RAL010	SVJ024W	Lab Control Sample (LCS)
LCD1W	SVJ024WC	1	NA	10/17/1617:24	10/11/1616:15	RJL036	RAL010	SVJ024W	LCS Duplicate
JBERGW0011	J080-01	1.02	NA	10/17/1617:39	10/11/1616:15	RJL037	RAL010	SVJ024W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client	: HYDROGEOLOGIC, INC.	Date Collected:	10/05/16
Project	: JBER GW SAMPLING	Date Received:	10/07/16
Batch No.	: 16J080	Date Extracted:	10/11/16 16:15
Sample ID:	JBERGW0011	Date Analyzed:	10/17/16 17:39
Lab Samp ID:	J080-01	Dilution Factor:	1.02
Lab File ID:	RJL037	Matrix :	WATER
Ext Btch ID:	SVJ024W	% Moisture :	NA
Calib. Ref.:	RAL010	Instrument ID :	T-QE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.51	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	27.2	40.80	66.7	30-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
1,4-Dioxane BY GC/MS SIM

Client : HYDROGEOLOGIC, INC.	Date Collected: NA
Project : JBER GW SAMPLING	Date Received: 10/11/16
Batch No. : 16J080	Date Extracted: 10/11/16 16:15
Sample ID: MBLK1W	Date Analyzed: 10/17/16 16:52
Lab Samp ID: SVJ024WB	Dilution Factor: 1
Lab File ID: RJL034	Matrix : WATER
Ext Btch ID: SVJ024W	% Moisture : NA
Calib. Ref.: RAL010	Instrument ID : T-QE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
1,4-DIOXANE	ND	0.50	0.13	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	26.7	40.00	66.7	30-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: HYDROGEOLOGIC, INC.
PROJECT: JBER GW SAMPLING
BATCH NO.: 16J080
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVJ024WB	SVJ024WL	SVJ024WC		
LAB FILE ID:	RJL034	RJL035	RJL036		
DATE EXTRACTED:	10/11/1616:15	10/11/1616:15	10/11/1616:15	DATE COLLECTED:	NA
DATE ANALYZED:	10/17/1616:52	10/17/1617:08	10/17/1617:24	DATE RECEIVED:	10/11/16
PREP. BATCH:	SVJ024W	SVJ024W	SVJ024W		
CALIB. REF:	RAL010	RAL010	RAL010		

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 (%)
1,4-Dioxane	ND	40.0	24.5	61	40.0	26.0	65	6	40-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	40.0	28.5	71	40.0	29.2	73	30-130

INITIAL CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING

Lab Code: EMXT Case No.: SAS No.: SDG No.: 16J080

Lab File ID: RAL002 BFB Injection Date : 01/12/16

Instrument ID: TOE9 BFB Injection Time : 10:33

GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	38.13
75	30.0 - 60.0% of mass 95	37.36
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	0.39(0.5)1
174	50.0- 100.0% of mass 95	76.80
175	5.0 - 9.0% of mass 174	5.74(7.5)1
176	95.0 - 101.0% of mass 174	73.93(96.3)1
177	5.0 - 9.0% of mass 176	4.55(6.1)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	SSTD0.05	SVE9A121	RAL003	01/12/16	10:46
2	SSTD0.075	SVE9A122	RAL004	01/12/16	11:00
3	SSTD0.15	SVE9A123	RAL005	01/12/16	11:15
4	SSTD0.2	SVE9A124	RAL006	01/12/16	11:31
5	SSTD0.5	SVE9A125	RAL007	01/12/16	11:46
6	SSTD001	SVE9A126	RAL008	01/12/16	12:02
7	SSTD005	SVE9A127	RAL009	01/12/16	12:18
8	SSTD020	SVE9A128	RAL010	01/12/16	12:33
9	SSTD060	SVE9A129	RAL011	01/12/16	12:49
10	SSTD100	SVE9A1210	RAL012	01/12/16	13:05
11	SSTD020	ISVE9A121	RAL013	01/12/16	13:20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project:ICAL
SDG No.: ICAL
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #		RT #
	12 HOUR STD	1056008		2.09
	UPPER LIMIT	2112016		2.59
	LOWER LIMIT	528004		1.59
	SAMPLE ID			
1	SVE9A121	945510		2.09
2	SVE9A122	919219		2.09
3	SVE9A123	946724		2.09
4	SVE9A124	946102		2.09
5	SVE9A125	981248		2.09
6	SVE9A126	969591		2.08
7	SVE9A127	986337		2.09
8	SVE9A129	999724		2.08
9	SVE9A1210	1168668		2.10
10	ISVE9A121	1099692		2.08

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard 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.

02-04-16

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :01/12/16 10:46 Ending DateTime :01/12/16 13:05
IC File :RAL010 HPChem Method :SVE9A12

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-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RAL003
3	Bromobenzene	.05	.1	.003333	RAL003

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	1.894	1.764	1.808	1.849	1.801	1.770	1.814	1.785	1.813	1.509	1.781	5.77	2.1134
3	Bromobenzene	1.777	1.927	2.198	2.182	2.163	2.195	2.314	2.286	2.294	1.659	2.100	10.96	4.2348

Ave_%RSD : 8.4 Max_%RSD : 11

02-04-16

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :01/12/16 10:46
Spike Units :PPM
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12

IDX	Parameters	.05 10:46 RAL003	.075 11:00 RAL004	.15 11:15 RAL005	.2 11:31 RAL006	.5 11:46 RAL007	1 12:02 RAL008	5 12:18 RAL009	20 12:33 RAL010	60 12:49 RAL011	100 13:05 RAL012	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	2.0868
2	1,4-Dioxane	106	99	102	104	101	99	102	100	102	85	3.4	5.77	2.1134
3	Bromobenzene	85	92	105	104	103	105	110	109	109	79	8.9	10.96	4.2348

02-04-16

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RAL013
IC File :RAL010

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :01/12/16 13:20

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-Dioxane-d8	20.000	0	1099692	1	1	2.083	2.087	0				
2	1,4-Dioxane	20.259	1.3	1983767	1.804	1.781	2.111	2.113	5.77				
3	Bromobenzene	23.972	19.9	2767423	2.517	2.100	4.233	4.235	10.96				

02-04-16

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16A12\RAL013.D Vial: 13
Acq On : 12 Jan 2016 13:20 Operator: KVu
Sample : ISVE9A121 20PPM Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 13 13:44:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	104	0.00
2	T	1,4-Dioxane	20.000	20.259	-1.3	105	0.00
3	S	Bromobenzene	20.000	23.972	-19.9	115	0.00

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

02-04-16

DAILY CALIBRATION(S)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Project: JBER GW SAMPLING
Lab Code: EMXT Case No.: SAS No.: SDG No.: 16J080
Lab File ID: RJL011 BFB Injection Date : 10/17/16
Instrument ID: TOE9 BFB Injection Time : 10:32
GC Column: ZB-5MS ID:0.25mm (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	26.65
75	30.0 - 60.0% of mass 95	43.44
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.36
173	Less than 2.0% of mass 174	1.09(1.2)1
174	50.0- 100.0% of mass 95	89.32
175	5.0 - 9.0% of mass 174	6.72(7.5)1
176	95.0 - 101.0% of mass 174	84.86(95.0)1
177	5.0 - 9.0% of mass 176	4.93(5.8)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	SSTD020	CSVE9A1251	RJL012	10/17/16	11:05
2	MBLK1W	SVJ024WB	RJL034	10/17/16	16:52
3	LCS1W	SVJ024WL	RJL035	10/17/16	17:08
4	LCD1W	SVJ024WC	RJL036	10/17/16	17:24
5	JBERGW0011	J080-01	RJL037	10/17/16	17:39
6	SSTD020	CSVE9A1252	RJL054	10/17/16	22:09

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL010
Instrument ID: TOE9

Project: JBER GW SAMPLING
SDG No.: 16J080
Date Analyzed: 01/12/16
Time Analyzed: 12:33

		IS1(DD8) AREA #	RT #
	12 HOUR STD	1056008	2.09
	UPPER LIMIT	2112016	2.26
	LOWER LIMIT	528004	1.92
	SAMPLE ID		
1	SSTD020	798370	2.07
2	MBLK1W	897831	2.08
3	LCS1W	917816	2.08
4	LCD1W	883930	2.08
5	JBERGW0011	1035975	2.08
6	SSTD020	812117	2.07

IS1 (DD8) = 1,4-Dioxane-d8

AREA UPPER LIMIT = +100% of internal satndard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +10 seconds of internal standard RT
RT LOWER LIMIT = -10 seconds 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 :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RJL012
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :10/17/16 11:05

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-Dioxane-d8	20.000	0	798370	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.044	-4.8	1353779	1.696	1.781	2.099	2.113	5.77				
3	Bromobenzene	19.958	-0.2	1672701	2.095	2.100	4.244	4.235	10.96				

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :01/12/16 10:46
Spike Amount :20 PPM
CC/CV File :RJL054
IC File :RAL010

Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :01/12/16 13:05
HPChem Method :SVE9A12
Date_Time :10/17/16 22:09

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-Dioxane-d8	20.000	0	812117	1	1	2.075	2.087	0				
2	1,4-Dioxane	19.026	-4.9	1375853	1.694	1.781	2.102	2.113	5.77				
3	Bromobenzene	21.979	9.9	1873809	2.307	2.100	4.243	4.235	10.96				

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16J17\RJL012.D Vial: 3
Acq On : 17 Oct 2016 11:05 Operator: KVu
Sample : CSVE9A1251 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 18 10:33:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	76	-0.01
2	T	1,4-Dioxane	20.000	19.043	4.8	72	-0.01
3	S	Bromobenzene	20.000	19.958	0.2	69	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16J17\RJL012.D Vial: 3
Acq On : 17 Oct 2016 11:05 Operator: KVu
Sample : CSVE9A1251 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 18 10:33:23 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	76	-0.01
2	T	1,4-Dioxane	1.781	1.696	4.8	72	-0.01
3	S	Bromobenzene	2.100	2.095	0.2	69	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16J17\RJL054.D Vial: 45
Acq On : 17 Oct 2016 22:09 Operator: KVu
Sample : CSVE9A1252 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 18 11:04:21 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	77	-0.01
2	T	1,4-Dioxane	20.000	19.026	4.9	73	-0.01
3	S	Bromobenzene	20.000	21.979	-9.9	78	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\16J17\RJL054.D Vial: 45
Acq On : 17 Oct 2016 22:09 Operator: KVu
Sample : CSVE9A1252 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 18 11:04:21 2016
Quant Results File: SVE9A12.RES
Quant Method : C:\msdchem\1\METHODS\SVE9A12.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Jan 13 13:39:02 2016
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	77	-0.01
2	T	1,4-Dioxane	1.781	1.694	4.9	73	-0.01
3	S	Bromobenzene	2.100	2.307	-9.9	78	0.00

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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 1/12/16 10:33 End Date/Time: 1/12/16 14:24

ANALYTICAL BATCH: SVE9A128

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RAL001	IBE9A1201	1			
	2	BFBE9A1201				
	3	SVE9A12 1				0.05 ppm 14 Dioxane
	4	2				.075
	5	3				.15
	6	4				.2
	7	5				.5
	8	6				1
	9	7				5
	10	8				20
	11	9				60
	12	10				100
	13	ISVE9A12 1				ICV
SVA001W	14	LOQ-01	1		X	
	15	LOD-01				
SVA002S	16	LOQ-02	1	X		
	17	LOD-02				
						KV 1/12/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-13-01-15	1000
ICV	SS2C-14-19-01	20
DCC /ICAL	SS2C-14-18-03	.05-100
BENZIDINE		
APP 9		
APP 9 ADD		
BFB	SS2C-14-18-02	50

Solvent	ID
CH_2Cl_2	55219
DATA FILE	16A12

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

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-CLP5VOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 10/17/16 10:32 End Date/Time: 10/17/16 22:09

ANALYTICAL BATCH: CSVE9A1251

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RJL010	IBE9A1251				
	011	BFBE9A1251				
	012	CSVE9A1251				
SVJ0225	013	SVJ0225B	1	x		
↓	014	LOQ-09	↓	↓		
↓	015	LOD-09	↓	↓		
SVJ012W	016	SVJ012WB	1		x	
↓	017	↓ WL	↓		↓	
↓	018	↓ WC	↓		↓	
↓	019	LOQ-01	↓		↓	
↓	020	LOD-01	↓		↓	
↓	021	16J030-02	↓		↓	
↓	022	↓ 03	↓		↓	
↓	023	16J034-04	↓		↓	
↓	024	↓ 05	↓		↓	
↓	025	↓ 05M	↓		↓	
↓	026	↓ 05S	↓		↓	
↓	027	↓ 06	↓		↓	Need dil
↓	028	↓ 16	↓		↓	
↓	029	↓ 14	↓		↓	Need dil
↓	030	↓ 20	↓		↓	carryed over
↓	031	16J035-02	↓		↓	
↓	032	↓ 07	↓		↓	Need dil
↓	033	↓ 13	↓		↓	
SVJ024W	034	SVJ024WB	↓		↓	
↓	035	↓ WL	↓		↓	
↓	036	↓ WC	↓		↓	
↓	037	16J080-01	↓		↓	
SVJ031W	038	SVJ031WB	1		x	
↓	039	↓ WL	↓		↓	
↓	040	↓ WC	↓		↓	
↓	041	16J109-01	↓		↓	

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name	ID / Conc. (mg/L)
DFTPP	
INT. STD.	SS2A-13-01-15 / 1000
ICV	
DCC	SS2C-14-32-03 / 20
BENZIDINE	
APP 9	
APP 9 ADD	
BFB	SS2C-14-32-02 / 50
Solvent	ID
CH_2Cl_2	56056
DATA FILE	16J17
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

? Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO000-01 Syringe ID: ☐ 499766-3 ☐

Comments:

Analyzed By: KLV

Date Disposed: 10/18/16

Disposed By: KLV

This page is checked during data review.

3028

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 6 ☐ EMAX-8270D Rev. No. 1 ☐ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AE9-005

Method File: SVE9A12 Tune File: BFB Start Date/Time: 10/17/16 10:32 End Date/Time: 10/17/16 22:09

ANALYTICAL BATCH: CSVE9A1251

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
SVJ031W	RJL042	16J109-02	1		x	
	043	03				
	044	04				
	045	05				
	046	06M				
	047	05S				
	048	07				
	049	08				
	050	09				
	051	16J119-05				
	052	07				
	053	09				
	054	CSVE9A1252				
						VV 10/18/16

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	1/12/16
ICAL ID	SVE9A12
Standards	
Name / ID / Conc. (mg/L)	
DFTPP	
INT. STD.	SS2A-13-01-15 1000
ICV	
DCC	SS2C-14-32-03 20
BENZIDINE	
APP 9	
APP 9 ADD	
BFB	SS2F-14-32-02 50
Solvent	ID
CH_2Cl_2	56056
DATA FILE	16J17
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 499766-3 ☐

Comments:

Analyzed By: VV

Date Disposed: 10/18/16

Disposed By: VV

This page is checked during data review.

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☒ EMAX-3520	5
☐ EMAX-3540	2
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ 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:

Book #: ESV-093
Preparation Batch: SVJ024W
Matrix: WATER
Micropipette ID: 100 uL (P097A-03)
Micropipette ID: 1000 uL (PE00-01)

Standards	ID	Amount Added (ml)
Surrogate (1,4-Dioxane)	SS2B-12-21-01	0.1
LCS/MS (1,4-Dioxane)	SS2B-12-24-02	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	161598
Na_2SO_4	SWIA-003-16-01
H_2SO_4	-
NaOH	SPIB-08-96-04
Silica Sand	-
Silica Gel	-
Reagent Water	SWIA-006-02-21
Residual Chlorine Strip	6271
pH Strip	HC681919
Filter Paper	9769361

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVJ024WB			1
-WL			1
-WC			1
J080-01			1

TUNING	
Sonicator #	Reading

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2		
3		
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: NAT Witnessed By: JM
Standard Added By: NAT Checked By: ML
Extract Received By: JW 10/12/18 Location: SE01 #5
Disposed By: Disposed On:

FileID: SVJ024W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
16SVJ024W01	SVJ024WB	1000	ml	10/11/16 16:53	2	1000	2	1	
16SVJ024W02	SVJ024WL	1000	ml	10/11/16 16:53	2	1000	2	1	1,4DIOXANE
16SVJ024W03	SVJ024WC	1000	ml	10/11/16 16:53	2	1000	2	1	1,4DIOXANE
16SVJ024W04	J080-01	980	ml	10/11/16 16:54	2	1000	2	1.02	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 10/11/16 16:15 ☐ pHAdj(≤2) @ Prepared By: NTran

☑ Extraction Ended @ 10/12/16 10:15 ☑ pHAdj(≥11) @ 10/28/16 16:15 Checked By: ML

Comments: vol. entered after extraction started,cl not detected,pH6. Date 10/12/16

SOP EMAX-3520 Rev. 5

ANALYTICAL REPORT

Job Number: 320-22881-1

Job Description: JBER Soil/Water

For:
HydroGeoLogic Inc
11107 Sunset Hills Road
Suite 400
Reston, VA 20190

Attention: Jeff DeVaughn

Approved for release.
Micah Smith
Project Manager II
11/14/2016 12:04 PM

Micah Smith, Project Manager II
880 Riverside Parkway, West Sacramento, CA, 95605
(925)484-1919
micah.smith@testamericainc.com
11/14/2016

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Method 8081B ICAL Data 905

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Method 8081B PEM Data 1016

Method 8081B CCAL Data 1032

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
D	The reported value is from a dilution.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Metals

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.
D	The reported value is from a dilution.

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: HydroGeoLogic Inc

Project: JBER Soil/Water

Report Number: 320-22881-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT
The samples were received on 10/21/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.2º C.

RECEIPT EXCEPTION
The following sample was received but was not listed on the COC: TRIP BLANK (320-22881-2). This sample was not analyzed.

8260B
Internal standard (ISTD) response for Dioxane-d8 and/or TBA-d9 and/or 2-Butanone-d5 for the following sample was outside acceptance criteria: (CCVC 320-134567/31). This ISTD does not correspond to any of the requested target compounds; therefore, the data have been reported.

The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: JBER-WW001 (320-22881-1). The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 320-134567.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

8270D
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with prep batch 320-134119.

The following sample formed emulsions during the extraction procedure: JBER-WW001 (320-22881-1). The emulsions were broken up using sodium sulfate during the concentration step in prep batch 320-134119.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PESTICIDES
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with prep batch 320-134124.

The following sample formed emulsions during the extraction procedure: JBER-WW001 (320-22881-1). The emulsions were broken up using sodium sulfate during the concentration step in prep batch 320-134124.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

8151A
The following sample was diluted 10X in order to protect analytical instrumentation: JBER-WW001 (320-22881-1). The reporting limits have been adjusted accordingly. Because of this dilution, the surrogate concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

The initial calibration verification (ICV) for MCPP associated with analytical batch 280-349518 recovered above the upper control limit on the confirmation column. The samples associated with this ICV were non-detects for the affected analytes; therefore, the data have been reported from the primary column which is in control.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with prep batch 280-348542.

The following sample formed emulsions during the extraction procedure: JBER-WW001 (320-22881-1). The emulsions were broken up using a pour back on all three MeCl2 clean up steps. Emulsions were broken up on the acid step using a centrifuge on the first and second ether extractions and a pour back on the third ether extraction.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 320-134512 and analytical batch 320-135189 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

7471B
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

FLASHPOINT
A sample duplicate (DUP) for Flashpoint associated with analytical batch 280-350782 was not analyzed as none of the samples in the batch flashed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CYANIDE
Cyanide, Total was detected in method blank MB 280-349597/5-A at a level that was above the DL. This target analyte concentration was less than half the LOQ; therefore, re-extraction and /or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFIDE
A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: a micro distillation method was used which uses 5 times less of the volume for Sulfide.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PH
This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples have been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: JBER-WW001 (320-22881-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: HydroGeoLogic Inc
Project/Site: JBER Soil/Water

TestAmerica Job ID: 320-22881-1

Client Sample ID: JBER-WW001

Lab Sample ID: 320-22881-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
1,1,2,2-Tetrachloroethane	2.8	J D	10	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	39	D	10	1.0	ug/L	10		8260B	Total/NA
Trichloroethene	7.3	J D	10	1.3	ug/L	10		8260B	Total/NA
Bis(2-ethylhexyl) phthalate	1.4	J	9.5	0.95	ug/L	1		8270D	Total/NA
Silver	0.00098	J	0.0010	0.00030	mg/L	1		6020	Total Recoverable
Arsenic	0.017		0.0050	0.0010	mg/L	1		6020	Total Recoverable
Barium	0.12		0.0030	0.00050	mg/L	1		6020	Total Recoverable
Cadmium	0.00083	J	0.0015	0.00050	mg/L	1		6020	Total Recoverable
Chromium	0.17		0.0050	0.0015	mg/L	1		6020	Total Recoverable
Lead	0.015	J	0.0020	0.00060	mg/L	1		6020	Total Recoverable
Mercury	0.00026		0.00025	0.00010	mg/L	1		7470A	Total/NA
Flashpoint	>160		1.00	1.00	Degrees F	1		1010A	Total/NA
Cyanide, Total	0.0025	J	0.010	0.0020	mg/L	1		9012B	Total/NA
Sulfide	0.80	J	4.0	0.79	mg/L	1		9034	Total/NA
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: JBER-WW001

Date Collected: 10/20/16 10:40
Date Received: 10/21/16 09:10

Lab Sample ID: 320-22881-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.0	U	10	1.3	ug/L			10/26/16 19:48	10
1,1,1,2-Tetrachloroethane	4.0	U	10	1.0	ug/L			10/26/16 19:48	10
1,1,1-Trichloroethane	4.0	U	10	1.9	ug/L			10/26/16 19:48	10
1,1,2,2-Tetrachloroethane	**2.8**	**J D**	10	1.5	ug/L			10/26/16 19:48	10
1,1,2-Trichloroethane	8.0	U	10	3.1	ug/L			10/26/16 19:48	10
1,1-Dichloroethane	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
1,1-Dichloroethene	4.0	U	10	1.4	ug/L			10/26/16 19:48	10
1,1-Dichloropropene	4.0	U	10	1.4	ug/L			10/26/16 19:48	10
1,2,3-Trichlorobenzene	4.0	U	10	1.4	ug/L			10/26/16 19:48	10
1,2,3-Trichloropropane	4.0	U	10	1.3	ug/L			10/26/16 19:48	10
1,2,4-Trichlorobenzene	4.0	U	10	1.0	ug/L			10/26/16 19:48	10
1,2,4-Trimethylbenzene	4.0	U	10	1.2	ug/L			10/26/16 19:48	10
1,2-Dibromo-3-Chloropropane	8.0	U	20	3.2	ug/L			10/26/16 19:48	10
1,2-Dibromoethane (EDB)	8.0	U	20	2.2	ug/L			10/26/16 19:48	10
1,2-Dichlorobenzene	4.0	U	10	1.4	ug/L			10/26/16 19:48	10
1,2-Dichloroethane	5.0	U	10	2.2	ug/L			10/26/16 19:48	10
1,2-Dichloropropane	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
1,3,5-Trimethylbenzene	4.0	U	10	1.4	ug/L			10/26/16 19:48	10
1,3-Dichlorobenzene	4.0	U	10	1.1	ug/L			10/26/16 19:48	10
1,3-Dichloropropane	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
1,4-Dichlorobenzene	4.0	U	10	1.3	ug/L			10/26/16 19:48	10
2,2-Dichloropropane	4.0	U	10	1.3	ug/L			10/26/16 19:48	10
2-Chlorotoluene	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
4-Chlorotoluene	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
Bromobenzene	4.0	U	10	1.8	ug/L			10/26/16 19:48	10
Bromochloromethane	4.0	U	10	1.4	ug/L			10/26/16 19:48	10
Bromodichloromethane	4.0	U	10	1.4	ug/L			10/26/16 19:48	10
Bromoform	4.0	U	10	1.0	ug/L			10/26/16 19:48	10
Bromomethane	8.0	U	10	2.9	ug/L			10/26/16 19:48	10
Carbon tetrachloride	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
Chlorobenzene	4.0	U	10	1.2	ug/L			10/26/16 19:48	10
Chloroethane	8.0	U	10	3.4	ug/L			10/26/16 19:48	10
Chloroform	4.0	U	10	1.2	ug/L			10/26/16 19:48	10
Chloromethane	8.0	U	10	2.5	ug/L			10/26/16 19:48	10
cis-1,2-Dichloroethene	**39**	**D**	10	1.0	ug/L			10/26/16 19:48	10
cis-1,3-Dichloropropene	8.0	U	10	2.2	ug/L			10/26/16 19:48	10
Dibromomethane	8.0	U	10	2.1	ug/L			10/26/16 19:48	10
Dichlorodifluoromethane	4.0	U	10	1.6	ug/L			10/26/16 19:48	10
Ethylbenzene	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
Hexachlorobutadiene	8.0	U	10	2.2	ug/L			10/26/16 19:48	10
Isopropylbenzene	4.0	U	10	1.2	ug/L			10/26/16 19:48	10
Methylene Chloride	8.0	U	10	3.5	ug/L			10/26/16 19:48	10
m-Xylene & p-Xylene	4.0	U	10	1.8	ug/L			10/26/16 19:48	10
Naphthalene	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
n-Butylbenzene	4.0	U	10	1.2	ug/L			10/26/16 19:48	10
N-Propylbenzene	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
o-Xylene	4.0	U	10	1.0	ug/L			10/26/16 19:48	10
p-Isopropyltoluene	4.0	U	10	1.3	ug/L			10/26/16 19:48	10
sec-Butylbenzene	4.0	U	10	1.2	ug/L			10/26/16 19:48	10

Client Sample ID: JBER-WW001

Date Collected: 10/20/16 10:40
Date Received: 10/21/16 09:10

Lab Sample ID: 320-22881-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
tert-Butylbenzene	4.0	U	10	1.4	ug/L			10/26/16 19:48	10
Tetrachloroethene	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
Toluene	8.0	U	10	2.5	ug/L			10/26/16 19:48	10
trans-1,2-Dichloroethene	4.0	U	10	1.1	ug/L			10/26/16 19:48	10
trans-1,3-Dichloropropene	4.0	U	10	1.5	ug/L			10/26/16 19:48	10
Trichloroethene	**7.3**	**J D**	10	1.3	ug/L			10/26/16 19:48	10
Trichlorofluoromethane	8.0	U	10	2.3	ug/L			10/26/16 19:48	10
Vinyl chloride	8.0	U	10	2.2	ug/L			10/26/16 19:48	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*81 - 118*		*10/26/16 19:48*	*10*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*		*10/26/16 19:48*	*10*
Dibromofluoromethane (Surr)	*101*		*80 - 119*		*10/26/16 19:48*	*10*
Toluene-d8 (Surr)	*96*		*89 - 112*		*10/26/16 19:48*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	2.8	U	9.5	1.0	ug/L		10/24/16 10:38	10/27/16 16:43	1
Acenaphthylene	2.8	U	9.5	1.0	ug/L		10/24/16 10:38	10/27/16 16:43	1
Anthracene	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
Azobenzene	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
Benzo[a]anthracene	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
Benzo[b]fluoranthene	2.8	U	9.5	1.1	ug/L		10/24/16 10:38	10/27/16 16:43	1
Benzo[k]fluoranthene	2.8	U	9.5	0.91	ug/L		10/24/16 10:38	10/27/16 16:43	1
Benzoic acid	47	U	71	19	ug/L		10/24/16 10:38	10/27/16 16:43	1
Benzo[g,h,i]perylene	2.8	U	9.5	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
Benzo[a]pyrene	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
Benzyl alcohol	5.7	U	9.5	2.5	ug/L		10/24/16 10:38	10/27/16 16:43	1
Bis(2-chloroethoxy)methane	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
Bis(2-chloroethyl)ether	2.8	U	9.5	1.4	ug/L		10/24/16 10:38	10/27/16 16:43	1
2,2'-oxybis[1-chloropropane]	2.8	U	9.5	1.2	ug/L		10/24/16 10:38	10/27/16 16:43	1
Bis(2-ethylhexyl) phthalate	**1.4**	**J**	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
4-Bromophenyl phenyl ether	2.8	U	9.5	1.0	ug/L		10/24/16 10:38	10/27/16 16:43	1
Butyl benzyl phthalate	2.8	U	9.5	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
Carbazole	2.8	U	9.5	1.1	ug/L		10/24/16 10:38	10/27/16 16:43	1
4-Chloroaniline	5.7	U	9.5	1.9	ug/L		10/24/16 10:38	10/27/16 16:43	1
4-Chloro-3-methylphenol	5.7	U	9.5	1.9	ug/L		10/24/16 10:38	10/27/16 16:43	1
2-Chlorophenol	5.7	U	9.5	1.5	ug/L		10/24/16 10:38	10/27/16 16:43	1
2-Chloronaphthalene	2.8	U	9.5	1.2	ug/L		10/24/16 10:38	10/27/16 16:43	1
4-Chlorophenyl phenyl ether	2.8	U	9.5	1.0	ug/L		10/24/16 10:38	10/27/16 16:43	1
Chrysene	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
Dibenz(a,h)anthracene	5.7	U	9.5	1.9	ug/L		10/24/16 10:38	10/27/16 16:43	1
Dibenzofuran	2.8	U	9.5	1.0	ug/L		10/24/16 10:38	10/27/16 16:43	1
Di-n-butyl phthalate	2.8	U	9.5	1.0	ug/L		10/24/16 10:38	10/27/16 16:43	1
1,2-Dichlorobenzene	2.8	U	9.5	1.4	ug/L		10/24/16 10:38	10/27/16 16:43	1
1,3-Dichlorobenzene	2.8	U	9.5	1.4	ug/L		10/24/16 10:38	10/27/16 16:43	1
1,4-Dichlorobenzene	2.8	U	9.5	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
3,3'-Dichlorobenzidine	2.8	U	47	0.91	ug/L		10/24/16 10:38	10/27/16 16:43	1
2,4-Dichlorophenol	5.7	U	9.5	2.5	ug/L		10/24/16 10:38	10/27/16 16:43	1

Client Sample ID: JBER-WW001

Date Collected: 10/20/16 10:40
Date Received: 10/21/16 09:10

Lab Sample ID: 320-22881-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Diethyl phthalate	2.8	U	9.5	0.88	ug/L		10/24/16 10:38	10/27/16 16:43	1
2,4-Dimethylphenol	5.7	U	9.5	2.1	ug/L		10/24/16 10:38	10/27/16 16:43	1
Dimethyl phthalate	2.8	U	9.5	0.83	ug/L		10/24/16 10:38	10/27/16 16:43	1
4,6-Dinitro-2-methylphenol	5.7	U	57	2.1	ug/L		10/24/16 10:38	10/27/16 16:43	1
2,4-Dinitrophenol	47	U	57	19	ug/L		10/24/16 10:38	10/27/16 16:43	1
2,4-Dinitrotoluene	5.7	U	9.5	1.9	ug/L		10/24/16 10:38	10/27/16 16:43	1
2,6-Dinitrotoluene	5.7	U	9.5	1.9	ug/L		10/24/16 10:38	10/27/16 16:43	1
Di-n-octyl phthalate	2.8	U	9.5	1.4	ug/L		10/24/16 10:38	10/27/16 16:43	1
Fluoranthene	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
Fluorene	2.8	U	9.5	0.88	ug/L		10/24/16 10:38	10/27/16 16:43	1
Hexachlorobenzene	2.8	U	9.5	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
Hexachlorobutadiene	2.8	U	9.5	1.2	ug/L		10/24/16 10:38	10/27/16 16:43	1
Hexachloroethane	2.8	U	9.5	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
Indeno[1,2,3-cd]pyrene	9.5	U	14	3.2	ug/L		10/24/16 10:38	10/27/16 16:43	1
Isophorone	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
2-Methylnaphthalene	2.8	U	9.5	1.4	ug/L		10/24/16 10:38	10/27/16 16:43	1
2-Methylphenol	2.8	U	9.5	0.88	ug/L		10/24/16 10:38	10/27/16 16:43	1
3 & 4 Methylphenol	2.8	U	9.5	1.1	ug/L		10/24/16 10:38	10/27/16 16:43	1
Naphthalene	2.8	U	9.5	1.2	ug/L		10/24/16 10:38	10/27/16 16:43	1
2-Nitroaniline	5.7	U	47	1.9	ug/L		10/24/16 10:38	10/27/16 16:43	1
3-Nitroaniline	2.8	U	47	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
4-Nitroaniline	2.8	U	47	1.4	ug/L		10/24/16 10:38	10/27/16 16:43	1
Nitrobenzene	5.7	U	9.5	1.5	ug/L		10/24/16 10:38	10/27/16 16:43	1
2-Nitrophenol	5.7	U	9.5	1.8	ug/L		10/24/16 10:38	10/27/16 16:43	1
4-Nitrophenol	19	U	57	5.8	ug/L		10/24/16 10:38	10/27/16 16:43	1
N-Nitrosodimethylamine	2.8	U	14	0.91	ug/L		10/24/16 10:38	10/27/16 16:43	1
N-Nitrosodiphenylamine	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
N-Nitrosodi-n-propylamine	2.8	U	9.5	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
Pentachlorophenol	19	U	57	4.7	ug/L		10/24/16 10:38	10/27/16 16:43	1
Phenanthrene	2.8	U	9.5	0.95	ug/L		10/24/16 10:38	10/27/16 16:43	1
Phenol	2.8	U	9.5	1.0	ug/L		10/24/16 10:38	10/27/16 16:43	1
Pyrene	2.8	U	9.5	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
1,2,4-Trichlorobenzene	2.8	U	9.5	1.3	ug/L		10/24/16 10:38	10/27/16 16:43	1
2,4,5-Trichlorophenol	5.7	U	9.5	1.9	ug/L		10/24/16 10:38	10/27/16 16:43	1
2,4,6-Trichlorophenol	5.7	U	9.5	1.9	ug/L		10/24/16 10:38	10/27/16 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*80*		*43 - 140*	*10/24/16 10:38*	*10/27/16 16:43*	*1*
2-Fluorobiphenyl (Surr)	*67*		*44 - 119*	*10/24/16 10:38*	*10/27/16 16:43*	*1*
2-Fluorophenol (Surr)	*38*		*19 - 119*	*10/24/16 10:38*	*10/27/16 16:43*	*1*
Nitrobenzene-d5 (Surr)	*67*		*44 - 120*	*10/24/16 10:38*	*10/27/16 16:43*	*1*
Phenol-d5 (Surr)	*24*		*10 - 50*	*10/24/16 10:38*	*10/27/16 16:43*	*1*
Terphenyl-d14 (Surr)	*53*		*50 - 134*	*10/24/16 10:38*	*10/27/16 16:43*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	0.024	U	0.047	0.0066	ug/L		10/24/16 10:43	11/01/16 14:49	1
gamma-BHC (Lindane)	0.011	U M	0.047	0.0057	ug/L		10/24/16 10:43	11/01/16 14:49	1
beta-BHC	0.024	U M	0.047	0.0066	ug/L		10/24/16 10:43	11/01/16 14:49	1
delta-BHC	0.024	U M	0.047	0.010	ug/L		10/24/16 10:43	11/01/16 14:49	1

Client Sample ID: JBER-WW001

Date Collected: 10/20/16 10:40
Date Received: 10/21/16 09:10

Lab Sample ID: 320-22881-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	0.024	U M	0.047	0.0066	ug/L		10/24/16 10:43	11/01/16 14:49	1
Aldrin	0.011	U	0.047	0.0057	ug/L		10/24/16 10:43	11/01/16 14:49	1
Heptachlor epoxide	0.011	U	0.047	0.0057	ug/L		10/24/16 10:43	11/01/16 14:49	1
gamma-Chlordane	0.024	U	0.047	0.011	ug/L		10/24/16 10:43	11/01/16 14:49	1
alpha-Chlordane	0.011	U	0.047	0.0057	ug/L		10/24/16 10:43	11/01/16 14:49	1
Endosulfan I	0.011	U	0.047	0.0057	ug/L		10/24/16 10:43	11/01/16 14:49	1
4,4'-DDE	0.024	U	0.047	0.011	ug/L		10/24/16 10:43	11/01/16 14:49	1
Dieldrin	0.024	U	0.047	0.011	ug/L		10/24/16 10:43	11/01/16 14:49	1
Endrin	0.024	U	0.047	0.011	ug/L		10/24/16 10:43	11/01/16 14:49	1
4,4'-DDD	0.024	U	0.047	0.011	ug/L		10/24/16 10:43	11/01/16 14:49	1
Endosulfan II	0.024	U	0.047	0.011	ug/L		10/24/16 10:43	11/01/16 14:49	1
4,4'-DDT	0.024	U	0.047	0.011	ug/L		10/24/16 10:43	11/01/16 14:49	1
Endrin aldehyde	0.076	U	0.095	0.024	ug/L		10/24/16 10:43	11/01/16 14:49	1
Endosulfan sulfate	0.024	U	0.047	0.011	ug/L		10/24/16 10:43	11/01/16 14:49	1
Methoxychlor	0.076	U	0.095	0.040	ug/L		10/24/16 10:43	11/01/16 14:49	1
Endrin ketone	0.076	U	0.095	0.019	ug/L		10/24/16 10:43	11/01/16 14:49	1
Toxaphene	0.95	U	1.9	0.48	ug/L		10/24/16 10:43	11/01/16 14:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*44 - 124*	*10/24/16 10:43*	*11/01/16 14:49*	*1*
Tetrachloro-m-xylene	*88*		*44 - 124*	*10/24/16 10:43*	*11/01/16 14:49*	*1*
DCB Decachlorobiphenyl	*36*		*12 - 131*	*10/24/16 10:43*	*11/01/16 14:49*	*1*
DCB Decachlorobiphenyl	*43*		*12 - 131*	*10/24/16 10:43*	*11/01/16 14:49*	*1*

Method: 8151A DOD - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	5.8	U	9.6	1.8	ug/L		10/27/16 12:46	11/02/16 21:32	10
2,4-D	5.8	U	38	2.0	ug/L		10/27/16 12:46	11/02/16 21:32	10
2,4-DB	8.8	U	38	3.5	ug/L		10/27/16 12:46	11/02/16 21:32	10
Dalapon	18	U	19	8.7	ug/L		10/27/16 12:46	11/02/16 21:32	10
Dicamba	5.8	U	19	1.4	ug/L		10/27/16 12:46	11/02/16 21:32	10
Dichlorprop	18	U	38	6.2	ug/L		10/27/16 12:46	11/02/16 21:32	10
MCPA	580	U	3800	160	ug/L		10/27/16 12:46	11/02/16 21:32	10
Silvex (2,4,5-TP)	5.8	U	9.6	1.6	ug/L		10/27/16 12:46	11/02/16 21:32	10
MCPP	880	U	3800	320	ug/L		10/27/16 12:46	11/02/16 21:32	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*62*		*32 - 138*	*10/27/16 12:46*	*11/02/16 21:32*	*10*

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.00098**	**J**	0.0010	0.00030	mg/L		10/26/16 07:00	10/28/16 14:37	1
Arsenic	**0.017**		0.0050	0.0010	mg/L		10/26/16 07:00	10/28/16 14:37	1
Barium	**0.12**		0.0030	0.00050	mg/L		10/26/16 07:00	10/28/16 14:37	1
Cadmium	**0.00083**	**J**	0.0015	0.00050	mg/L		10/26/16 07:00	10/28/16 14:37	1
Chromium	**0.17**		0.0050	0.0015	mg/L		10/26/16 07:00	10/28/16 14:37	1
Lead	**0.015**	**J**	0.0020	0.00060	mg/L		10/26/16 07:00	10/28/16 14:37	1
Selenium	0.0020	U	0.0030	0.0010	mg/L		10/26/16 07:00	10/28/16 14:37	1

Client Sample ID: JBER-WW001

Date Collected: 10/20/16 10:40
Date Received: 10/21/16 09:10

Lab Sample ID: 320-22881-1

Matrix: Water

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00026		0.00025	0.00010	mg/L		10/25/16 11:14	10/25/16 15:02	1

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>160		1.00	1.00	Degrees F			11/10/16 09:30	1
Cyanide, Total	0.0025	J	0.010	0.0020	mg/L		11/03/16 05:41	11/03/16 10:17	1
Sulfide	0.80	J	4.0	0.79	mg/L		10/26/16 17:14	10/26/16 17:18	1
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			10/24/16 09:10	1

Default Detection Limits

Client: HydroGeoLogic Inc
Project/Site: JBER Soil/Water

TestAmerica Job ID: 320-22881-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	LOQ	DL	Units	Method
1,1,1,2-Tetrachloroethane	1.0	0.10	ug/L	8260B
1,1,1-Trichloroethane	1.0	0.19	ug/L	8260B
1,1,2,2-Tetrachloroethane	1.0	0.15	ug/L	8260B
1,1,2-Trichloroethane	1.0	0.31	ug/L	8260B
1,1-Dichloroethane	1.0	0.15	ug/L	8260B
1,1-Dichloroethene	1.0	0.14	ug/L	8260B
1,1-Dichloropropene	1.0	0.14	ug/L	8260B
1,2,3-Trichlorobenzene	1.0	0.14	ug/L	8260B
1,2,3-Trichloropropane	1.0	0.13	ug/L	8260B
1,2,4-Trichlorobenzene	1.0	0.10	ug/L	8260B
1,2,4-Trimethylbenzene	1.0	0.12	ug/L	8260B
1,2-Dibromo-3-Chloropropane	2.0	0.32	ug/L	8260B
1,2-Dibromoethane (EDB)	2.0	0.22	ug/L	8260B
1,2-Dichlorobenzene	1.0	0.14	ug/L	8260B
1,2-Dichloroethane	1.0	0.22	ug/L	8260B
1,2-Dichloropropane	1.0	0.15	ug/L	8260B
1,3,5-Trimethylbenzene	1.0	0.14	ug/L	8260B
1,3-Dichlorobenzene	1.0	0.11	ug/L	8260B
1,3-Dichloropropane	1.0	0.15	ug/L	8260B
1,4-Dichlorobenzene	1.0	0.13	ug/L	8260B
2,2-Dichloropropane	1.0	0.13	ug/L	8260B
2-Chlorotoluene	1.0	0.15	ug/L	8260B
4-Chlorotoluene	1.0	0.15	ug/L	8260B
Benzene	1.0	0.13	ug/L	8260B
Bromobenzene	1.0	0.18	ug/L	8260B
Bromochloromethane	1.0	0.14	ug/L	8260B
Bromodichloromethane	1.0	0.14	ug/L	8260B
Bromoform	1.0	0.10	ug/L	8260B
Bromomethane	1.0	0.29	ug/L	8260B
Carbon tetrachloride	1.0	0.15	ug/L	8260B
Chlorobenzene	1.0	0.12	ug/L	8260B
Chloroethane	1.0	0.34	ug/L	8260B
Chloroform	1.0	0.12	ug/L	8260B
Chloromethane	1.0	0.25	ug/L	8260B
cis-1,2-Dichloroethene	1.0	0.10	ug/L	8260B
cis-1,3-Dichloropropene	1.0	0.22	ug/L	8260B
Dibromomethane	1.0	0.21	ug/L	8260B
Dichlorodifluoromethane	1.0	0.16	ug/L	8260B
Ethylbenzene	1.0	0.15	ug/L	8260B
Hexachlorobutadiene	1.0	0.22	ug/L	8260B
Isopropylbenzene	1.0	0.12	ug/L	8260B
Methylene Chloride	1.0	0.35	ug/L	8260B
m-Xylene & p-Xylene	1.0	0.18	ug/L	8260B
Naphthalene	1.0	0.15	ug/L	8260B
n-Butylbenzene	1.0	0.12	ug/L	8260B
N-Propylbenzene	1.0	0.15	ug/L	8260B
o-Xylene	1.0	0.10	ug/L	8260B
p-Isopropyltoluene	1.0	0.13	ug/L	8260B
sec-Butylbenzene	1.0	0.12	ug/L	8260B
Styrene	1.0	0.15	ug/L	8260B
tert-Butylbenzene	1.0	0.14	ug/L	8260B
Tetrachloroethene	1.0	0.15	ug/L	8260B

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	LOQ	DL	Units	Method
Toluene	1.0	0.25	ug/L	8260B
trans-1,2-Dichloroethene	1.0	0.11	ug/L	8260B
trans-1,3-Dichloropropene	1.0	0.15	ug/L	8260B
Trichloroethene	1.0	0.13	ug/L	8260B
Trichlorofluoromethane	1.0	0.23	ug/L	8260B
Vinyl chloride	1.0	0.22	ug/L	8260B

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Prep: 3510C

Analyte	LOQ	DL	Units	Method
1,2,4-Trichlorobenzene	10	1.4	ug/L	8270D
1,2-Dichlorobenzene	10	1.5	ug/L	8270D
1,3-Dichlorobenzene	10	1.5	ug/L	8270D
1,4-Dichlorobenzene	10	1.4	ug/L	8270D
2,2'-oxybis[1-chloropropane]	10	1.3	ug/L	8270D
2,4,5-Trichlorophenol	10	2.0	ug/L	8270D
2,4,6-Trichlorophenol	10	2.0	ug/L	8270D
2,4-Dichlorophenol	10	2.6	ug/L	8270D
2,4-Dimethylphenol	10	2.2	ug/L	8270D
2,4-Dinitrophenol	60	20	ug/L	8270D
2,4-Dinitrotoluene	10	2.0	ug/L	8270D
2,6-Dinitrotoluene	10	2.0	ug/L	8270D
2-Chloronaphthalene	10	1.3	ug/L	8270D
2-Chlorophenol	10	1.6	ug/L	8270D
2-Methylnaphthalene	10	1.5	ug/L	8270D
2-Methylphenol	10	0.93	ug/L	8270D
2-Nitroaniline	50	2.0	ug/L	8270D
2-Nitrophenol	10	1.9	ug/L	8270D
3 & 4 Methylphenol	10	1.2	ug/L	8270D
3,3'-Dichlorobenzidine	50	0.96	ug/L	8270D
3-Nitroaniline	50	1.4	ug/L	8270D
4,6-Dinitro-2-methylphenol	60	2.2	ug/L	8270D
4-Bromophenyl phenyl ether	10	1.1	ug/L	8270D
4-Chloro-3-methylphenol	10	2.0	ug/L	8270D
4-Chloroaniline	10	2.0	ug/L	8270D
4-Chlorophenyl phenyl ether	10	1.1	ug/L	8270D
4-Nitroaniline	50	1.5	ug/L	8270D
4-Nitrophenol	60	6.1	ug/L	8270D
Acenaphthene	10	1.1	ug/L	8270D
Acenaphthylene	10	1.1	ug/L	8270D
Anthracene	10	1.0	ug/L	8270D
Azobenzene	10	1.0	ug/L	8270D
Benzo[a]anthracene	10	1.0	ug/L	8270D
Benzo[a]pyrene	10	1.0	ug/L	8270D
Benzo[b]fluoranthene	10	1.2	ug/L	8270D
Benzo[g,h,i]perylene	10	1.4	ug/L	8270D
Benzo[k]fluoranthene	10	0.96	ug/L	8270D
Benzoic acid	75	20	ug/L	8270D
Benzyl alcohol	10	2.6	ug/L	8270D
Bis(2-chloroethoxy)methane	10	1.0	ug/L	8270D
Bis(2-chloroethyl)ether	10	1.5	ug/L	8270D

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Prep: 3510C

Analyte	LOQ	DL	Units	Method
Bis(2-ethylhexyl) phthalate	10	1.0	ug/L	8270D
Butyl benzyl phthalate	10	1.4	ug/L	8270D
Carbazole	10	1.2	ug/L	8270D
Chrysene	10	1.0	ug/L	8270D
Dibenz(a,h)anthracene	10	2.0	ug/L	8270D
Dibenzofuran	10	1.1	ug/L	8270D
Diethyl phthalate	10	0.93	ug/L	8270D
Dimethyl phthalate	10	0.88	ug/L	8270D
Di-n-butyl phthalate	10	1.1	ug/L	8270D
Di-n-octyl phthalate	10	1.5	ug/L	8270D
Fluoranthene	10	1.0	ug/L	8270D
Fluorene	10	0.93	ug/L	8270D
Hexachlorobenzene	10	1.4	ug/L	8270D
Hexachlorobutadiene	10	1.3	ug/L	8270D
Hexachloroethane	10	1.4	ug/L	8270D
Indeno[1,2,3-cd]pyrene	15	3.4	ug/L	8270D
Isophorone	10	1.0	ug/L	8270D
Naphthalene	10	1.3	ug/L	8270D
Nitrobenzene	10	1.6	ug/L	8270D
N-Nitrosodimethylamine	15	0.96	ug/L	8270D
N-Nitrosodi-n-propylamine	10	1.4	ug/L	8270D
N-Nitrosodiphenylamine	10	1.0	ug/L	8270D
Pentachlorophenol	60	5.0	ug/L	8270D
Phenanthrene	10	1.0	ug/L	8270D
Phenol	10	1.1	ug/L	8270D
Pyrene	10	1.4	ug/L	8270D

Method: 8081B - Organochlorine Pesticides (GC)

Prep: 3510C

Analyte	LOQ	DL	Units	Method
4,4'-DDD	0.050	0.012	ug/L	8081B
4,4'-DDE	0.050	0.012	ug/L	8081B
4,4'-DDT	0.050	0.012	ug/L	8081B
Aldrin	0.050	0.0060	ug/L	8081B
alpha-BHC	0.050	0.0070	ug/L	8081B
alpha-Chlordane	0.050	0.0060	ug/L	8081B
beta-BHC	0.050	0.0070	ug/L	8081B
delta-BHC	0.050	0.011	ug/L	8081B
Dieldrin	0.050	0.012	ug/L	8081B
Endosulfan I	0.050	0.0060	ug/L	8081B
Endosulfan II	0.050	0.012	ug/L	8081B
Endosulfan sulfate	0.050	0.012	ug/L	8081B
Endrin	0.050	0.012	ug/L	8081B
Endrin aldehyde	0.10	0.025	ug/L	8081B
Endrin ketone	0.10	0.020	ug/L	8081B
gamma-BHC (Lindane)	0.050	0.0060	ug/L	8081B
gamma-Chlordane	0.050	0.012	ug/L	8081B
Heptachlor	0.050	0.0070	ug/L	8081B
Heptachlor epoxide	0.050	0.0060	ug/L	8081B
Methoxychlor	0.10	0.042	ug/L	8081B

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Prep: 3510C

Analyte	LOQ	DL	Units	Method
Toxaphene	2.0	0.51	ug/L	8081B

Method: 8151A DOD - Herbicides (GC)

Prep: 8151A

Analyte	LOQ	DL	Units	Method
2,4,5-T	1.0	0.19	ug/L	8151A DOD
2,4-D	4.0	0.21	ug/L	8151A DOD
2,4-DB	4.0	0.36	ug/L	8151A DOD
Dalapon	2.0	0.91	ug/L	8151A DOD
Dicamba	2.0	0.15	ug/L	8151A DOD
Dichlorprop	4.0	0.65	ug/L	8151A DOD
MCPA	400	17	ug/L	8151A DOD
MCPP	400	33	ug/L	8151A DOD
Silvex (2,4,5-TP)	1.0	0.17	ug/L	8151A DOD

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Prep: 3005A

Analyte	LOQ	DL	Units	Method
Arsenic	0.0050	0.0010	mg/L	6020
Barium	0.0030	0.00050	mg/L	6020
Cadmium	0.0015	0.00050	mg/L	6020
Chromium	0.0050	0.0015	mg/L	6020
Lead	0.0020	0.00060	mg/L	6020
Selenium	0.0030	0.0010	mg/L	6020
Silver	0.0010	0.00030	mg/L	6020

Method: 7470A - Mercury (CVAA)

Prep: 7470A

Analyte	LOQ	DL	Units	Method
Mercury	0.00025	0.00010	mg/L	7470A

General Chemistry

Analyte	LOQ	DL	Units	Method
Flashpoint	1.00	1.00	Degrees F	1010A
pH adj. to 25 deg C	0.1	0.1	SU	9040C

General Chemistry

Prep: 9012B

Analyte	LOQ	DL	Units	Method
Cyanide, Total	0.010	0.0020	mg/L	9012B

General Chemistry

Prep: 9030B

Analyte	LOQ	DL	Units	Method
Sulfide	4.0	0.79	mg/L	9034

Surrogate Summary

Client: HydroGeoLogic Inc
Project/Site: JBER Soil/Water

TestAmerica Job ID: 320-22881-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(81-118)	(85-114)	(80-119)	(89-112)
320-22881-1	JBER-WW001	110	99	101	96
LCS 320-134567/5	Lab Control Sample	105	99	98	95
LCSD 320-134567/6	Lab Control Sample Dup	109	102	100	99
MB 320-134567/10	Method Blank	109	102	99	96

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(43-140)	(44-119)	(19-119)	(44-120)	(10-50)	(50-134)
320-22881-1	JBER-WW001	80	67	38	67	24	53
LCS 320-134119/2-A	Lab Control Sample	94	82	55	76	36	91
LCSD 320-134119/3-A	Lab Control Sample Dup	92	80	56	79	37	90
MB 320-134119/1-A	Method Blank	77	77	49	75	33	86

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(44-124)	(44-124)	(12-131)	(12-131)
320-22881-1	JBER-WW001	70	88	36	43
LCS 320-134124/2-A	Lab Control Sample	90		75	
LCS 320-134124/5-A	Lab Control Sample	85 M		29 M	
LCSD 320-134124/3-A	Lab Control Sample Dup	87		70	
MB 320-134124/1-A	Method Blank	86	87	68	67

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Surrogate Summary

Client: HydroGeoLogic Inc
Project/Site: JBER Soil/Water

TestAmerica Job ID: 320-22881-1

Method: 8151A DOD - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCPA1 (32-138)
320-22881-1	JBER-WW001	62
LCS 280-348542/2-A	Lab Control Sample	67
LCSD 280-348542/3-A	Lab Control Sample Dup	65
MB 280-348542/1-A	Method Blank	73

Surrogate Legend

DCPA = 2,4-Dichlorophenylacetic acid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 320-134567/10
Matrix: Water
Analysis Batch: 134567

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.40	U	1.0	0.13	ug/L			10/26/16 13:30	1
1,1,1,2-Tetrachloroethane	0.40	U	1.0	0.10	ug/L			10/26/16 13:30	1
1,1,1-Trichloroethane	0.40	U	1.0	0.19	ug/L			10/26/16 13:30	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
1,1,2-Trichloroethane	0.80	U	1.0	0.31	ug/L			10/26/16 13:30	1
1,1-Dichloroethane	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
1,1-Dichloroethene	0.40	U	1.0	0.14	ug/L			10/26/16 13:30	1
1,1-Dichloropropene	0.40	U	1.0	0.14	ug/L			10/26/16 13:30	1
1,2,3-Trichlorobenzene	0.40	U	1.0	0.14	ug/L			10/26/16 13:30	1
1,2,3-Trichloropropane	0.40	U	1.0	0.13	ug/L			10/26/16 13:30	1
1,2,4-Trichlorobenzene	0.40	U	1.0	0.10	ug/L			10/26/16 13:30	1
1,2,4-Trimethylbenzene	0.40	U	1.0	0.12	ug/L			10/26/16 13:30	1
1,2-Dibromo-3-Chloropropane	0.80	U	2.0	0.32	ug/L			10/26/16 13:30	1
1,2-Dibromoethane (EDB)	0.80	U	2.0	0.22	ug/L			10/26/16 13:30	1
1,2-Dichlorobenzene	0.40	U	1.0	0.14	ug/L			10/26/16 13:30	1
1,2-Dichloroethane	0.50	U	1.0	0.22	ug/L			10/26/16 13:30	1
1,2-Dichloropropane	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
1,3,5-Trimethylbenzene	0.40	U	1.0	0.14	ug/L			10/26/16 13:30	1
1,3-Dichlorobenzene	0.40	U	1.0	0.11	ug/L			10/26/16 13:30	1
1,3-Dichloropropane	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
1,4-Dichlorobenzene	0.40	U	1.0	0.13	ug/L			10/26/16 13:30	1
2,2-Dichloropropane	0.40	U	1.0	0.13	ug/L			10/26/16 13:30	1
2-Chlorotoluene	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
4-Chlorotoluene	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
Bromobenzene	0.40	U	1.0	0.18	ug/L			10/26/16 13:30	1
Bromochloromethane	0.40	U	1.0	0.14	ug/L			10/26/16 13:30	1
Bromodichloromethane	0.40	U	1.0	0.14	ug/L			10/26/16 13:30	1
Bromoform	0.40	U	1.0	0.10	ug/L			10/26/16 13:30	1
Bromomethane	0.80	U	1.0	0.29	ug/L			10/26/16 13:30	1
Carbon tetrachloride	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
Chlorobenzene	0.40	U	1.0	0.12	ug/L			10/26/16 13:30	1
Chloroethane	0.80	U	1.0	0.34	ug/L			10/26/16 13:30	1
Chloroform	0.40	U	1.0	0.12	ug/L			10/26/16 13:30	1
Chloromethane	0.80	U	1.0	0.25	ug/L			10/26/16 13:30	1
cis-1,2-Dichloroethene	0.40	U	1.0	0.10	ug/L			10/26/16 13:30	1
cis-1,3-Dichloropropene	0.80	U	1.0	0.22	ug/L			10/26/16 13:30	1
Dibromomethane	0.80	U	1.0	0.21	ug/L			10/26/16 13:30	1
Dichlorodifluoromethane	0.40	U	1.0	0.16	ug/L			10/26/16 13:30	1
Ethylbenzene	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
Hexachlorobutadiene	0.80	U	1.0	0.22	ug/L			10/26/16 13:30	1
Isopropylbenzene	0.40	U	1.0	0.12	ug/L			10/26/16 13:30	1
Methylene Chloride	0.80	U	1.0	0.35	ug/L			10/26/16 13:30	1
m-Xylene & p-Xylene	0.40	U	1.0	0.18	ug/L			10/26/16 13:30	1
Naphthalene	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
n-Butylbenzene	0.40	U	1.0	0.12	ug/L			10/26/16 13:30	1
N-Propylbenzene	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
o-Xylene	0.40	U	1.0	0.10	ug/L			10/26/16 13:30	1
p-Isopropyltoluene	0.40	U	1.0	0.13	ug/L			10/26/16 13:30	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 320-134567/10
Matrix: Water
Analysis Batch: 134567

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.40	U	1.0	0.12	ug/L			10/26/16 13:30	1
Styrene	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
tert-Butylbenzene	0.40	U	1.0	0.14	ug/L			10/26/16 13:30	1
Tetrachloroethene	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
Toluene	0.80	U	1.0	0.25	ug/L			10/26/16 13:30	1
trans-1,2-Dichloroethene	0.40	U	1.0	0.11	ug/L			10/26/16 13:30	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.15	ug/L			10/26/16 13:30	1
Trichloroethene	0.40	U	1.0	0.13	ug/L			10/26/16 13:30	1
Trichlorofluoromethane	0.80	U	1.0	0.23	ug/L			10/26/16 13:30	1
Vinyl chloride	0.80	U	1.0	0.22	ug/L			10/26/16 13:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*81 - 118*		*10/26/16 13:30*	*1*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/26/16 13:30*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 119*		*10/26/16 13:30*	*1*
Toluene-d8 (Surr)	*96*		*89 - 112*		*10/26/16 13:30*	*1*

Lab Sample ID: LCS 320-134567/5
Matrix: Water
Analysis Batch: 134567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	18.7		ug/L		94	79 - 120
1,1,1,2-Tetrachloroethane	20.0	19.0		ug/L		95	78 - 124
1,1,1-Trichloroethane	20.0	17.5		ug/L		87	74 - 131
1,1,2,2-Tetrachloroethane	20.0	21.2		ug/L		106	71 - 121
1,1,2-Trichloroethane	20.0	20.2		ug/L		101	80 - 119
1,1-Dichloroethane	20.0	19.3		ug/L		97	77 - 125
1,1-Dichloroethene	20.0	17.3		ug/L		86	71 - 131
1,1-Dichloropropene	20.0	17.8		ug/L		89	79 - 125
1,2,3-Trichlorobenzene	20.0	19.3		ug/L		97	69 - 129
1,2,3-Trichloropropane	20.0	19.9		ug/L		100	73 - 122
1,2,4-Trichlorobenzene	20.0	19.5		ug/L		98	69 - 130
1,2,4-Trimethylbenzene	20.0	18.9		ug/L		95	76 - 124
1,2-Dibromo-3-Chloropropane	20.0	19.8		ug/L		99	62 - 128
1,2-Dibromoethane (EDB)	20.0	19.9		ug/L		100	77 - 121
1,2-Dichlorobenzene	20.0	19.1		ug/L		96	80 - 119
1,2-Dichloroethane	20.0	19.6		ug/L		98	73 - 128
1,2-Dichloropropane	20.0	19.4		ug/L		97	78 - 122
1,3,5-Trimethylbenzene	20.0	19.0		ug/L		95	75 - 124
1,3-Dichlorobenzene	20.0	18.9		ug/L		95	80 - 119
1,3-Dichloropropane	20.0	19.5		ug/L		97	80 - 119
1,4-Dichlorobenzene	20.0	19.2		ug/L		96	79 - 118
2,2-Dichloropropane	20.0	17.9		ug/L		89	60 - 139
2-Chlorotoluene	20.0	18.9		ug/L		94	79 - 122
4-Chlorotoluene	20.0	19.0		ug/L		95	78 - 122
Bromobenzene	20.0	19.4		ug/L		97	80 - 120
Bromochloromethane	20.0	19.7		ug/L		99	78 - 123

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-134567/5
Matrix: Water
Analysis Batch: 134567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromodichloromethane	20.0	19.4		ug/L		97	79 - 125
Bromoform	20.0	18.8		ug/L		94	66 - 130
Bromomethane	20.0	17.8		ug/L		89	53 - 141
Carbon tetrachloride	20.0	16.8		ug/L		84	72 - 136
Chlorobenzene	20.0	18.7		ug/L		93	82 - 118
Chloroethane	20.0	18.3		ug/L		91	60 - 138
Chloroform	20.0	19.1		ug/L		96	79 - 124
Chloromethane	20.0	18.7		ug/L		93	50 - 139
cis-1,2-Dichloroethene	20.0	18.1		ug/L		90	78 - 123
cis-1,3-Dichloropropene	20.0	19.9		ug/L		100	75 - 124
Dibromomethane	20.0	19.8		ug/L		99	79 - 123
Dichlorodifluoromethane	20.0	16.1		ug/L		80	32 - 152
Ethylbenzene	20.0	18.8		ug/L		94	79 - 121
Hexachlorobutadiene	20.0	18.9		ug/L		95	66 - 134
Isopropylbenzene	20.0	18.4		ug/L		92	72 - 131
Methylene Chloride	20.0	18.8		ug/L		94	74 - 124
m-Xylene & p-Xylene	20.0	18.4		ug/L		92	80 - 121
Naphthalene	20.0	19.5		ug/L		98	61 - 128
n-Butylbenzene	20.0	19.4		ug/L		97	75 - 128
N-Propylbenzene	20.0	19.1		ug/L		96	76 - 126
o-Xylene	20.0	18.8		ug/L		94	78 - 122
p-Isopropyltoluene	20.0	18.9		ug/L		95	77 - 127
sec-Butylbenzene	20.0	18.6		ug/L		93	77 - 126
Styrene	20.0	18.7		ug/L		93	78 - 123
tert-Butylbenzene	20.0	18.4		ug/L		92	78 - 124
Tetrachloroethene	20.0	18.3		ug/L		91	74 - 129
Toluene	20.0	18.8		ug/L		94	80 - 121
trans-1,2-Dichloroethene	20.0	17.9		ug/L		90	75 - 124
trans-1,3-Dichloropropene	20.0	19.7		ug/L		98	73 - 127
Trichloroethene	20.0	17.7		ug/L		89	79 - 123
Trichlorofluoromethane	20.0	19.4		ug/L		97	65 - 141
Vinyl chloride	20.0	19.2		ug/L		96	58 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*81 - 118*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*
Dibromofluoromethane (Surr)	*98*		*80 - 119*
Toluene-d8 (Surr)	*95*		*89 - 112*

Lab Sample ID: LCSD 320-134567/6
Matrix: Water
Analysis Batch: 134567

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	19.1		ug/L		95	79 - 120	2	20
1,1,1,2-Tetrachloroethane	20.0	18.9		ug/L		94	78 - 124	0	20
1,1,1-Trichloroethane	20.0	18.2		ug/L		91	74 - 131	4	20
1,1,2,2-Tetrachloroethane	20.0	20.5		ug/L		103	71 - 121	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 320-134567/6
Matrix: Water
Analysis Batch: 134567

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloroethane	20.0	20.8		ug/L		104	80 - 119	3	20
1,1-Dichloroethane	20.0	19.8		ug/L		99	77 - 125	2	20
1,1-Dichloroethene	20.0	17.7		ug/L		88	71 - 131	2	20
1,1-Dichloropropene	20.0	18.6		ug/L		93	79 - 125	4	20
1,2,3-Trichlorobenzene	20.0	19.8		ug/L		99	69 - 129	3	20
1,2,3-Trichloropropane	20.0	20.2		ug/L		101	73 - 122	1	20
1,2,4-Trichlorobenzene	20.0	20.4		ug/L		102	69 - 130	5	20
1,2,4-Trimethylbenzene	20.0	19.1		ug/L		96	76 - 124	1	20
1,2-Dibromo-3-Chloropropane	20.0	20.2		ug/L		101	62 - 128	2	20
1,2-Dibromoethane (EDB)	20.0	20.3		ug/L		102	77 - 121	2	20
1,2-Dichlorobenzene	20.0	19.7		ug/L		98	80 - 119	3	20
1,2-Dichloroethane	20.0	19.9		ug/L		99	73 - 128	1	20
1,2-Dichloropropane	20.0	20.1		ug/L		100	78 - 122	3	20
1,3,5-Trimethylbenzene	20.0	19.1		ug/L		96	75 - 124	1	20
1,3-Dichlorobenzene	20.0	18.9		ug/L		94	80 - 119	0	20
1,3-Dichloropropane	20.0	19.8		ug/L		99	80 - 119	2	20
1,4-Dichlorobenzene	20.0	19.7		ug/L		99	79 - 118	3	20
2,2-Dichloropropane	20.0	18.3		ug/L		92	60 - 139	2	20
2-Chlorotoluene	20.0	18.8		ug/L		94	79 - 122	0	20
4-Chlorotoluene	20.0	19.2		ug/L		96	78 - 122	1	20
Bromobenzene	20.0	19.4		ug/L		97	80 - 120	0	20
Bromochloromethane	20.0	20.6		ug/L		103	78 - 123	4	20
Bromodichloromethane	20.0	19.6		ug/L		98	79 - 125	1	20
Bromoform	20.0	19.3		ug/L		96	66 - 130	3	20
Bromomethane	20.0	18.3		ug/L		92	53 - 141	3	20
Carbon tetrachloride	20.0	18.0		ug/L		90	72 - 136	7	20
Chlorobenzene	20.0	19.0		ug/L		95	82 - 118	2	20
Chloroethane	20.0	18.5		ug/L		92	60 - 138	1	20
Chloroform	20.0	20.0		ug/L		100	79 - 124	5	20
Chloromethane	20.0	19.4		ug/L		97	50 - 139	4	20
cis-1,2-Dichloroethene	20.0	18.8		ug/L		94	78 - 123	4	20
cis-1,3-Dichloropropene	20.0	20.8		ug/L		104	75 - 124	4	20
Dibromomethane	20.0	20.4		ug/L		102	79 - 123	3	20
Dichlorodifluoromethane	20.0	15.8		ug/L		79	32 - 152	2	20
Ethylbenzene	20.0	18.9		ug/L		95	79 - 121	1	20
Hexachlorobutadiene	20.0	20.2		ug/L		101	66 - 134	6	20
Isopropylbenzene	20.0	18.8		ug/L		94	72 - 131	2	20
Methylene Chloride	20.0	19.6		ug/L		98	74 - 124	4	20
m-Xylene & p-Xylene	20.0	18.7		ug/L		94	80 - 121	2	20
Naphthalene	20.0	19.9		ug/L		99	61 - 128	2	20
n-Butylbenzene	20.0	20.0		ug/L		100	75 - 128	3	20
N-Propylbenzene	20.0	19.3		ug/L		96	76 - 126	1	20
o-Xylene	20.0	19.4		ug/L		97	78 - 122	4	20
p-Isopropyltoluene	20.0	19.4		ug/L		97	77 - 127	2	20
sec-Butylbenzene	20.0	19.0		ug/L		95	77 - 126	2	20
Styrene	20.0	19.1		ug/L		95	78 - 123	2	20
tert-Butylbenzene	20.0	18.8		ug/L		94	78 - 124	2	20
Tetrachloroethene	20.0	18.8		ug/L		94	74 - 129	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 320-134567/6
Matrix: Water
Analysis Batch: 134567

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene			20.0	19.0		ug/L		95	80 - 121	1	20
trans-1,2-Dichloroethene			20.0	18.5		ug/L		93	75 - 124	3	20
trans-1,3-Dichloropropene			20.0	20.5		ug/L		102	73 - 127	4	20
Trichloroethene			20.0	18.1		ug/L		91	79 - 123	2	20
Trichlorofluoromethane			20.0	19.8		ug/L		99	65 - 141	2	20
Vinyl chloride			20.0	19.3		ug/L		96	58 - 137	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*81 - 118*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*
Dibromofluoromethane (Surr)	*100*		*80 - 119*
Toluene-d8 (Surr)	*99*		*89 - 112*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 320-134119/1-A
Matrix: Water
Analysis Batch: 134817

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 134119

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	3.0	U	10	1.1	ug/L		10/24/16 10:38	10/27/16 15:19	1
Acenaphthylene	3.0	U	10	1.1	ug/L		10/24/16 10:38	10/27/16 15:19	1
Anthracene	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Azobenzene	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Benzo[a]anthracene	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Benzo[b]fluoranthene	3.0	U	10	1.2	ug/L		10/24/16 10:38	10/27/16 15:19	1
Benzo[k]fluoranthene	3.0	U	10	0.96	ug/L		10/24/16 10:38	10/27/16 15:19	1
Benzoic acid	50	U	75	20	ug/L		10/24/16 10:38	10/27/16 15:19	1
Benzo[g,h,i]perylene	3.0	U	10	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
Benzo[a]pyrene	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Benzyl alcohol	6.0	U	10	2.6	ug/L		10/24/16 10:38	10/27/16 15:19	1
Bis(2-chloroethoxy)methane	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Bis(2-chloroethyl)ether	3.0	U	10	1.5	ug/L		10/24/16 10:38	10/27/16 15:19	1
2,2'-oxybis[1-chloropropane]	3.0	U	10	1.3	ug/L		10/24/16 10:38	10/27/16 15:19	1
Bis(2-ethylhexyl) phthalate	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
4-Bromophenyl phenyl ether	3.0	U	10	1.1	ug/L		10/24/16 10:38	10/27/16 15:19	1
Butyl benzyl phthalate	3.0	U	10	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
Carbazole	3.0	U	10	1.2	ug/L		10/24/16 10:38	10/27/16 15:19	1
4-Chloroaniline	6.0	U	10	2.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
4-Chloro-3-methylphenol	6.0	U	10	2.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
2-Chlorophenol	6.0	U	10	1.6	ug/L		10/24/16 10:38	10/27/16 15:19	1
2-Chloronaphthalene	3.0	U	10	1.3	ug/L		10/24/16 10:38	10/27/16 15:19	1
4-Chlorophenyl phenyl ether	3.0	U	10	1.1	ug/L		10/24/16 10:38	10/27/16 15:19	1
Chrysene	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Dibenz(a,h)anthracene	6.0	U	10	2.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Dibenzofuran	3.0	U	10	1.1	ug/L		10/24/16 10:38	10/27/16 15:19	1
Di-n-butyl phthalate	3.0	U	10	1.1	ug/L		10/24/16 10:38	10/27/16 15:19	1
1,2-Dichlorobenzene	3.0	U	10	1.5	ug/L		10/24/16 10:38	10/27/16 15:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 320-134119/1-A
Matrix: Water
Analysis Batch: 134817

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 134119

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	3.0	U	10	1.5	ug/L		10/24/16 10:38	10/27/16 15:19	1
1,4-Dichlorobenzene	3.0	U	10	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
3,3'-Dichlorobenzidine	3.0	U	50	0.96	ug/L		10/24/16 10:38	10/27/16 15:19	1
2,4-Dichlorophenol	6.0	U	10	2.6	ug/L		10/24/16 10:38	10/27/16 15:19	1
Diethyl phthalate	3.0	U	10	0.93	ug/L		10/24/16 10:38	10/27/16 15:19	1
2,4-Dimethylphenol	6.0	U	10	2.2	ug/L		10/24/16 10:38	10/27/16 15:19	1
Dimethyl phthalate	3.0	U	10	0.88	ug/L		10/24/16 10:38	10/27/16 15:19	1
4,6-Dinitro-2-methylphenol	6.0	U	60	2.2	ug/L		10/24/16 10:38	10/27/16 15:19	1
2,4-Dinitrophenol	50	U	60	20	ug/L		10/24/16 10:38	10/27/16 15:19	1
2,4-Dinitrotoluene	6.0	U	10	2.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
2,6-Dinitrotoluene	6.0	U	10	2.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Di-n-octyl phthalate	3.0	U	10	1.5	ug/L		10/24/16 10:38	10/27/16 15:19	1
Fluoranthene	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Fluorene	3.0	U	10	0.93	ug/L		10/24/16 10:38	10/27/16 15:19	1
Hexachlorobenzene	3.0	U	10	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
Hexachlorobutadiene	3.0	U	10	1.3	ug/L		10/24/16 10:38	10/27/16 15:19	1
Hexachloroethane	3.0	U	10	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
Indeno[1,2,3-cd]pyrene	10	U	15	3.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
Isophorone	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
2-Methylnaphthalene	3.0	U	10	1.5	ug/L		10/24/16 10:38	10/27/16 15:19	1
2-Methylphenol	3.0	U	10	0.93	ug/L		10/24/16 10:38	10/27/16 15:19	1
3 & 4 Methylphenol	3.0	U	10	1.2	ug/L		10/24/16 10:38	10/27/16 15:19	1
Naphthalene	3.0	U	10	1.3	ug/L		10/24/16 10:38	10/27/16 15:19	1
2-Nitroaniline	6.0	U	50	2.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
3-Nitroaniline	3.0	U	50	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
4-Nitroaniline	3.0	U	50	1.5	ug/L		10/24/16 10:38	10/27/16 15:19	1
Nitrobenzene	6.0	U	10	1.6	ug/L		10/24/16 10:38	10/27/16 15:19	1
2-Nitrophenol	6.0	U	10	1.9	ug/L		10/24/16 10:38	10/27/16 15:19	1
4-Nitrophenol	20	U	60	6.1	ug/L		10/24/16 10:38	10/27/16 15:19	1
N-Nitrosodimethylamine	3.0	U	15	0.96	ug/L		10/24/16 10:38	10/27/16 15:19	1
N-Nitrosodiphenylamine	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
N-Nitrosodi-n-propylamine	3.0	U	10	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
Pentachlorophenol	20	U	60	5.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Phenanthrene	3.0	U	10	1.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
Phenol	3.0	U	10	1.1	ug/L		10/24/16 10:38	10/27/16 15:19	1
Pyrene	3.0	U	10	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
1,2,4-Trichlorobenzene	3.0	U	10	1.4	ug/L		10/24/16 10:38	10/27/16 15:19	1
2,4,5-Trichlorophenol	6.0	U	10	2.0	ug/L		10/24/16 10:38	10/27/16 15:19	1
2,4,6-Trichlorophenol	6.0	U	10	2.0	ug/L		10/24/16 10:38	10/27/16 15:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*77*		*43 - 140*	*10/24/16 10:38*	*10/27/16 15:19*	*1*
2-Fluorobiphenyl (Surr)	*77*		*44 - 119*	*10/24/16 10:38*	*10/27/16 15:19*	*1*
2-Fluorophenol (Surr)	*49*		*19 - 119*	*10/24/16 10:38*	*10/27/16 15:19*	*1*
Nitrobenzene-d5 (Surr)	*75*		*44 - 120*	*10/24/16 10:38*	*10/27/16 15:19*	*1*
Phenol-d5 (Surr)	*33*		*10 - 50*	*10/24/16 10:38*	*10/27/16 15:19*	*1*
Terphenyl-d14 (Surr)	*86*		*50 - 134*	*10/24/16 10:38*	*10/27/16 15:19*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-134119/2-A
Matrix: Water
Analysis Batch: 134817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 134119

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	100	76.3		ug/L		76	47 - 122
Acenaphthylene	100	74.4		ug/L		74	41 - 130
Anthracene	100	78.1		ug/L		78	57 - 123
Azobenzene	100	75.2		ug/L		75	61 - 116
Benzo[a]anthracene	100	83.9		ug/L		84	58 - 125
Benzo[b]fluoranthene	100	84.5		ug/L		84	53 - 131
Benzo[k]fluoranthene	100	81.4		ug/L		81	57 - 129
Benzoic acid	100	28.8	J	ug/L		29	10 - 40
Benzo[g,h,i]perylene	100	85.7		ug/L		86	50 - 134
Benzo[a]pyrene	100	86.9		ug/L		87	54 - 128
Benzyl alcohol	100	68.8		ug/L		69	31 - 112
Bis(2-chloroethoxy)methane	100	74.5		ug/L		74	48 - 120
Bis(2-chloroethyl)ether	100	71.6		ug/L		72	43 - 118
2,2'-oxybis[1-chloropropane]	100	82.2		ug/L		82	37 - 130
Bis(2-ethylhexyl) phthalate	100	88.7		ug/L		89	55 - 135
4-Bromophenyl phenyl ether	100	79.7		ug/L		80	55 - 124
Butyl benzyl phthalate	100	87.6		ug/L		88	53 - 134
Carbazole	100	80.4		ug/L		80	60 - 122
4-Chloroaniline	100	73.7		ug/L		74	33 - 117
4-Chloro-3-methylphenol	100	82.7		ug/L		83	52 - 119
2-Chlorophenol	100	72.1		ug/L		72	38 - 117
2-Chloronaphthalene	100	77.1		ug/L		77	40 - 116
4-Chlorophenyl phenyl ether	100	83.3		ug/L		83	53 - 121
Chrysene	100	83.5		ug/L		84	59 - 123
Dibenz(a,h)anthracene	100	84.9		ug/L		85	51 - 134
Dibenzofuran	100	75.7		ug/L		76	53 - 118
Di-n-butyl phthalate	100	82.0		ug/L		82	59 - 127
1,2-Dichlorobenzene	100	67.1		ug/L		67	32 - 111
1,3-Dichlorobenzene	100	65.5		ug/L		66	28 - 110
1,4-Dichlorobenzene	100	66.2		ug/L		66	29 - 112
3,3'-Dichlorobenzidine	100	85.8		ug/L		86	27 - 129
2,4-Dichlorophenol	100	82.3		ug/L		82	47 - 121
Diethyl phthalate	100	86.2		ug/L		86	56 - 125
Dimethyl phthalate	100	85.7		ug/L		86	45 - 127
4,6-Dinitro-2-methylphenol	200	166		ug/L		83	44 - 137
2,4-Dinitrophenol	200	134		ug/L		67	23 - 143
2,4-Dinitrotoluene	100	91.3		ug/L		91	57 - 128
2,6-Dinitrotoluene	100	86.7		ug/L		87	57 - 124
Di-n-octyl phthalate	100	88.3		ug/L		88	51 - 140
Fluoranthene	100	81.8		ug/L		82	57 - 128
Fluorene	100	77.2		ug/L		77	52 - 124
Hexachlorobenzene	100	79.9		ug/L		80	53 - 125
Hexachlorobutadiene	100	65.7		ug/L		66	22 - 124
Hexachloroethane	100	62.0		ug/L		62	21 - 115
Indeno[1,2,3-cd]pyrene	100	92.7		ug/L		93	52 - 134
Isophorone	100	77.9		ug/L		78	42 - 124
2-Methylnaphthalene	100	71.2		ug/L		71	40 - 121
2-Methylphenol	100	70.1		ug/L		70	30 - 117

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-134119/2-A
Matrix: Water
Analysis Batch: 134817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 134119

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
3 & 4 Methylphenol	100	65.1		ug/L		65	29 - 110
Naphthalene	100	69.6		ug/L		70	40 - 121
2-Nitroaniline	100	90.0		ug/L		90	55 - 127
3-Nitroaniline	100	80.0		ug/L		80	41 - 128
4-Nitroaniline	100	89.9		ug/L		90	62 - 126
Nitrobenzene	100	78.6		ug/L		79	45 - 121
2-Nitrophenol	100	84.2		ug/L		84	47 - 123
4-Nitrophenol	200	113		ug/L		56	21 - 80
N-Nitrosodimethylamine	100	48.4		ug/L		48	29 - 78
N-Nitrosodiphenylamine	100	77.5		ug/L		77	51 - 123
N-Nitrosodi-n-propylamine	100	75.6		ug/L		76	49 - 119
Pentachlorophenol	200	173		ug/L		86	35 - 138
Phenanthrene	100	78.0		ug/L		78	59 - 120
Phenol	100	37.7		ug/L		38	25 - 59
Pyrene	100	84.8		ug/L		85	57 - 126
1,2,4-Trichlorobenzene	100	71.5		ug/L		71	29 - 116
2,4,5-Trichlorophenol	100	89.1		ug/L		89	53 - 123
2,4,6-Trichlorophenol	100	90.5		ug/L		91	50 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*94*		*43 - 140*
2-Fluorobiphenyl (Surr)	*82*		*44 - 119*
2-Fluorophenol (Surr)	*55*		*19 - 119*
Nitrobenzene-d5 (Surr)	*76*		*44 - 120*
Phenol-d5 (Surr)	*36*		*10 - 50*
Terphenyl-d14 (Surr)	*91*		*50 - 134*

Lab Sample ID: LCSD 320-134119/3-A
Matrix: Water
Analysis Batch: 134817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 134119

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	100	78.4		ug/L		78	47 - 122	3	20
Acenaphthylene	100	74.2		ug/L		74	41 - 130	0	20
Anthracene	100	79.0		ug/L		79	57 - 123	1	20
Azobenzene	100	76.6		ug/L		77	61 - 116	2	20
Benzo[a]anthracene	100	84.9		ug/L		85	58 - 125	1	20
Benzo[b]fluoranthene	100	84.4		ug/L		84	53 - 131	0	20
Benzo[k]fluoranthene	100	80.9		ug/L		81	57 - 129	1	20
Benzoic acid	100	33.6	J	ug/L		34	10 - 40	16	20
Benzo[g,h,i]perylene	100	85.6		ug/L		86	50 - 134	0	20
Benzo[a]pyrene	100	86.4		ug/L		86	54 - 128	1	20
Benzyl alcohol	100	73.2		ug/L		73	31 - 112	6	20
Bis(2-chloroethoxy)methane	100	76.6		ug/L		77	48 - 120	3	20
Bis(2-chloroethyl)ether	100	76.1		ug/L		76	43 - 118	6	20
2,2'-oxybis[1-chloropropane]	100	87.5		ug/L		87	37 - 130	6	20
Bis(2-ethylhexyl) phthalate	100	89.1		ug/L		89	55 - 135	0	20
4-Bromophenyl phenyl ether	100	80.2		ug/L		80	55 - 124	1	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 320-134119/3-A
Matrix: Water
Analysis Batch: 134817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 134119

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Butyl benzyl phthalate	100	88.2		ug/L		88	53 - 134	1	20
Carbazole	100	80.5		ug/L		80	60 - 122	0	20
4-Chloroaniline	100	74.4		ug/L		74	33 - 117	1	20
4-Chloro-3-methylphenol	100	85.1		ug/L		85	52 - 119	3	20
2-Chlorophenol	100	77.3		ug/L		77	38 - 117	7	20
2-Chloronaphthalene	100	78.1		ug/L		78	40 - 116	1	20
4-Chlorophenyl phenyl ether	100	82.3		ug/L		82	53 - 121	1	20
Chrysene	100	83.9		ug/L		84	59 - 123	0	20
Dibenz(a,h)anthracene	100	85.1		ug/L		85	51 - 134	0	20
Dibenzofuran	100	75.8		ug/L		76	53 - 118	0	20
Di-n-butyl phthalate	100	82.4		ug/L		82	59 - 127	1	20
1,2-Dichlorobenzene	100	70.6		ug/L		71	32 - 111	5	20
1,3-Dichlorobenzene	100	68.3		ug/L		68	28 - 110	4	20
1,4-Dichlorobenzene	100	70.8		ug/L		71	29 - 112	7	20
3,3'-Dichlorobenzidine	100	85.0		ug/L		85	27 - 129	1	20
2,4-Dichlorophenol	100	86.3		ug/L		86	47 - 121	5	20
Diethyl phthalate	100	85.6		ug/L		86	56 - 125	1	20
Dimethyl phthalate	100	84.8		ug/L		85	45 - 127	1	20
4,6-Dinitro-2-methylphenol	200	179		ug/L		89	44 - 137	7	20
2,4-Dinitrophenol	200	158		ug/L		79	23 - 143	17	20
2,4-Dinitrotoluene	100	90.1		ug/L		90	57 - 128	1	20
2,6-Dinitrotoluene	100	90.2		ug/L		90	57 - 124	4	20
Di-n-octyl phthalate	100	88.1		ug/L		88	51 - 140	0	20
Fluoranthene	100	82.6		ug/L		83	57 - 128	1	20
Fluorene	100	78.1		ug/L		78	52 - 124	1	20
Hexachlorobenzene	100	80.2		ug/L		80	53 - 125	0	20
Hexachlorobutadiene	100	68.8		ug/L		69	22 - 124	5	20
Hexachloroethane	100	65.7		ug/L		66	21 - 115	6	20
Indeno[1,2,3-cd]pyrene	100	88.6		ug/L		89	52 - 134	4	20
Isophorone	100	79.7		ug/L		80	42 - 124	2	20
2-Methylnaphthalene	100	73.4		ug/L		73	40 - 121	3	20
2-Methylphenol	100	74.6		ug/L		75	30 - 117	6	20
3 & 4 Methylphenol	100	67.9		ug/L		68	29 - 110	4	20
Naphthalene	100	72.6		ug/L		73	40 - 121	4	20
2-Nitroaniline	100	90.4		ug/L		90	55 - 127	0	20
3-Nitroaniline	100	75.9		ug/L		76	41 - 128	5	20
4-Nitroaniline	100	86.6		ug/L		87	62 - 126	4	20
Nitrobenzene	100	82.5		ug/L		83	45 - 121	5	20
2-Nitrophenol	100	88.4		ug/L		88	47 - 123	5	20
4-Nitrophenol	200	115		ug/L		58	21 - 80	2	20
N-Nitrosodimethylamine	100	51.1		ug/L		51	29 - 78	5	20
N-Nitrosodiphenylamine	100	78.1		ug/L		78	51 - 123	1	20
N-Nitrosodi-n-propylamine	100	81.0		ug/L		81	49 - 119	7	20
Pentachlorophenol	200	177		ug/L		89	35 - 138	3	20
Phenanthrene	100	79.7		ug/L		80	59 - 120	2	20
Phenol	100	40.1		ug/L		40	25 - 59	6	20
Pyrene	100	86.0		ug/L		86	57 - 126	1	20
1,2,4-Trichlorobenzene	100	76.3		ug/L		76	29 - 116	6	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 320-134119/3-A
Matrix: Water
Analysis Batch: 134817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 134119

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4,5-Trichlorophenol			100	87.1		ug/L		87	53 - 123	2	20
2,4,6-Trichlorophenol			100	91.5		ug/L		91	50 - 125	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*92*		*43 - 140*
2-Fluorobiphenyl (Surr)	*80*		*44 - 119*
2-Fluorophenol (Surr)	*56*		*19 - 119*
Nitrobenzene-d5 (Surr)	*79*		*44 - 120*
Phenol-d5 (Surr)	*37*		*10 - 50*
Terphenyl-d14 (Surr)	*90*		*50 - 134*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 320-134124/1-A
Matrix: Water
Analysis Batch: 135416

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 134124

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	0.025	U	0.050	0.0070	ug/L		10/24/16 10:43	11/01/16 12:06	1
gamma-BHC (Lindane)	0.012	U	0.050	0.0060	ug/L		10/24/16 10:43	11/01/16 12:06	1
beta-BHC	0.025	U	0.050	0.0070	ug/L		10/24/16 10:43	11/01/16 12:06	1
delta-BHC	0.025	U	0.050	0.011	ug/L		10/24/16 10:43	11/01/16 12:06	1
Heptachlor	0.025	U	0.050	0.0070	ug/L		10/24/16 10:43	11/01/16 12:06	1
Aldrin	0.012	U	0.050	0.0060	ug/L		10/24/16 10:43	11/01/16 12:06	1
Heptachlor epoxide	0.012	U	0.050	0.0060	ug/L		10/24/16 10:43	11/01/16 12:06	1
gamma-Chlordane	0.025	U	0.050	0.012	ug/L		10/24/16 10:43	11/01/16 12:06	1
alpha-Chlordane	0.012	U	0.050	0.0060	ug/L		10/24/16 10:43	11/01/16 12:06	1
Endosulfan I	0.012	U	0.050	0.0060	ug/L		10/24/16 10:43	11/01/16 12:06	1
4,4'-DDE	0.025	U	0.050	0.012	ug/L		10/24/16 10:43	11/01/16 12:06	1
Dieldrin	0.025	U	0.050	0.012	ug/L		10/24/16 10:43	11/01/16 12:06	1
Endrin	0.025	U	0.050	0.012	ug/L		10/24/16 10:43	11/01/16 12:06	1
4,4'-DDD	0.025	U	0.050	0.012	ug/L		10/24/16 10:43	11/01/16 12:06	1
Endosulfan II	0.025	U	0.050	0.012	ug/L		10/24/16 10:43	11/01/16 12:06	1
4,4'-DDT	0.025	U	0.050	0.012	ug/L		10/24/16 10:43	11/01/16 12:06	1
Endrin aldehyde	0.080	U	0.10	0.025	ug/L		10/24/16 10:43	11/01/16 12:06	1
Endosulfan sulfate	0.025	U	0.050	0.012	ug/L		10/24/16 10:43	11/01/16 12:06	1
Methoxychlor	0.080	U	0.10	0.042	ug/L		10/24/16 10:43	11/01/16 12:06	1
Endrin ketone	0.080	U	0.10	0.020	ug/L		10/24/16 10:43	11/01/16 12:06	1
Toxaphene	1.0	U	2.0	0.51	ug/L		10/24/16 10:43	11/01/16 12:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*86*		*44 - 124*	*10/24/16 10:43*	*11/01/16 12:06*	*1*
Tetrachloro-m-xylene	*87*		*44 - 124*	*10/24/16 10:43*	*11/01/16 12:06*	*1*
DCB Decachlorobiphenyl	*68*		*12 - 131*	*10/24/16 10:43*	*11/01/16 12:06*	*1*
DCB Decachlorobiphenyl	*67*		*12 - 131*	*10/24/16 10:43*	*11/01/16 12:06*	*1*

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 320-134124/2-A
Matrix: Water
Analysis Batch: 135416

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 134124

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-BHC	0.500	0.557		ug/L		111	54 - 138
gamma-BHC (Lindane)	0.500	0.540		ug/L		108	59 - 134
beta-BHC	0.500	0.493		ug/L		99	56 - 136
delta-BHC	0.500	0.590		ug/L		118	52 - 142
Heptachlor	0.500	0.530		ug/L		106	54 - 130
Aldrin	0.500	0.484		ug/L		97	45 - 134
Heptachlor epoxide	0.500	0.528		ug/L		106	61 - 133
gamma-Chlordane	0.500	0.535		ug/L		107	56 - 136
alpha-Chlordane	0.500	0.530		ug/L		106	60 - 129
Endosulfan I	0.500	0.426		ug/L		85	62 - 126
4,4'-DDE	0.500	0.540		ug/L		108	57 - 135
Dieldrin	0.500	0.559		ug/L		112	60 - 136
Endrin	0.500	0.591		ug/L		118	60 - 138
4,4'-DDD	0.500	0.544		ug/L		109	56 - 143
Endosulfan II	0.500	0.516		ug/L		103	52 - 135
4,4'-DDT	0.500	0.656		ug/L		131	51 - 143
Endrin aldehyde	0.500	0.450		ug/L		90	51 - 132
Endosulfan sulfate	0.500	0.523	M	ug/L		105	62 - 133
Methoxychlor	0.500	0.580		ug/L		116	54 - 145
Endrin ketone	0.500	0.542		ug/L		108	58 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*90*		*44 - 124*
DCB Decachlorobiphenyl	*75*		*12 - 131*

Lab Sample ID: LCS 320-134124/5-A
Matrix: Water
Analysis Batch: 135416

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 134124

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toxaphene	5.00	5.57		ug/L		111	33 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*85*	*M*	*44 - 124*
DCB Decachlorobiphenyl	*29*	*M*	*12 - 131*

Lab Sample ID: LCSD 320-134124/3-A
Matrix: Water
Analysis Batch: 135416

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 134124

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-BHC	0.500	0.555		ug/L		111	54 - 138	0	30
gamma-BHC (Lindane)	0.500	0.531		ug/L		106	59 - 134	2	30
beta-BHC	0.500	0.481		ug/L		96	56 - 136	3	30
delta-BHC	0.500	0.578		ug/L		116	52 - 142	2	30
Heptachlor	0.500	0.519		ug/L		104	54 - 130	2	30
Aldrin	0.500	0.485		ug/L		97	45 - 134	0	30

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 320-134124/3-A
Matrix: Water
Analysis Batch: 135416

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 134124

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Heptachlor epoxide	0.500	0.522		ug/L		104	61 - 133	1	30
gamma-Chlordane	0.500	0.530		ug/L		106	56 - 136	1	30
alpha-Chlordane	0.500	0.526		ug/L		105	60 - 129	1	30
Endosulfan I	0.500	0.425		ug/L		85	62 - 126	0	30
4,4'-DDE	0.500	0.532		ug/L		106	57 - 135	1	30
Dieldrin	0.500	0.559		ug/L		112	60 - 136	0	30
Endrin	0.500	0.596		ug/L		119	60 - 138	1	30
4,4'-DDD	0.500	0.542		ug/L		108	56 - 143	0	30
Endosulfan II	0.500	0.518		ug/L		104	52 - 135	0	30
4,4'-DDT	0.500	0.657		ug/L		131	51 - 143	0	30
Endrin aldehyde	0.500	0.468		ug/L		94	51 - 132	4	30
Endosulfan sulfate	0.500	0.562		ug/L		112	62 - 133	7	30
Methoxychlor	0.500	0.590		ug/L		118	54 - 145	2	30
Endrin ketone	0.500	0.547		ug/L		109	58 - 134	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*87*		*44 - 124*
DCB Decachlorobiphenyl	*70*		*12 - 131*

Method: 8151A DOD - Herbicides (GC)

Lab Sample ID: MB 280-348542/1-A
Matrix: Water
Analysis Batch: 349518

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348542

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	0.60	U	1.0	0.19	ug/L		10/27/16 12:46	11/02/16 20:24	1
2,4-D	0.60	U	4.0	0.21	ug/L		10/27/16 12:46	11/02/16 20:24	1
2,4-DB	0.92	U	4.0	0.36	ug/L		10/27/16 12:46	11/02/16 20:24	1
Dalapon	1.8	U	2.0	0.91	ug/L		10/27/16 12:46	11/02/16 20:24	1
Dicamba	0.60	U	2.0	0.15	ug/L		10/27/16 12:46	11/02/16 20:24	1
Dichlorprop	1.8	U	4.0	0.65	ug/L		10/27/16 12:46	11/02/16 20:24	1
MCPA	60	U	400	17	ug/L		10/27/16 12:46	11/02/16 20:24	1
Silvex (2,4,5-TP)	0.60	U	1.0	0.17	ug/L		10/27/16 12:46	11/02/16 20:24	1
MCPP	92	U	400	33	ug/L		10/27/16 12:46	11/02/16 20:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*73*		*32 - 138*	*10/27/16 12:46*	*11/02/16 20:24*	*1*

Lab Sample ID: LCS 280-348542/2-A
Matrix: Water
Analysis Batch: 349518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348542

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-T	5.00	3.31		ug/L		66	42 - 147
2,4-D	5.00	3.19	J	ug/L		64	45 - 152
2,4-DB	5.00	3.56	J	ug/L		71	35 - 153

Method: 8151A DOD - Herbicides (GC) (Continued)

Lab Sample ID: LCS 280-348542/2-A
Matrix: Water
Analysis Batch: 349518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348542

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Dalapon			5.00	2.80		ug/L		56	19 - 139		
Dicamba			5.00	3.10		ug/L		62	50 - 141		
Dichlorprop			5.00	3.07	J	ug/L		61	46 - 159		
MCPA			500	353	J	ug/L		71	35 - 144		
Silvex (2,4,5-TP)			5.00	3.39		ug/L		68	51 - 134		
MCPP			500	354	J	ug/L		71	33 - 157		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*67*		*32 - 138*

Lab Sample ID: LCSD 280-348542/3-A
Matrix: Water
Analysis Batch: 349518

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 348542

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4,5-T			5.00	3.10		ug/L		62	42 - 147	7	30
2,4-D			5.00	3.00	J	ug/L		60	45 - 152	6	30
2,4-DB			5.00	3.12	J	ug/L		62	35 - 153	13	30
Dalapon			5.00	3.17		ug/L		63	19 - 139	12	30
Dicamba			5.00	3.02		ug/L		60	50 - 141	2	30
Dichlorprop			5.00	2.99	J	ug/L		60	46 - 159	2	30
MCPA			500	300	J	ug/L		60	35 - 144	16	30
Silvex (2,4,5-TP)			5.00	3.23		ug/L		65	51 - 134	5	30
MCPP			500	342	J	ug/L		68	33 - 157	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*65*		*32 - 138*

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 320-134512/1-A
Matrix: Water
Analysis Batch: 135189

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 134512

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.00060	U	0.0010	0.00030	mg/L		10/26/16 07:00	10/28/16 11:51	1
Arsenic	0.0030	U	0.0050	0.0010	mg/L		10/26/16 07:00	10/28/16 11:51	1
Barium	0.0020	U	0.0030	0.00050	mg/L		10/26/16 07:00	10/28/16 11:51	1
Cadmium	0.0010	U	0.0015	0.00050	mg/L		10/26/16 07:00	10/28/16 11:51	1
Chromium	0.0045	U	0.0050	0.0015	mg/L		10/26/16 07:00	10/28/16 11:51	1
Lead	0.0012	U	0.0020	0.00060	mg/L		10/26/16 07:00	10/28/16 11:51	1
Selenium	0.0020	U	0.0030	0.0010	mg/L		10/26/16 07:00	10/28/16 11:51	1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 320-134512/2-A
Matrix: Water
Analysis Batch: 135189

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 134512

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.0500	0.0509		mg/L		102	85 - 116
Arsenic	0.200	0.193		mg/L		97	84 - 116
Barium	0.200	0.201		mg/L		101	86 - 114
Cadmium	0.200	0.200		mg/L		100	87 - 115
Chromium	0.200	0.198		mg/L		99	85 - 116
Lead	0.200	0.204		mg/L		102	88 - 115
Selenium	0.200	0.202		mg/L		101	80 - 120

Lab Sample ID: 320-22881-1 MS
Matrix: Water
Analysis Batch: 135189

Client Sample ID: JBER-WW001
Prep Type: Total Recoverable
Prep Batch: 134512

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.00098	J	0.0500	0.0445		mg/L		87	85 - 116
Arsenic	0.017		0.200	0.189		mg/L		86	84 - 116
Barium	0.12		0.200	0.299		mg/L		89	86 - 114
Cadmium	0.00083	J J	0.200	0.170	J	mg/L		85	87 - 115
Chromium	0.17		0.200	0.346		mg/L		86	85 - 116
Lead	0.015	J	0.200	0.186	J	mg/L		85	88 - 115
Selenium	0.0020	U	0.200	0.175		mg/L		88	80 - 120

Lab Sample ID: 320-22881-1 MSD
Matrix: Water
Analysis Batch: 135189

Client Sample ID: JBER-WW001
Prep Type: Total Recoverable
Prep Batch: 134512

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silver	0.00098	J	0.0500	0.0451		mg/L		88	85 - 116	1	20
Arsenic	0.017		0.200	0.193		mg/L		88	84 - 116	2	20
Barium	0.12		0.200	0.302		mg/L		90	86 - 114	1	20
Cadmium	0.00083	J J	0.200	0.172	J	mg/L		86	87 - 115	1	20
Chromium	0.17		0.200	0.356		mg/L		91	85 - 116	3	20
Lead	0.015	J	0.200	0.187	J	mg/L		86	88 - 115	0	20
Selenium	0.0020	U	0.200	0.181		mg/L		90	80 - 120	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 320-134327/11-A
Matrix: Water
Analysis Batch: 134475

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 134327

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00025	0.00010	mg/L		10/25/16 11:14	10/25/16 14:33	1

Lab Sample ID: LCS 320-134327/12-A
Matrix: Water
Analysis Batch: 134475

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 134327

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.00110		mg/L		110	82 - 119

Lab Sample ID: 320-22881-1 MS
Matrix: Water
Analysis Batch: 134475

Client Sample ID: JBER-WW001
Prep Type: Total/NA
Prep Batch: 134327

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00026		0.00100	0.00145		mg/L		119	82 - 119

Lab Sample ID: 320-22881-1 MSD
Matrix: Water
Analysis Batch: 134475

Client Sample ID: JBER-WW001
Prep Type: Total/NA
Prep Batch: 134327

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00026		0.00100	0.00143		mg/L		117	82 - 119	1	20

Method: 1010A - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: MB 280-350782/3
Matrix: Water
Analysis Batch: 350782

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>160		1.00	1.00	Degrees F			11/10/16 09:30	1

Lab Sample ID: LCS 280-350782/1
Matrix: Water
Analysis Batch: 350782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	81.0	81.00		Degrees F		100	97.5 - 102

Lab Sample ID: LCSD 280-350782/2
Matrix: Water
Analysis Batch: 350782

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Flashpoint	81.0	83.00		Degrees F		102	97.5 - 102	2	10

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 280-349597/5-A
Matrix: Water
Analysis Batch: 349678

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 349597

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.00208	J	0.010	0.0020	mg/L		11/03/16 05:41	11/03/16 09:35	1

Lab Sample ID: HLCS 280-349597/1-A
Matrix: Water
Analysis Batch: 349678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349597

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.400	0.379		mg/L		95	90 - 110

Method: 9012B - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: LCS 280-349597/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 349678 — **Prep Batch: 349597**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.0952		mg/L		95	83 - 116

Lab Sample ID: LCSD 280-349597/4-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 349678 — **Prep Batch: 349597**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.100	0.0938		mg/L		94	83 - 116	1	20

Lab Sample ID: LLCS 280-349597/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 349678 — **Prep Batch: 349597**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.0969		mg/L		97	44 - 167

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-348387/2-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348390 — **Prep Batch: 348387**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	1.9	U	4.0	0.79	mg/L		10/26/16 17:14	10/26/16 17:18	1

Lab Sample ID: LCS 280-348387/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348390 — **Prep Batch: 348387**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	20.0	20.4		mg/L		102	50 - 106

Method: 9040C - pH

Lab Sample ID: LCS 320-134067/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 134067

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	8.00	8.0		SU		100	98 - 102

GC/MS VOA

Analysis Batch: 134567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	8260B	
MB 320-134567/10	Method Blank	Total/NA	Water	8260B	
LCS 320-134567/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 320-134567/6	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 134119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	3510C	
MB 320-134119/1-A	Method Blank	Total/NA	Water	3510C	
LCS 320-134119/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 320-134119/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 134817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	8270D	134119
MB 320-134119/1-A	Method Blank	Total/NA	Water	8270D	134119
LCS 320-134119/2-A	Lab Control Sample	Total/NA	Water	8270D	134119
LCSD 320-134119/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	134119

GC Semi VOA

Prep Batch: 134124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	3510C	
MB 320-134124/1-A	Method Blank	Total/NA	Water	3510C	
LCS 320-134124/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 320-134124/5-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 320-134124/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 135416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	8081B	134124
MB 320-134124/1-A	Method Blank	Total/NA	Water	8081B	134124
LCS 320-134124/2-A	Lab Control Sample	Total/NA	Water	8081B	134124
LCS 320-134124/5-A	Lab Control Sample	Total/NA	Water	8081B	134124
LCSD 320-134124/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	134124

Prep Batch: 348542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	8151A	
MB 280-348542/1-A	Method Blank	Total/NA	Water	8151A	
LCS 280-348542/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 280-348542/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 349518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	8151A DOD	348542
MB 280-348542/1-A	Method Blank	Total/NA	Water	8151A DOD	348542

GC Semi VOA (Continued)

Analysis Batch: 349518 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-348542/2-A	Lab Control Sample	Total/NA	Water	8151A DOD	348542
LCSD 280-348542/3-A	Lab Control Sample Dup	Total/NA	Water	8151A DOD	348542

Metals

Prep Batch: 134327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	7470A	
MB 320-134327/11-A	Method Blank	Total/NA	Water	7470A	
LCS 320-134327/12-A	Lab Control Sample	Total/NA	Water	7470A	
320-22881-1 MS	JBER-WW001	Total/NA	Water	7470A	
320-22881-1 MSD	JBER-WW001	Total/NA	Water	7470A	

Analysis Batch: 134475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	7470A	134327
MB 320-134327/11-A	Method Blank	Total/NA	Water	7470A	134327
LCS 320-134327/12-A	Lab Control Sample	Total/NA	Water	7470A	134327
320-22881-1 MS	JBER-WW001	Total/NA	Water	7470A	134327
320-22881-1 MSD	JBER-WW001	Total/NA	Water	7470A	134327

Prep Batch: 134512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total Recoverable	Water	3005A	
MB 320-134512/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 320-134512/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
320-22881-1 MS	JBER-WW001	Total Recoverable	Water	3005A	
320-22881-1 MSD	JBER-WW001	Total Recoverable	Water	3005A	

Analysis Batch: 135189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total Recoverable	Water	6020	134512
MB 320-134512/1-A	Method Blank	Total Recoverable	Water	6020	134512
LCS 320-134512/2-A	Lab Control Sample	Total Recoverable	Water	6020	134512
320-22881-1 MS	JBER-WW001	Total Recoverable	Water	6020	134512
320-22881-1 MSD	JBER-WW001	Total Recoverable	Water	6020	134512

General Chemistry

Analysis Batch: 134067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	9040C	
LCS 320-134067/2	Lab Control Sample	Total/NA	Water	9040C	

Prep Batch: 348387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	9030B	
MB 280-348387/2-A	Method Blank	Total/NA	Water	9030B	
LCS 280-348387/1-A	Lab Control Sample	Total/NA	Water	9030B	

General Chemistry (Continued)

Analysis Batch: 348390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	9034	348387
MB 280-348387/2-A	Method Blank	Total/NA	Water	9034	348387
LCS 280-348387/1-A	Lab Control Sample	Total/NA	Water	9034	348387

Prep Batch: 349597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	9012B	
MB 280-349597/5-A	Method Blank	Total/NA	Water	9012B	
HLCS 280-349597/1-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 280-349597/3-A	Lab Control Sample	Total/NA	Water	9012B	
LCSD 280-349597/4-A	Lab Control Sample Dup	Total/NA	Water	9012B	
LLCS 280-349597/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 349678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	9012B	349597
MB 280-349597/5-A	Method Blank	Total/NA	Water	9012B	349597
HLCS 280-349597/1-A	Lab Control Sample	Total/NA	Water	9012B	349597
LCS 280-349597/3-A	Lab Control Sample	Total/NA	Water	9012B	349597
LCSD 280-349597/4-A	Lab Control Sample Dup	Total/NA	Water	9012B	349597
LLCS 280-349597/2-A	Lab Control Sample	Total/NA	Water	9012B	349597

Analysis Batch: 350782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-22881-1	JBER-WW001	Total/NA	Water	1010A	
MB 280-350782/3	Method Blank	Total/NA	Water	1010A	
LCS 280-350782/1	Lab Control Sample	Total/NA	Water	1010A	
LCSD 280-350782/2	Lab Control Sample Dup	Total/NA	Water	1010A	

Lab Chronicle

Client: HydroGeoLogic Inc
Project/Site: JBER Soil/Water

TestAmerica Job ID: 320-22881-1

Client Sample ID: JBER-WW001

Date Collected: 10/20/16 10:40
Date Received: 10/21/16 09:10

Lab Sample ID: 320-22881-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	134567	10/26/16 19:48	SS	TAL SAC
Total/NA	Prep	3510C			134119	10/24/16 10:38	NGK	TAL SAC
Total/NA	Analysis	8270D		1	134817	10/27/16 16:43	ONL	TAL SAC
Total/NA	Prep	3510C			134124	10/24/16 10:43	NGK	TAL SAC
Total/NA	Analysis	8081B		1	135416	11/01/16 14:49	SXH	TAL SAC
Total/NA	Prep	8151A			348542	10/27/16 12:46	KI	TAL DEN
Total/NA	Analysis	8151A DOD		10	349518	11/02/16 21:32	AMB1	TAL DEN
Total Recoverable	Prep	3005A			134512	10/26/16 07:00	NIM	TAL SAC
Total Recoverable	Analysis	6020		1	135189	10/28/16 14:37	LW1	TAL SAC
Total/NA	Prep	7470A			134327	10/25/16 11:14	SFM	TAL SAC
Total/NA	Analysis	7470A		1	134475	10/25/16 15:02	SFM	TAL SAC
Total/NA	Analysis	1010A		1	350782	11/10/16 09:30	JML	TAL DEN
Total/NA	Prep	9012B			349597	11/03/16 05:41	JML	TAL DEN
Total/NA	Analysis	9012B		1	349678	11/03/16 10:17	JML	TAL DEN
Total/NA	Prep	9030B			348387	10/26/16 17:14	NJF	TAL DEN
Total/NA	Analysis	9034		1	348390	10/26/16 17:18	NJF	TAL DEN
Total/NA	Analysis	9040C		1	134067	10/24/16 09:10	CFR	TAL SAC

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: HydroGeoLogic Inc
Project/Site: JBER Soil/Water

TestAmerica Job ID: 320-22881-1

Laboratory: TestAmerica Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8081B	3510C	Water	4,4'-DDD
8081B	3510C	Water	4,4'-DDE
8081B	3510C	Water	4,4'-DDT
8081B	3510C	Water	Aldrin
8081B	3510C	Water	alpha-BHC
8081B	3510C	Water	alpha-Chlordane
8081B	3510C	Water	beta-BHC
8081B	3510C	Water	delta-BHC
8081B	3510C	Water	Dieldrin
8081B	3510C	Water	Endosulfan I
8081B	3510C	Water	Endosulfan II
8081B	3510C	Water	Endosulfan sulfate
8081B	3510C	Water	Endrin
8081B	3510C	Water	Endrin aldehyde
8081B	3510C	Water	Endrin ketone
8081B	3510C	Water	gamma-BHC (Lindane)
8081B	3510C	Water	gamma-Chlordane
8081B	3510C	Water	Heptachlor
8081B	3510C	Water	Heptachlor epoxide
8081B	3510C	Water	Methoxychlor
8081B	3510C	Water	Toxaphene
8260B		Water	1,1,1,2-Tetrachloroethane
8260B		Water	1,1,1-Trichloroethane
8260B		Water	1,1,2,2-Tetrachloroethane
8260B		Water	1,1,2-Trichloroethane
8260B		Water	1,1-Dichloroethane
8260B		Water	1,1-Dichloroethene
8260B		Water	1,1-Dichloropropene
8260B		Water	1,2,3-Trichlorobenzene
8260B		Water	1,2,3-Trichloropropane
8260B		Water	1,2,4-Trichlorobenzene
8260B		Water	1,2,4-Trimethylbenzene
8260B		Water	1,2-Dibromo-3-Chloropropane
8260B		Water	1,2-Dibromoethane (EDB)
8260B		Water	1,2-Dichlorobenzene
8260B		Water	1,2-Dichloroethane
8260B		Water	1,2-Dichloropropane
8260B		Water	1,3,5-Trimethylbenzene
8260B		Water	1,3-Dichlorobenzene
8260B		Water	1,3-Dichloropropane
8260B		Water	1,4-Dichlorobenzene
8260B		Water	2,2-Dichloropropane
8260B		Water	2-Chlorotoluene
8260B		Water	4-Chlorotoluene
8260B		Water	Benzene
8260B		Water	Bromobenzene

Laboratory: TestAmerica Sacramento (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Bromochloromethane
8260B		Water	Bromodichloromethane
8260B		Water	Bromoform
8260B		Water	Bromomethane
8260B		Water	Carbon tetrachloride
8260B		Water	Chlorobenzene
8260B		Water	Chloroethane
8260B		Water	Chloroform
8260B		Water	Chloromethane
8260B		Water	cis-1,2-Dichloroethene
8260B		Water	cis-1,3-Dichloropropene
8260B		Water	Dibromomethane
8260B		Water	Dichlorodifluoromethane
8260B		Water	Ethylbenzene
8260B		Water	Hexachlorobutadiene
8260B		Water	Isopropylbenzene
8260B		Water	Methylene Chloride
8260B		Water	m-Xylene & p-Xylene
8260B		Water	Naphthalene
8260B		Water	n-Butylbenzene
8260B		Water	N-Propylbenzene
8260B		Water	o-Xylene
8260B		Water	p-Isopropyltoluene
8260B		Water	sec-Butylbenzene
8260B		Water	Styrene
8260B		Water	tert-Butylbenzene
8260B		Water	Tetrachloroethene
8260B		Water	Toluene
8260B		Water	trans-1,2-Dichloroethene
8260B		Water	trans-1,3-Dichloropropene
8260B		Water	Trichloroethene
8260B		Water	Trichlorofluoromethane
8260B		Water	Vinyl chloride
8270D	3510C	Water	1,2,4-Trichlorobenzene
8270D	3510C	Water	1,2-Dichlorobenzene
8270D	3510C	Water	1,3-Dichlorobenzene
8270D	3510C	Water	1,4-Dichlorobenzene
8270D	3510C	Water	2,2'-oxybis[1-chloropropane]
8270D	3510C	Water	2,4,5-Trichlorophenol
8270D	3510C	Water	2,4,6-Trichlorophenol
8270D	3510C	Water	2,4-Dichlorophenol
8270D	3510C	Water	2,4-Dimethylphenol
8270D	3510C	Water	2,4-Dinitrophenol
8270D	3510C	Water	2,4-Dinitrotoluene
8270D	3510C	Water	2,6-Dinitrotoluene
8270D	3510C	Water	2-Chloronaphthalene

Laboratory: TestAmerica Sacramento (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8270D	3510C	Water	2-Chlorophenol
8270D	3510C	Water	2-Methylnaphthalene
8270D	3510C	Water	2-Methylphenol
8270D	3510C	Water	2-Nitroaniline
8270D	3510C	Water	2-Nitrophenol
8270D	3510C	Water	3 & 4 Methylphenol
8270D	3510C	Water	3,3'-Dichlorobenzidine
8270D	3510C	Water	3-Nitroaniline
8270D	3510C	Water	4,6-Dinitro-2-methylphenol
8270D	3510C	Water	4-Bromophenyl phenyl ether
8270D	3510C	Water	4-Chloro-3-methylphenol
8270D	3510C	Water	4-Chloroaniline
8270D	3510C	Water	4-Chlorophenyl phenyl ether
8270D	3510C	Water	4-Nitroaniline
8270D	3510C	Water	4-Nitrophenol
8270D	3510C	Water	Acenaphthene
8270D	3510C	Water	Acenaphthylene
8270D	3510C	Water	Anthracene
8270D	3510C	Water	Azobenzene
8270D	3510C	Water	Benzo[a]anthracene
8270D	3510C	Water	Benzo[a]pyrene
8270D	3510C	Water	Benzo[b]fluoranthene
8270D	3510C	Water	Benzo[g,h,i]perylene
8270D	3510C	Water	Benzo[k]fluoranthene
8270D	3510C	Water	Benzoic acid
8270D	3510C	Water	Benzyl alcohol
8270D	3510C	Water	Bis(2-chloroethoxy)methane
8270D	3510C	Water	Bis(2-chloroethyl)ether
8270D	3510C	Water	Bis(2-ethylhexyl) phthalate
8270D	3510C	Water	Butyl benzyl phthalate
8270D	3510C	Water	Carbazole
8270D	3510C	Water	Chrysene
8270D	3510C	Water	Dibenz(a,h)anthracene
8270D	3510C	Water	Dibenzofuran
8270D	3510C	Water	Diethyl phthalate
8270D	3510C	Water	Dimethyl phthalate
8270D	3510C	Water	Di-n-butyl phthalate
8270D	3510C	Water	Di-n-octyl phthalate
8270D	3510C	Water	Fluoranthene
8270D	3510C	Water	Fluorene
8270D	3510C	Water	Hexachlorobenzene
8270D	3510C	Water	Hexachlorobutadiene
8270D	3510C	Water	Hexachloroethane
8270D	3510C	Water	Indeno[1,2,3-cd]pyrene
8270D	3510C	Water	Isophorone
8270D	3510C	Water	Naphthalene

Laboratory: TestAmerica Sacramento (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8270D	3510C	Water	Nitrobenzene
8270D	3510C	Water	N-Nitrosodimethylamine
8270D	3510C	Water	N-Nitrosodi-n-propylamine
8270D	3510C	Water	N-Nitrosodiphenylamine
8270D	3510C	Water	Pentachlorophenol
8270D	3510C	Water	Phenanthrene
8270D	3510C	Water	Phenol
8270D	3510C	Water	Pyrene
9040C		Water	pH adj. to 25 deg C

Laboratory: TestAmerica Denver

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17
A2LA	ISO/IEC 17025		2907.01	10-31-17
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-17
Arizona	State Program	9	AZ0713	12-19-16
Arkansas DEQ	State Program	6	88-0687	06-01-17
California	State Program	9	2513	08-31-16 *
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-17
Georgia	State Program	4	N/A	01-09-17
Illinois	NELAP	5	200017	04-30-17
Iowa	State Program	7	370	11-30-16
Kansas	NELAP	7	E-10166	04-30-17
Louisiana	NELAP	6	02096	06-30-17
Maine	State Program	1	CO0002	03-03-17
Minnesota	NELAP	5	8-999-405	12-31-16
Nevada	State Program	9	CO0026	07-31-17
New Hampshire	NELAP	1	205310	04-28-17
New Jersey	NELAP	2	CO004	06-30-17
New York	NELAP	2	11964	04-01-17
North Carolina (WW/SW)	State Program	4	358	12-31-16
North Dakota	State Program	8	R-034	01-09-17
Oklahoma	State Program	6	8614	08-31-17
Oregon	NELAP	10	4025	01-09-17
Pennsylvania	NELAP	3	68-00664	07-31-17
South Carolina	State Program	4	72002001	01-09-17
Texas	NELAP	6	T104704183-15-11	09-30-17
USDA	Federal		P330-13-00369	12-17-16
Utah	NELAP	8	CO00026	07-31-17
Virginia	NELAP	3	460232	06-14-17
Washington	State Program	10	C583	08-02-17
West Virginia DEP	State Program	3	354	11-30-16
Wisconsin	State Program	5	999615430	08-31-17

* Certification renewal pending - certification considered valid.

Laboratory: TestAmerica Denver (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wyoming (UST)	A2LA	8	2907.01	10-31-17

Method Summary

Client: HydroGeoLogic Inc
Project/Site: JBER Soil/Water

TestAmerica Job ID: 320-22881-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAC
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAC
8081B	Organochlorine Pesticides (GC)	SW846	TAL SAC
8151A DOD	Herbicides (GC)	EPA	TAL DEN
6020	Metals (ICP/MS)	SW846	TAL SAC
7470A	Mercury (CVAA)	SW846	TAL SAC
1010A	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL DEN
9012B	Cyanide, Total and/or Amenable	EPA	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
9040C	pH	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: HydroGeoLogic Inc
Project/Site: JBER Soil/Water

TestAmerica Job ID: 320-22881-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-22881-1	JBER-WW001	Water	10/20/16 10:40	10/21/16 09:10

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: HP12 Analysis Batch Number: 132993

Lab Sample ID: ICIS 320-132993/8 Client Sample ID:

Date Analyzed: 10/17/16 22:29 Lab File ID: H1017IC5.D GC Column: DB-624 ID: 0.18(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dioxane-d8 (IS)	5.59	Incomplete Integration	popovae	10/19/16 16:45

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: SV5 Analysis Batch Number: 130823

Lab Sample ID: IC 320-130823/2 Client Sample ID:

Date Analyzed: 10/05/16 10:35 Lab File ID: ODD1005A.D GC Column: HP-5MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	6.31	Incomplete Integration	onishim	10/05/16 11:09
3,3'-Dichlorobenzidine	12.30	Incomplete Integration	onishim	10/05/16 11:09

Lab Sample ID: IC 320-130823/3 Client Sample ID:

Date Analyzed: 10/05/16 11:03 Lab File ID: ODD1005B.D GC Column: HP-5MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	6.31	Incomplete Integration	onishim	10/05/16 11:29

Lab Sample ID: IC 320-130823/4 Client Sample ID:

Date Analyzed: 10/05/16 11:31 Lab File ID: ODD1005C.D GC Column: HP-5MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	6.31	Incomplete Integration	onishim	10/05/16 12:23

Lab Sample ID: IC 320-130823/12 Client Sample ID:

Date Analyzed: 10/05/16 15:14 Lab File ID: HSL1005A.D GC Column: HP-5MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,4-Dichlorophenol	6.43	Incomplete Integration	onishim	10/05/16 16:08
4-Nitrophenol	7.98	Incomplete Integration	onishim	10/05/16 16:08
4-Nitroaniline	8.37	Incomplete Integration	onishim	10/05/16 16:08
Benzo[a]pyrene	15.71	Incomplete Integration	onishim	10/05/16 16:08
Benzo[g,h,i]perylene	19.33	Incomplete Integration	onishim	10/05/16 16:08

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: SV5 Analysis Batch Number: 130823

Lab Sample ID: IC 320-130823/13 Client Sample ID:

Date Analyzed: 10/05/16 15:41 Lab File ID: HSL1005B.D GC Column: HP-5MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,4,5-Trichlorophenol	7.31	Baseline	onishim	10/05/16 16:11
4-Nitrophenol	7.97	Incomplete Integration	onishim	10/05/16 16:11
4,6-Dinitro-2-methylphenol	8.39	Incomplete Integration	onishim	10/05/16 16:11
Pentachlorophenol	9.06	Incomplete Integration	onishim	10/05/16 16:11
Dibenz(a,h)anthracene	18.81	Baseline	onishim	10/05/16 16:11
Benzo[g,h,i]perylene	19.33	Baseline	onishim	10/05/16 16:11

Lab Sample ID: IC 320-130823/14 Client Sample ID:

Date Analyzed: 10/05/16 16:09 Lab File ID: HSL1005C.D GC Column: HP-5MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Pentachlorophenol	9.06	Incomplete Integration	onishim	10/05/16 17:01

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 134186

Lab Sample ID: STD001 320-134186/12 IC Client Sample ID:

Date Analyzed: 10/24/16 16:32 Lab File ID: 1024-012.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.80	Baseline Smoothing	haques	10/25/16 14:18
Toxaphene Peak 2	7.27	Baseline Smoothing	haques	10/25/16 14:18
Toxaphene Peak 3	7.54	Baseline Smoothing	haques	10/25/16 14:18
Toxaphene Peak 4	7.67	Incomplete Integration	haques	10/25/16 14:24
Toxaphene Peak 5	7.78	Baseline Smoothing	haques	10/25/16 14:18

Lab Sample ID: STD001 320-134186/12 IC Client Sample ID:

Date Analyzed: 10/24/16 16:32 Lab File ID: 1024-012.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.68	Baseline Smoothing	haques	10/25/16 14:18
Toxaphene Peak 2	6.81	Baseline Smoothing	haques	10/25/16 14:18
Toxaphene Peak 3	7.19	Baseline Smoothing	haques	10/25/16 14:18
Toxaphene Peak 4	7.81	Baseline Smoothing	haques	10/25/16 14:18
Toxaphene Peak 5	7.87	Baseline Smoothing	haques	10/25/16 14:18

Lab Sample ID: STD002 320-134186/13 IC Client Sample ID:

Date Analyzed: 10/24/16 16:47 Lab File ID: 1024-013.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.80	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 2	7.27	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 3	7.54	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 4	7.67	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 5	7.78	Baseline Smoothing	haques	10/25/16 14:20

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 134186

Lab Sample ID: STD002 320-134186/13 IC Client Sample ID:

Date Analyzed: 10/24/16 16:47 Lab File ID: 1024-013.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.68	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 2	6.81	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 3	7.19	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 4	7.81	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 5	7.87	Baseline Smoothing	haques	10/25/16 14:20

Lab Sample ID: STD003 320-134186/14 IC Client Sample ID:

Date Analyzed: 10/24/16 17:03 Lab File ID: 1024-014.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.80	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 2	7.27	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 3	7.54	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 4	7.67	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 5	7.78	Baseline Smoothing	haques	10/25/16 14:20

Lab Sample ID: STD003 320-134186/14 IC Client Sample ID:

Date Analyzed: 10/24/16 17:03 Lab File ID: 1024-014.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.68	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 2	6.81	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 3	7.19	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 4	7.81	Baseline Smoothing	haques	10/25/16 14:20
Toxaphene Peak 5	7.87	Baseline Smoothing	haques	10/25/16 14:20

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 134186

Lab Sample ID: STD004 320-134186/15 IC Client Sample ID:

Date Analyzed: 10/24/16 17:19 Lab File ID: 1024-015.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.80	Baseline Smoothing	haques	10/25/16 14:21
Toxaphene Peak 2	7.27	Baseline Smoothing	haques	10/25/16 14:21
Toxaphene Peak 3	7.54	Baseline Smoothing	haques	10/25/16 14:21
Toxaphene Peak 4	7.67	Incomplete Integration	haques	10/25/16 14:23
Toxaphene Peak 5	7.78	Baseline Smoothing	haques	10/25/16 14:21

Lab Sample ID: STD004 320-134186/15 IC Client Sample ID:

Date Analyzed: 10/24/16 17:19 Lab File ID: 1024-015.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.68	Baseline Smoothing	haques	10/25/16 14:21
Toxaphene Peak 2	6.81	Baseline Smoothing	haques	10/25/16 14:21
Toxaphene Peak 3	7.19	Baseline Smoothing	haques	10/25/16 14:21
Toxaphene Peak 4	7.81	Baseline Smoothing	haques	10/25/16 14:21
Toxaphene Peak 5	7.87	Baseline Smoothing	haques	10/25/16 14:21

Lab Sample ID: STD006 320-134186/17 IC Client Sample ID:

Date Analyzed: 10/24/16 17:50 Lab File ID: 1024-017.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.80	Baseline Smoothing	haques	10/25/16 14:22
Toxaphene Peak 2	7.27	Baseline Smoothing	haques	10/25/16 14:22
Toxaphene Peak 3	7.54	Baseline Smoothing	haques	10/25/16 14:22
Toxaphene Peak 4	7.67	Incomplete Integration	haques	10/25/16 14:25
Toxaphene Peak 5	7.78	Baseline Smoothing	haques	10/25/16 14:22

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 134186

Lab Sample ID: STD006 320-134186/17 IC Client Sample ID:

Date Analyzed: 10/24/16 17:50 Lab File ID: 1024-017.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.68	Baseline Smoothing	haques	10/25/16 14:22
Toxaphene Peak 2	6.81	Baseline Smoothing	haques	10/25/16 14:22
Toxaphene Peak 3	7.19	Baseline Smoothing	haques	10/25/16 14:22
Toxaphene Peak 4	7.81	Baseline Smoothing	haques	10/25/16 14:22
Toxaphene Peak 5	7.87	Baseline Smoothing	haques	10/25/16 14:22

Lab Sample ID: ICV 320-134186/19 Client Sample ID:

Date Analyzed: 10/24/16 18:21 Lab File ID: 1024-019.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.80	Baseline Smoothing	haques	10/25/16 14:27
Toxaphene Peak 2	7.28	Baseline Smoothing	haques	10/25/16 14:27
Toxaphene Peak 3	7.54	Baseline Smoothing	haques	10/25/16 14:27
Toxaphene Peak 4	7.67	Incomplete Integration	haques	10/25/16 14:27
Toxaphene Peak 5	7.78	Baseline Smoothing	haques	10/25/16 14:27

Lab Sample ID: ICV 320-134186/19 Client Sample ID:

Date Analyzed: 10/24/16 18:21 Lab File ID: 1024-019.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.68	Baseline Smoothing	haques	10/25/16 14:27
Toxaphene Peak 2	6.81	Baseline Smoothing	haques	10/25/16 14:27
Toxaphene Peak 3	7.19	Baseline Smoothing	haques	10/25/16 14:27
Toxaphene Peak 4	7.81	Baseline Smoothing	haques	10/25/16 14:27
Toxaphene Peak 5	7.87	Baseline Smoothing	haques	10/25/16 14:27

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 135054

Lab Sample ID: STD001 320-135054/9 IC Client Sample ID:

Date Analyzed: 10/29/16 14:16 Lab File ID: 1029-009.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.21	Baseline Smoothing	haques	10/31/16 08:27

Lab Sample ID: STD001 320-135054/9 IC Client Sample ID:

Date Analyzed: 10/29/16 14:16 Lab File ID: 1029-009.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.41	Baseline Smoothing	haques	10/31/16 08:27

Lab Sample ID: STD002 320-135054/10 IC Client Sample ID:

Date Analyzed: 10/29/16 14:32 Lab File ID: 1029-010.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
4,4'-DDT	6.98	Incomplete Integration	haques	10/31/16 08:29
DCB Decachlorobiphenyl	9.21	Baseline Smoothing	haques	10/31/16 08:29

Lab Sample ID: STD002 320-135054/10 IC Client Sample ID:

Date Analyzed: 10/29/16 14:32 Lab File ID: 1029-010.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.41	Baseline Smoothing	haques	10/31/16 08:29

Lab Sample ID: STD003 320-135054/11 IC Client Sample ID:

Date Analyzed: 10/29/16 14:48 Lab File ID: 1029-011.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.21	Baseline Smoothing	haques	10/31/16 08:29

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 135054

Lab Sample ID: STD003 320-135054/11 IC Client Sample ID:

Date Analyzed: 10/29/16 14:48 Lab File ID: 1029-011.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.41	Baseline Smoothing	haques	10/31/16 08:29

Lab Sample ID: STD004 320-135054/12 IC Client Sample ID:

Date Analyzed: 10/29/16 15:03 Lab File ID: 1029-012.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.21	Baseline Smoothing	haques	10/31/16 08:30

Lab Sample ID: STD004 320-135054/12 IC Client Sample ID:

Date Analyzed: 10/29/16 15:03 Lab File ID: 1029-012.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.41	Baseline Smoothing	haques	10/31/16 08:30

Lab Sample ID: STD005 320-135054/13 IC Client Sample ID:

Date Analyzed: 10/29/16 15:19 Lab File ID: 1029-013.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.21	Baseline Smoothing	haques	10/31/16 08:31

Lab Sample ID: STD005 320-135054/13 IC Client Sample ID:

Date Analyzed: 10/29/16 15:19 Lab File ID: 1029-013.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.41	Baseline Smoothing	haques	10/31/16 08:31

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 135054

Lab Sample ID: STD006 320-135054/14 IC Client Sample ID:

Date Analyzed: 10/29/16 15:35 Lab File ID: 1029-014.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.21	Baseline Smoothing	haques	10/31/16 08:31

Lab Sample ID: STD006 320-135054/14 IC Client Sample ID:

Date Analyzed: 10/29/16 15:35 Lab File ID: 1029-014.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.41	Baseline Smoothing	haques	10/31/16 08:31

Lab Sample ID: STD007 320-135054/15 IC Client Sample ID:

Date Analyzed: 10/29/16 15:50 Lab File ID: 1029-015.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.21	Baseline Smoothing	haques	10/31/16 08:33

Lab Sample ID: STD007 320-135054/15 IC Client Sample ID:

Date Analyzed: 10/29/16 15:50 Lab File ID: 1029-015.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.41	Baseline Smoothing	haques	10/31/16 08:33

Lab Sample ID: ICV 320-135054/17 Client Sample ID:

Date Analyzed: 10/29/16 16:22 Lab File ID: 1029-017.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.21	Baseline Smoothing	haques	10/31/16 08:34

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 135054

Lab Sample ID: ICV 320-135054/17 Client Sample ID:

Date Analyzed: 10/29/16 16:22 Lab File ID: 1029-017.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
DCB Decachlorobiphenyl	9.41	Baseline Smoothing	haques	10/31/16 08:34

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 135416

Lab Sample ID: CCV 320-135416/4 Client Sample ID:

Date Analyzed: 11/01/16 10:53 Lab File ID: 1101-004.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.80	Baseline Smoothing	haques	11/01/16 11:16
Toxaphene Peak 2	7.27	Baseline Smoothing	haques	11/01/16 11:16
Toxaphene Peak 3	7.54	Baseline Smoothing	haques	11/01/16 11:16
Toxaphene Peak 4	7.67	Incomplete Integration	haques	11/01/16 11:16
Toxaphene Peak 5	7.78	Baseline Smoothing	haques	11/01/16 11:16

Lab Sample ID: CCV 320-135416/4 Client Sample ID:

Date Analyzed: 11/01/16 10:53 Lab File ID: 1101-004.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.66	Baseline Smoothing	haques	11/01/16 11:16
Toxaphene Peak 2	6.80	Baseline Smoothing	haques	11/01/16 11:16
Toxaphene Peak 3	7.18	Baseline Smoothing	haques	11/01/16 11:16
Toxaphene Peak 4	7.80	Baseline Smoothing	haques	11/01/16 11:16
Toxaphene Peak 5	7.86	Baseline Smoothing	haques	11/01/16 11:16

Lab Sample ID: MB 320-134124/1-A Client Sample ID:

Date Analyzed: 11/01/16 12:06 Lab File ID: 1101-008.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
gamma-BHC (Lindane)	4.52	Split Peak	haques	11/01/16 16:53
beta-BHC	4.58	Split Peak	haques	11/01/16 16:53
delta-BHC	4.79	Split Peak	haques	11/01/16 16:53
Dieldrin	6.07	Baseline Smoothing	haques	11/01/16 16:53

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 135416

Lab Sample ID: LCS 320-134124/2-A Client Sample ID:

Date Analyzed: 11/01/16 12:21 Lab File ID: 1101-009.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Endosulfan sulfate	7.87	Split Peak	haques	11/01/16 16:53

Lab Sample ID: LCS 320-134124/5-A Client Sample ID:

Date Analyzed: 11/01/16 12:53 Lab File ID: 1101-011.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Tetrachloro-m-xylene	3.85	Baseline Smoothing	haques	11/01/16 13:29
DCB Decachlorobiphenyl	9.20	Baseline Smoothing	haques	11/01/16 13:29

Lab Sample ID: LCS 320-134124/5-A Client Sample ID:

Date Analyzed: 11/01/16 12:53 Lab File ID: 1101-011.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Tetrachloro-m-xylene	3.73	Baseline Smoothing	haques	11/01/16 13:29
DCB Decachlorobiphenyl	9.40	Baseline Smoothing	haques	11/01/16 13:29

Lab Sample ID: 320-22881-1 Client Sample ID: JBER-WW001

Date Analyzed: 11/01/16 14:49 Lab File ID: 1101-016.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
gamma-BHC (Lindane)	4.58	Baseline Smoothing	haques	11/01/16 17:04
beta-BHC	4.64	Baseline Smoothing	haques	11/01/16 17:04
delta-BHC	4.78	Baseline Smoothing	haques	11/01/16 17:04
Heptachlor	4.95	Baseline Smoothing	haques	11/01/16 17:04

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Analysis Batch Number: 135416

Lab Sample ID: 320-22881-1 Client Sample ID: JBER-WW001

Date Analyzed: 11/01/16 14:49 Lab File ID: 1101-016.D GC Column: STX-CLP II ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
alpha-BHC	4.26	Baseline Smoothing	haques	11/01/16 17:04
gamma-BHC (Lindane)	4.51	Baseline Smoothing	haques	11/01/16 17:04
beta-BHC	4.60	Baseline Smoothing	haques	11/01/16 17:04
delta-BHC	4.79	Baseline Smoothing	haques	11/01/16 17:04
Heptachlor	4.82	Baseline Smoothing	haques	11/01/16 17:04
4,4'-DDD	6.56	Baseline Smoothing	haques	11/01/16 17:04
4,4'-DDT	7.00	Baseline Smoothing	haques	11/01/16 17:04

Lab Sample ID: CCV 320-135416/20 Client Sample ID:

Date Analyzed: 11/01/16 15:05 Lab File ID: 1101-017.D GC Column: STX-CLP I ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.79	Incomplete Integration	haques	11/01/16 15:46
Toxaphene Peak 2	7.26	Incomplete Integration	haques	11/01/16 15:46
Toxaphene Peak 3	7.53	Incomplete Integration	haques	11/01/16 15:46
Toxaphene Peak 4	7.66	Incomplete Integration	haques	11/01/16 15:46
Toxaphene Peak 5	7.77	Incomplete Integration	haques	11/01/16 15:46

HERBICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: SGC_M Analysis Batch Number: 349518

Lab Sample ID: 320-22881-1 Client Sample ID: JBER-WW001

Date Analyzed: 11/02/16 21:32 Lab File ID: 11020012.D GC Column: RTI-XLB ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,4-Dichlorophenylacetic acid	9.62	Baseline Smoothing	byla	11/10/16 13:31
MCPP	9.78	Baseline Smoothing	byla	11/10/16 13:31

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
GCPCBSU_00071	01/11/17	07/11/16	Acetone, Lot 0000130853	200 mL	GCPCBSU_00070	0.8 mL	DCB Decachlorobiphenyl	0.8 ug/mL
							Tetrachloro-m-xylene	0.8 ug/mL
.GCPCBSU_00070	03/31/22	Restek, Lot A0115723			(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
GCPESTIC_00013	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00026	250 uL	DCB Decachlorobiphenyl	50 ug/L
							Tetrachloro-m-xylene	50 ug/L
.GCPESTIM_00026	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPESTSU_00028	1 mL	DCB Decachlorobiphenyl	20 ug/mL
							Tetrachloro-m-xylene	20 ug/mL
..GCPESTSU_00028	12/16/16	Restek, Lot A0108779			(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
GCPESTIC_00013	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00026	250 uL	4,4'-DDD	50 ug/L
							4,4'-DDE	50 ug/L
							4,4'-DDT	50 ug/L
							Aldrin	50 ug/L
							alpha-BHC	50 ug/L
							alpha-Chlordane	50 ug/L
							beta-BHC	50 ug/L
							delta-BHC	50 ug/L
							Dieldrin	50 ug/L
							Endosulfan I	50 ug/L
							Endosulfan II	50 ug/L
							Endosulfan sulfate	50 ug/L
							Endrin	50 ug/L
							Endrin aldehyde	50 ug/L
							Endrin ketone	50 ug/L
							gamma-BHC (Lindane)	50 ug/L
							gamma-Chlordane	50 ug/L
							Heptachlor	50 ug/L
							Heptachlor epoxide	50 ug/L
							Methoxychlor	50 ug/L
.GCPESTIM_00026	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPestTA_00077	0.1 mL	4,4'-DDD	20 ug/mL
							4,4'-DDE	20 ug/mL
							4,4'-DDT	20 ug/mL
							Aldrin	20 ug/mL
							alpha-BHC	20 ug/mL
							alpha-Chlordane	20 ug/mL
							beta-BHC	20 ug/mL
							delta-BHC	20 ug/mL
							Dieldrin	20 ug/mL
							Endosulfan I	20 ug/mL
							Endosulfan II	20 ug/mL
							Endosulfan sulfate	20 ug/mL
							Endrin	20 ug/mL
							Endrin aldehyde	20 ug/mL
							Endrin ketone	20 ug/mL
							gamma-BHC (Lindane)	20 ug/mL
							gamma-Chlordane	20 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Heptachlor	20 ug/mL
							Heptachlor epoxide	20 ug/mL
							Methoxychlor	20 ug/mL
..GCPestTA_00077	12/16/16		Restek, Lot A0108854		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
GCPESTL1_00013	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00025	5 uL	DCB Decachlorobiphenyl	1 ug/L
							Tetrachloro-m-xylene	1 ug/L
							4,4'-DDD	1 ug/L
							4,4'-DDE	1 ug/L
							4,4'-DDT	1 ug/L
							Aldrin	1 ug/L
							alpha-BHC	1 ug/L
							alpha-Chlordane	1 ug/L
							beta-BHC	1 ug/L
							delta-BHC	1 ug/L
							Dieldrin	1 ug/L
							Endosulfan I	1 ug/L
							Endosulfan II	1 ug/L
							Endosulfan sulfate	1 ug/L
							Endrin	1 ug/L
							Endrin aldehyde	1 ug/L
							Endrin ketone	1 ug/L
							gamma-BHC (Lindane)	1 ug/L
							gamma-Chlordane	1 ug/L
							Heptachlor	1 ug/L
							Heptachlor epoxide	1 ug/L
							Methoxychlor	1 ug/L
					GCPESTIS_00007	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
.GCPESTIM_00025	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPESTSU_00028	1 mL	DCB Decachlorobiphenyl	20 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tetrachloro-m-xylene	20 ug/mL
					GCPestTA_00076	0.1 mL	4,4'-DDD	20 ug/mL
							4,4'-DDE	20 ug/mL
							4,4'-DDT	20 ug/mL
							Aldrin	20 ug/mL
							alpha-BHC	20 ug/mL
							alpha-Chlordane	20 ug/mL
							beta-BHC	20 ug/mL
							delta-BHC	20 ug/mL
							Dieldrin	20 ug/mL
							Endosulfan I	20 ug/mL
							Endosulfan II	20 ug/mL
							Endosulfan sulfate	20 ug/mL
							Endrin	20 ug/mL
							Endrin aldehyde	20 ug/mL
							Endrin ketone	20 ug/mL
							gamma-BHC (Lindane)	20 ug/mL
							gamma-Chlordane	20 ug/mL
							Heptachlor	20 ug/mL
							Heptachlor epoxide	20 ug/mL
							Methoxychlor	20 ug/mL
..GCPESTSU_00028	12/16/16		Restek, Lot A0108779		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
..GCPestTA_00076	12/16/16		Restek, Lot A0106146		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
.GCPESTIS_00007	12/16/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
GCPESTL2_00012	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00025	10 uL	DCB Decachlorobiphenyl	2 ug/L
							Tetrachloro-m-xylene	2 ug/L
							4,4'-DDD	2 ug/L

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4,4'-DDE	2 ug/L
							4,4'-DDT	2 ug/L
							Aldrin	2 ug/L
							alpha-BHC	2 ug/L
							alpha-Chlordane	2 ug/L
							beta-BHC	2 ug/L
							delta-BHC	2 ug/L
							Dieldrin	2 ug/L
							Endosulfan I	2 ug/L
							Endosulfan II	2 ug/L
							Endosulfan sulfate	2 ug/L
							Endrin	2 ug/L
							Endrin aldehyde	2 ug/L
							Endrin ketone	2 ug/L
							gamma-BHC (Lindane)	2 ug/L
							gamma-Chlordane	2 ug/L
							Heptachlor	2 ug/L
							Heptachlor epoxide	2 ug/L
							Methoxychlor	2 ug/L
					GCPESTIS_00007	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
.GCPESTIM_00025	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPESTSU_00028	1 mL	DCB Decachlorobiphenyl	20 ug/mL
							Tetrachloro-m-xylene	20 ug/mL
					GCPestTA_00076	0.1 mL	4,4'-DDD	20 ug/mL
							4,4'-DDE	20 ug/mL
							4,4'-DDT	20 ug/mL
							Aldrin	20 ug/mL
							alpha-BHC	20 ug/mL
							alpha-Chlordane	20 ug/mL
							beta-BHC	20 ug/mL
							delta-BHC	20 ug/mL
							Dieldrin	20 ug/mL
							Endosulfan I	20 ug/mL
							Endosulfan II	20 ug/mL
							Endosulfan sulfate	20 ug/mL
							Endrin	20 ug/mL
							Endrin aldehyde	20 ug/mL
							Endrin ketone	20 ug/mL
							gamma-BHC (Lindane)	20 ug/mL
							gamma-Chlordane	20 ug/mL
							Heptachlor	20 ug/mL
							Heptachlor epoxide	20 ug/mL
							Methoxychlor	20 ug/mL
..GCPESTSU_00028	12/16/16		Restek, Lot A0108779		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
..GCPestTA_00076	12/16/16		Restek, Lot A0106146		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
.GCPESTIS_00007	12/16/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
GCPESTL3_00012	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00025	25 uL	DCB Decachlorobiphenyl	5 ug/L
							Tetrachloro-m-xylene	5 ug/L
							4,4'-DDD	5 ug/L
							4,4'-DDE	5 ug/L
							4,4'-DDT	5 ug/L
							Aldrin	5 ug/L
							alpha-BHC	5 ug/L
							alpha-Chlordane	5 ug/L
							beta-BHC	5 ug/L
							delta-BHC	5 ug/L
							Dieldrin	5 ug/L
							Endosulfan I	5 ug/L
							Endosulfan II	5 ug/L
							Endosulfan sulfate	5 ug/L
							Endrin	5 ug/L
							Endrin aldehyde	5 ug/L
							Endrin ketone	5 ug/L
							gamma-BHC (Lindane)	5 ug/L
							gamma-Chlordane	5 ug/L
							Heptachlor	5 ug/L
							Heptachlor epoxide	5 ug/L
							Methoxychlor	5 ug/L
					GCPESTIS_00007	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
.GCPESTIM_00025	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPESTSU_00028	1 mL	DCB Decachlorobiphenyl	20 ug/mL
							Tetrachloro-m-xylene	20 ug/mL
					GCPestTA_00076	0.1 mL	4,4'-DDD	20 ug/mL
							4,4'-DDE	20 ug/mL
							4,4'-DDT	20 ug/mL
							Aldrin	20 ug/mL
							alpha-BHC	20 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							alpha-Chlordane	20 ug/mL
							beta-BHC	20 ug/mL
							delta-BHC	20 ug/mL
							Dieldrin	20 ug/mL
							Endosulfan I	20 ug/mL
							Endosulfan II	20 ug/mL
							Endosulfan sulfate	20 ug/mL
							Endrin	20 ug/mL
							Endrin aldehyde	20 ug/mL
							Endrin ketone	20 ug/mL
							gamma-BHC (Lindane)	20 ug/mL
							gamma-Chlordane	20 ug/mL
							Heptachlor	20 ug/mL
							Heptachlor epoxide	20 ug/mL
							Methoxychlor	20 ug/mL
..GCPESTSU_00028	12/16/16		Restek, Lot A0108779		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
..GCPestTA_00076	12/16/16		Restek, Lot A0106146		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
.GCPESTIS_00007	12/16/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
GCPESTL4_00012	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00025	50 uL	DCB Decachlorobiphenyl	10 ug/L
							Tetrachloro-m-xylene	10 ug/L
							4,4'-DDD	10 ug/L
							4,4'-DDE	10 ug/L
							4,4'-DDT	10 ug/L
							Aldrin	10 ug/L
							alpha-BHC	10 ug/L
							alpha-Chlordane	10 ug/L
							beta-BHC	10 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							delta-BHC	10 ug/L
							Dieldrin	10 ug/L
							Endosulfan I	10 ug/L
							Endosulfan II	10 ug/L
							Endosulfan sulfate	10 ug/L
							Endrin	10 ug/L
							Endrin aldehyde	10 ug/L
							Endrin ketone	10 ug/L
							gamma-BHC (Lindane)	10 ug/L
							gamma-Chlordane	10 ug/L
							Heptachlor	10 ug/L
							Heptachlor epoxide	10 ug/L
							Methoxychlor	10 ug/L
					GCPESTIS_00007	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
.GCPESTIM_00025	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPESTSU_00028	1 mL	DCB Decachlorobiphenyl	20 ug/mL
							Tetrachloro-m-xylene	20 ug/mL
					GCPestTA_00076	0.1 mL	4,4'-DDD	20 ug/mL
							4,4'-DDE	20 ug/mL
							4,4'-DDT	20 ug/mL
							Aldrin	20 ug/mL
							alpha-BHC	20 ug/mL
							alpha-Chlordane	20 ug/mL
							beta-BHC	20 ug/mL
							delta-BHC	20 ug/mL
							Dieldrin	20 ug/mL
							Endosulfan I	20 ug/mL
							Endosulfan II	20 ug/mL
							Endosulfan sulfate	20 ug/mL
							Endrin	20 ug/mL
							Endrin aldehyde	20 ug/mL
							Endrin ketone	20 ug/mL
							gamma-BHC (Lindane)	20 ug/mL
							gamma-Chlordane	20 ug/mL
							Heptachlor	20 ug/mL
							Heptachlor epoxide	20 ug/mL
							Methoxychlor	20 ug/mL
..GCPESTSU_00028	12/16/16		Restek, Lot A0108779		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
..GCPestTA_00076	12/16/16		Restek, Lot A0106146		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
.GCPESTIS_00007	12/16/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
GCPESTL5_00012	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00025	100 uL	DCB Decachlorobiphenyl	20 ug/L
							Tetrachloro-m-xylene	20 ug/L
							4,4'-DDD	20 ug/L
							4,4'-DDE	20 ug/L
							4,4'-DDT	20 ug/L
							Aldrin	20 ug/L
							alpha-BHC	20 ug/L
							alpha-Chlordane	20 ug/L
							beta-BHC	20 ug/L
							delta-BHC	20 ug/L
							Dieldrin	20 ug/L
							Endosulfan I	20 ug/L
							Endosulfan II	20 ug/L
							Endosulfan sulfate	20 ug/L
							Endrin	20 ug/L
							Endrin aldehyde	20 ug/L
							Endrin ketone	20 ug/L
							gamma-BHC (Lindane)	20 ug/L
							gamma-Chlordane	20 ug/L
							Heptachlor	20 ug/L
							Heptachlor epoxide	20 ug/L
							Methoxychlor	20 ug/L
					GCPESTIS_00007	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
.GCPESTIM_00025	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPESTSU_00028	1 mL	DCB Decachlorobiphenyl	20 ug/mL
							Tetrachloro-m-xylene	20 ug/mL
					GCPestTA_00076	0.1 mL	4,4'-DDD	20 ug/mL
							4,4'-DDE	20 ug/mL
							4,4'-DDT	20 ug/mL
							Aldrin	20 ug/mL
							alpha-BHC	20 ug/mL
							alpha-Chlordane	20 ug/mL
							beta-BHC	20 ug/mL
							delta-BHC	20 ug/mL
							Dieldrin	20 ug/mL
							Endosulfan I	20 ug/mL
							Endosulfan II	20 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Endosulfan sulfate	20 ug/mL
							Endrin	20 ug/mL
							Endrin aldehyde	20 ug/mL
							Endrin ketone	20 ug/mL
							gamma-BHC (Lindane)	20 ug/mL
							gamma-Chlordane	20 ug/mL
							Heptachlor	20 ug/mL
							Heptachlor epoxide	20 ug/mL
							Methoxychlor	20 ug/mL
..GCPESTSU_00028	12/16/16		Restek, Lot A0108779		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
..GCPestTA_00076	12/16/16		Restek, Lot A0106146		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
.GCPESTIS_00007	12/16/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
GCPESTL6_00013	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00025	250 uL	DCB Decachlorobiphenyl	50 ug/L
							Tetrachloro-m-xylene	50 ug/L
							4,4'-DDD	50 ug/L
							4,4'-DDE	50 ug/L
							4,4'-DDT	50 ug/L
							Aldrin	50 ug/L
							alpha-BHC	50 ug/L
							alpha-Chlordane	50 ug/L
							beta-BHC	50 ug/L
							delta-BHC	50 ug/L
							Dieldrin	50 ug/L
							Endosulfan I	50 ug/L
							Endosulfan II	50 ug/L
							Endosulfan sulfate	50 ug/L
							Endrin	50 ug/L

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Endrin aldehyde	50 ug/L
							Endrin ketone	50 ug/L
							gamma-BHC (Lindane)	50 ug/L
							gamma-Chlordane	50 ug/L
							Heptachlor	50 ug/L
							Heptachlor epoxide	50 ug/L
							Methoxychlor	50 ug/L
					GCPESTIS_00007	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
.GCPESTIM_00025	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPESTSU_00028	1 mL	DCB Decachlorobiphenyl	20 ug/mL
							Tetrachloro-m-xylene	20 ug/mL
					GCPestTA_00076	0.1 mL	4,4'-DDD	20 ug/mL
							4,4'-DDE	20 ug/mL
							4,4'-DDT	20 ug/mL
							Aldrin	20 ug/mL
							alpha-BHC	20 ug/mL
							alpha-Chlordane	20 ug/mL
							beta-BHC	20 ug/mL
							delta-BHC	20 ug/mL
							Dieldrin	20 ug/mL
							Endosulfan I	20 ug/mL
							Endosulfan II	20 ug/mL
							Endosulfan sulfate	20 ug/mL
							Endrin	20 ug/mL
							Endrin aldehyde	20 ug/mL
							Endrin ketone	20 ug/mL
							gamma-BHC (Lindane)	20 ug/mL
							gamma-Chlordane	20 ug/mL
							Heptachlor	20 ug/mL
							Heptachlor epoxide	20 ug/mL
							Methoxychlor	20 ug/mL
..GCPESTSU_00028	12/16/16		Restek, Lot A0108779		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
..GCPestTA_00076	12/16/16		Restek, Lot A0106146		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
.GCPESTIS_00007	12/16/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
GCPESTL7_00013	12/16/16	06/16/16	Hexane, Lot 0000135581	100 mL	GCPESTIM_00025	500 uL	DCB Decachlorobiphenyl	100 ug/L
							Tetrachloro-m-xylene	100 ug/L
							4,4'-DDD	100 ug/L
							4,4'-DDE	100 ug/L
							4,4'-DDT	100 ug/L
							Aldrin	100 ug/L
							alpha-BHC	100 ug/L
							alpha-Chlordane	100 ug/L
							beta-BHC	100 ug/L
							delta-BHC	100 ug/L
							Dieldrin	100 ug/L
							Endosulfan I	100 ug/L
							Endosulfan II	100 ug/L
							Endosulfan sulfate	100 ug/L
							Endrin	100 ug/L
							Endrin aldehyde	100 ug/L
							Endrin ketone	100 ug/L
							gamma-BHC (Lindane)	100 ug/L
							gamma-Chlordane	100 ug/L
							Heptachlor	100 ug/L
							Heptachlor epoxide	100 ug/L
							Methoxychlor	100 ug/L
					GCPESTIS_00007	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
.GCPESTIM_00025	12/16/16	06/16/16	Hexane, Lot 0000135581	10 mL	GCPESTSU_00028	1 mL	DCB Decachlorobiphenyl	20 ug/mL
							Tetrachloro-m-xylene	20 ug/mL
					GCPestTA_00076	0.1 mL	4,4'-DDD	20 ug/mL
							4,4'-DDE	20 ug/mL
							4,4'-DDT	20 ug/mL
							Aldrin	20 ug/mL
							alpha-BHC	20 ug/mL
							alpha-Chlordane	20 ug/mL
							beta-BHC	20 ug/mL
							delta-BHC	20 ug/mL
							Dieldrin	20 ug/mL
							Endosulfan I	20 ug/mL
							Endosulfan II	20 ug/mL
							Endosulfan sulfate	20 ug/mL
							Endrin	20 ug/mL
							Endrin aldehyde	20 ug/mL
							Endrin ketone	20 ug/mL
							gamma-BHC (Lindane)	20 ug/mL
							gamma-Chlordane	20 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Heptachlor	20 ug/mL
							Heptachlor epoxide	20 ug/mL
							Methoxychlor	20 ug/mL
..GCPESTSU_00028	12/16/16		Restek, Lot A0108779		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
..GCPestTA_00076	12/16/16		Restek, Lot A0106146		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
.GCPESTIS_00007	12/16/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
GCPESTPEM_00006	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GC44DDTTA_00006	0.08 mL	4,4'-DDT	80 ug/L
					GCENDRINTA_00006	0.08 mL	Endrin	80 ug/L
					GCPESTSU_00026	0.01 mL	DCB Decachlorobiphenyl	20 ug/L
							Tetrachloro-m-xylene	20 ug/L
.GC44DDTTA_00006	12/08/16		Ultra, Lot CM-3903		(Purchased Reagent)		4,4'-DDT	100 ug/mL
.GCENDRINTA_00006	12/08/16		Ultra, Lot CM-6138		(Purchased Reagent)		Endrin	100 ug/mL
.GCPESTSU_00026	12/08/16		Restek, Lot A0108779		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
GCPestSP_00119	10/28/16	10/14/16	Methanol, Lot 147462	50 mL	GCPestTA_00086	0.5 mL	4,4'-DDD	1 ug/mL
							4,4'-DDE	1 ug/mL
							4,4'-DDT	1 ug/mL
							Aldrin	1 ug/mL
							alpha-BHC	1 ug/mL
							alpha-Chlordane	1 ug/mL
							beta-BHC	1 ug/mL
							delta-BHC	1 ug/mL
							Dieldrin	1 ug/mL
							Endosulfan I	1 ug/mL
							Endosulfan II	1 ug/mL
							Endosulfan sulfate	1 ug/mL
							Endrin	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Endrin aldehyde	1 ug/mL
							Endrin ketone	1 ug/mL
							gamma-BHC (Lindane)	1 ug/mL
							gamma-Chlordane	1 ug/mL
							Heptachlor	1 ug/mL
							Heptachlor epoxide	1 ug/mL
							Methoxychlor	1 ug/mL
.GCPestTA_00086	04/14/17	10/14/16	Hexane, Lot 0000140376	10 mL	GCPestTA_00082	500 uL	4,4'-DDD	100 ug/mL
							4,4'-DDE	100 ug/mL
							4,4'-DDT	100 ug/mL
							Aldrin	100 ug/mL
							alpha-BHC	100 ug/mL
							alpha-Chlordane	100 ug/mL
							beta-BHC	100 ug/mL
							delta-BHC	100 ug/mL
							Dieldrin	100 ug/mL
							Endosulfan I	100 ug/mL
							Endosulfan II	100 ug/mL
							Endosulfan sulfate	100 ug/mL
							Endrin	100 ug/mL
							Endrin aldehyde	100 ug/mL
							Endrin ketone	100 ug/mL
							gamma-BHC (Lindane)	100 ug/mL
							gamma-Chlordane	100 ug/mL
							Heptachlor	100 ug/mL
							Heptachlor epoxide	100 ug/mL
							Methoxychlor	100 ug/mL
..GCPestTA_00082	10/31/19		Restek, Lot A0114872		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
GCTOXIC_00011	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXTA_00051	10 uL	Toxaphene	500 ug/L
.GCTOXTA_00051	12/08/16		Restek, Lot A0107659		(Purchased Reagent)		Toxaphene	5000 ug/mL
GCTOXL1_00014	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCPESTIS_00006	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
					GCTOXIM_00008	100 uL	Toxaphene Peak 1	50 ug/L
							Toxaphene Peak 2	50 ug/L
							Toxaphene Peak 3	50 ug/L
							Toxaphene Peak 4	50 ug/L
							Toxaphene Peak 5	50 ug/L
.GCPESTIS_00006	12/08/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
.GCTOXIM_00008	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXTA_00050	1 mL	Toxaphene Peak 1	50 ug/mL
							Toxaphene Peak 2	50 ug/mL
							Toxaphene Peak 3	50 ug/mL
							Toxaphene Peak 4	50 ug/mL
							Toxaphene Peak 5	50 ug/mL
..GCTOXTA_00050	12/08/16		Restek, Lot A0110607		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
GCTOXL2_00012	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCPESTIS_00006	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
					GCTOXIM_00008	200 uL	Toxaphene Peak 1	100 ug/L
							Toxaphene Peak 2	100 ug/L
							Toxaphene Peak 3	100 ug/L
							Toxaphene Peak 4	100 ug/L
							Toxaphene Peak 5	100 ug/L
.GCPESTIS_00006	12/08/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
.GCTOXIM_00008	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXTA_00050	1 mL	Toxaphene Peak 1	50 ug/mL
							Toxaphene Peak 2	50 ug/mL
							Toxaphene Peak 3	50 ug/mL
							Toxaphene Peak 4	50 ug/mL
							Toxaphene Peak 5	50 ug/mL
..GCTOXTA_00050	12/08/16		Restek, Lot A0110607		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
GCTOXL3_00012	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCPESTIS_00006	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
					GCTOXIM_00008	300 uL	Toxaphene Peak 1	150 ug/L
							Toxaphene Peak 2	150 ug/L
							Toxaphene Peak 3	150 ug/L
							Toxaphene Peak 4	150 ug/L
							Toxaphene Peak 5	150 ug/L
.GCPESTIS_00006	12/08/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
.GCTOXIM_00008	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXTA_00050	1 mL	Toxaphene Peak 1	50 ug/mL
							Toxaphene Peak 2	50 ug/mL
							Toxaphene Peak 3	50 ug/mL
							Toxaphene Peak 4	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Toxaphene Peak 5	50 ug/mL
..GCTOXTA_00050	12/08/16		Restek, Lot A0110607		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
GCTOXL4_00012	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCPESTIS_00006	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
					GCTOXIM_00008	600 uL	Toxaphene Peak 1	300 ug/L
							Toxaphene Peak 2	300 ug/L
							Toxaphene Peak 3	300 ug/L
							Toxaphene Peak 4	300 ug/L
							Toxaphene Peak 5	300 ug/L
.GCPESTIS_00006	12/08/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
.GCTOXIM_00008	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXTA_00050	1 mL	Toxaphene Peak 1	50 ug/mL
							Toxaphene Peak 2	50 ug/mL
							Toxaphene Peak 3	50 ug/mL
							Toxaphene Peak 4	50 ug/mL
							Toxaphene Peak 5	50 ug/mL
..GCTOXTA_00050	12/08/16		Restek, Lot A0110607		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
GCTOXL5_00012	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCPESTIS_00006	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
					GCTOXIM_00008	1000 uL	Toxaphene Peak 1	500 ug/L
							Toxaphene Peak 2	500 ug/L
							Toxaphene Peak 3	500 ug/L
							Toxaphene Peak 4	500 ug/L
							Toxaphene Peak 5	500 ug/L
.GCPESTIS_00006	12/08/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
.GCTOXIM_00008	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXTA_00050	1 mL	Toxaphene Peak 1	50 ug/mL
							Toxaphene Peak 2	50 ug/mL
							Toxaphene Peak 3	50 ug/mL
							Toxaphene Peak 4	50 ug/mL
							Toxaphene Peak 5	50 ug/mL
..GCTOXTA_00050	12/08/16		Restek, Lot A0110607		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
GCTOXL5_00012	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXIM_00008	1000 uL	Toxaphene	500 ug/L
.GCTOXIM_00008	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXTA_00050	1 mL	Toxaphene	50 ug/mL
..GCTOXTA_00050	12/08/16		Restek, Lot A0110607		(Purchased Reagent)		Toxaphene	5000 ug/mL
GCTOXL6_00012	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCPESTIS_00006	20 uL	1-Bromo-2-nitrobenzene	200 ug/L
					GCTOXIM_00008	2000 uL	Toxaphene Peak 1	1000 ug/L
							Toxaphene Peak 2	1000 ug/L
							Toxaphene Peak 3	1000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Toxaphene Peak 4	1000 ug/L
							Toxaphene Peak 5	1000 ug/L
.GCPESTIS_00006	12/08/16		Restek, Lot A0113173		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
.GCTOXIM_00008	12/08/16	06/08/16	Hexane, Lot 0000135581	100 mL	GCTOXTA_00050	1 mL	Toxaphene Peak 1	50 ug/mL
							Toxaphene Peak 2	50 ug/mL
							Toxaphene Peak 3	50 ug/mL
							Toxaphene Peak 4	50 ug/mL
							Toxaphene Peak 5	50 ug/mL
..GCTOXTA_00050	12/08/16		Restek, Lot A0110607		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
GCTOXSP_00019	03/23/17	09/23/16	Acetone, Lot 00000137485	200 mL	GCTOXTA_00052	200 uL	Toxaphene	5 ug/mL
							Toxaphene Peak 1	5 ug/mL
							Toxaphene Peak 2	5 ug/mL
							Toxaphene Peak 3	5 ug/mL
							Toxaphene Peak 4	5 ug/mL
							Toxaphene Peak 5	5 ug/mL
.GCTOXTA_00052	03/23/17		Restek, Lot A0110607		(Purchased Reagent)		Toxaphene	5000 ug/mL
							Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
HGIM_01165	10/26/16	10/25/16	HNO3, Lot 0000129810	50 mL	HG7470TA_00012	0.5 mL	Mercury	100 ug/L
					MTHNO3_00056	1 mL	Stock Chemical	14000000 ug/L
.HG7470TA_00012	01/12/17		Inorganic Ventures, Lot J2-HG02138		(Purchased Reagent)		Mercury	10 mg/L
.MTHNO3_00056	09/16/17		Macron, Lot 141598		(Purchased Reagent)		Stock Chemical	70 %
HGIM_01166	10/26/16	10/25/16	HNO3, Lot 0000129810	50 mL	HG7470TA_00013	0.5 mL	Mercury	100 ug/L
					MTHNO3_00056	1 mL	Stock Chemical	14000000 ug/L
.HG7470TA_00013	01/12/17		Elemental scientific, Lot 1535528		(Purchased Reagent)		Mercury	10 ug/mL
.MTHNO3_00056	09/16/17		Macron, Lot 141598		(Purchased Reagent)		Stock Chemical	70 %
MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
MS8270SP1_00030	04/13/17	10/13/16	Methanol, Lot 0000147462	200 mL	MS8270TA_00084	20 mL	1,1'-Biphenyl	100 ug/mL
							1,2,4,5-Tetrachlorobenzene	100 ug/mL
							1,2,4-Trichlorobenzene	100 ug/mL
							1,2-Dichlorobenzene	100 ug/mL
							1,3-Dichlorobenzene	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,3-Dinitrobenzene	100 ug/mL
							1,4-Dichlorobenzene	100 ug/mL
							1,4-Dioxane	100 ug/mL
							1-Methylnaphthalene	100 ug/mL
							2,2'-oxybis[1-chloropropane]	100 ug/mL
							2,3,4,6-Tetrachlorophenol	100 ug/mL
							2,4,5-Trichlorophenol	100 ug/mL
							2,4,6-Trichlorophenol	100 ug/mL
							2,4-Dichlorophenol	100 ug/mL
							2,4-Dimethylphenol	100 ug/mL
							2,4-Dinitrophenol	200 ug/mL
							2,4-Dinitrotoluene	100 ug/mL
							2,6-Dichlorophenol	100 ug/mL
							2,6-Dinitrotoluene	100 ug/mL
							2-Chloronaphthalene	100 ug/mL
							2-Chlorophenol	100 ug/mL
							2-Methylnaphthalene	100 ug/mL
							2-Methylphenol	100 ug/mL
							2-Nitroaniline	100 ug/mL
							2-Nitrophenol	100 ug/mL
							3 & 4 Methylphenol	100 ug/mL
							3-Nitroaniline	100 ug/mL
							4,6-Dinitro-2-methylphenol	200 ug/mL
							4-Bromophenyl phenyl ether	100 ug/mL
							4-Chloro-3-methylphenol	100 ug/mL
							4-Chloroaniline	100 ug/mL
							4-Chlorophenyl phenyl ether	100 ug/mL
							4-Nitroaniline	100 ug/mL
							4-Nitrophenol	200 ug/mL
							Acenaphthene	100 ug/mL
							Acenaphthylene	100 ug/mL
							Acetophenone	100 ug/mL
							Aniline	100 ug/mL
							Anthracene	100 ug/mL
							Azobenzene	100 ug/mL
							Benzo[a]anthracene	100 ug/mL
							Benzo[a]pyrene	100 ug/mL
							Benzo[b]fluoranthene	100 ug/mL
							Benzo[g,h,i]perylene	100 ug/mL
							Benzo[k]fluoranthene	100 ug/mL
							Benzyl alcohol	100 ug/mL
							Bis(2-chloroethoxy)methane	100 ug/mL
							Bis(2-chloroethyl)ether	100 ug/mL
							Bis(2-ethylhexyl) phthalate	100 ug/mL
							Butyl benzyl phthalate	100 ug/mL
							Carbazole	100 ug/mL
							Chrysene	100 ug/mL
							Di-n-butyl phthalate	100 ug/mL

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Di-n-octyl phthalate	100 ug/mL
							Dibenz(a,h)anthracene	100 ug/mL
							Dibenzofuran	100 ug/mL
							Diethyl phthalate	100 ug/mL
							Dimethyl phthalate	100 ug/mL
							Diphenylamine	85.5 ug/mL
							Fluoranthene	100 ug/mL
							Fluorene	100 ug/mL
							Hexachlorobenzene	100 ug/mL
							Hexachlorobutadiene	100 ug/mL
							Hexachlorocyclopentadiene	100 ug/mL
							Hexachloroethane	100 ug/mL
							Hexadecane	100 ug/mL
							Indeno[1,2,3-cd]pyrene	100 ug/mL
							Isophorone	100 ug/mL
							n-Decane	100 ug/mL
							N-Nitrosodi-n-propylamine	100 ug/mL
							N-Nitrosodimethylamine	100 ug/mL
							N-Nitrosodiphenylamine	100 ug/mL
							n-Octadecane	100 ug/mL
							Naphthalene	100 ug/mL
							Nitrobenzene	100 ug/mL
							Pentachlorophenol	200 ug/mL
							Phenanthrene	100 ug/mL
							Phenol	100 ug/mL
							Pyrene	100 ug/mL
							Pyridine	100 ug/mL
.MS8270TA_00084	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	855 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	1000 ug/mL
MS8270SP2_00021	01/31/17	10/13/16	Methanol, Lot 0000147462	200 mL	MS8270TA_00085	10 mL	3,3'-Dichlorobenzidine	100 ug/mL
							Benzidine	100 ug/mL
.MS8270TA_00085	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
							Benzidine	2000 ug/mL
MS8270SP3_00019	04/13/17	10/13/16	Acetone, Lot 0000137485	200 mL	MS8270TA_00086	10 mL	Benzoic acid	100 ug/mL
							Indene	100 ug/mL
					MS8270TA_00087	10 mL	Atrazine	100 ug/mL
							Benzaldehyde	100 ug/mL
							Caprolactam	100 ug/mL
.MS8270TA_00086	05/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
							Indene	2000 ug/mL
.MS8270TA_00087	05/31/17		Restek, Lot A0115387		(Purchased Reagent)		Atrazine	2000 ug/mL
							Benzaldehyde	2000 ug/mL
							Caprolactam	2000 ug/mL
MS8270SU_00094	03/21/17		Restek, Lot A0117528		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	100 ug/mL
							2-Fluorobiphenyl (Surr)	100 ug/mL
							2-Fluorophenol (Surr)	100 ug/mL
							Nitrobenzene-d5 (Surr)	100 ug/mL
							Phenol-d5 (Surr)	100 ug/mL
							Terphenyl-d14 (Surr)	100 ug/mL
MSHSLICV_00007	06/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
MSHSLICV_00007	06/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MSHSLIC_00007	375 uL	2,4,6-Tribromophenol (Surr)	75 ug/mL
							2-Fluorobiphenyl (Surr)	75 ug/mL
							2-Fluorophenol (Surr)	75 ug/mL

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitrobenzene-d5 (Surr)	75 ug/mL
							Phenol-d5 (Surr)	75 ug/mL
							Terphenyl-d14 (Surr)	75 ug/mL
							1,2,4-Trichlorobenzene	75 ug/mL
							1,2-Dichlorobenzene	75 ug/mL
							1,3-Dichlorobenzene	75 ug/mL
							1,4-Dichlorobenzene	75 ug/mL
							2,2'-oxybis[1-chloropropane]	75 ug/mL
							2,4,5-Trichlorophenol	75 ug/mL
							2,4,6-Trichlorophenol	75 ug/mL
							2,4-Dichlorophenol	75 ug/mL
							2,4-Dimethylphenol	75 ug/mL
							2,4-Dinitrophenol	150 ug/mL
							2,4-Dinitrotoluene	75 ug/mL
							2,6-Dinitrotoluene	75 ug/mL
							2-Chloronaphthalene	75 ug/mL
							2-Chlorophenol	75 ug/mL
							2-Methylnaphthalene	75 ug/mL
							2-Methylphenol	75 ug/mL
							2-Nitroaniline	75 ug/mL
							2-Nitrophenol	75 ug/mL
							3 & 4 Methylphenol	75 ug/mL
							3-Nitroaniline	75 ug/mL
							4,6-Dinitro-2-methylphenol	150 ug/mL
							4-Bromophenyl phenyl ether	75 ug/mL
							4-Chloro-3-methylphenol	75 ug/mL
							4-Chloroaniline	75 ug/mL
							4-Chlorophenyl phenyl ether	75 ug/mL
							4-Nitroaniline	75 ug/mL
							4-Nitrophenol	150 ug/mL
							Acenaphthene	75 ug/mL
							Acenaphthylene	75 ug/mL
							Anthracene	75 ug/mL
							Azobenzene	75 ug/mL
							Benzo[a]anthracene	75 ug/mL
							Benzo[a]pyrene	75 ug/mL
							Benzo[b]fluoranthene	75 ug/mL
							Benzo[g,h,i]perylene	75 ug/mL
							Benzo[k]fluoranthene	75 ug/mL
							Benzyl alcohol	75 ug/mL
							Bis(2-chloroethoxy)methane	75 ug/mL
							Bis(2-chloroethyl)ether	75 ug/mL
							Bis(2-ethylhexyl) phthalate	75 ug/mL
							Butyl benzyl phthalate	75 ug/mL
							Carbazole	75 ug/mL
							Chrysene	75 ug/mL
							Di-n-butyl phthalate	75 ug/mL
							Di-n-octyl phthalate	75 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dibenz(a,h)anthracene	75 ug/mL
							Dibenzofuran	75 ug/mL
							Diethyl phthalate	75 ug/mL
							Dimethyl phthalate	75 ug/mL
							Fluoranthene	75 ug/mL
							Fluorene	75 ug/mL
							Hexachlorobenzene	75 ug/mL
							Hexachlorobutadiene	75 ug/mL
							Hexachloroethane	75 ug/mL
							Indeno[1,2,3-cd]pyrene	75 ug/mL
							Isophorone	75 ug/mL
							N-Nitrosodi-n-propylamine	75 ug/mL
							N-Nitrosodimethylamine	75 ug/mL
							N-Nitrosodiphenylamine	75 ug/mL
							Naphthalene	75 ug/mL
							Nitrobenzene	75 ug/mL
							Pentachlorophenol	150 ug/mL
							Phenanthrene	75 ug/mL
							Phenol	75 ug/mL
							Pyrene	75 ug/mL
.MSHSLIC_00007	06/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1SS_00016	2 mL	1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1SS_00016	06/30/17	Restek, Lot A0115803			(Purchased Reagent)		1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSHSLL1_00024	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	5 uL	2,4,6-Tribromophenol (Surr)	1 ug/mL
							2-Fluorobiphenyl (Surr)	1 ug/mL
							2-Fluorophenol (Surr)	1 ug/mL
							Nitrobenzene-d5 (Surr)	1 ug/mL
							Phenol-d5 (Surr)	1 ug/mL
							Terphenyl-d14 (Surr)	1 ug/mL
							1,1'-Biphenyl	1 ug/mL
							1,2,4,5-Tetrachlorobenzene	1 ug/mL
							1,2,4-Trichlorobenzene	1 ug/mL
							1,2-Dichlorobenzene	1 ug/mL
							1,3-Dichlorobenzene	1 ug/mL
							1,3-Dinitrobenzene	1 ug/mL
							1,4-Dichlorobenzene	1 ug/mL
							1-Methylnaphthalene	1 ug/mL
							2,2'-oxybis[1-chloropropane]	1 ug/mL
							2,3,4,6-Tetrachlorophenol	1 ug/mL
							2,4,5-Trichlorophenol	1 ug/mL
							2,4,6-Trichlorophenol	1 ug/mL
							2,4-Dichlorophenol	1 ug/mL
							2,4-Dimethylphenol	1 ug/mL
							2,4-Dinitrophenol	2 ug/mL
							2,4-Dinitrotoluene	1 ug/mL
							2,6-Dichlorophenol	1 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,6-Dinitrotoluene	1 ug/mL
							2-Chloronaphthalene	1 ug/mL
							2-Chlorophenol	1 ug/mL
							2-Methylnaphthalene	1 ug/mL
							2-Methylphenol	1 ug/mL
							2-Nitroaniline	1 ug/mL
							2-Nitrophenol	1 ug/mL
							3 & 4 Methylphenol	1 ug/mL
							3-Nitroaniline	1 ug/mL
							4,6-Dinitro-2-methylphenol	2 ug/mL
							4-Bromophenyl phenyl ether	1 ug/mL
							4-Chloro-3-methylphenol	1 ug/mL
							4-Chloroaniline	1 ug/mL
							4-Chlorophenyl phenyl ether	1 ug/mL
							4-Nitroaniline	1 ug/mL
							4-Nitrophenol	2 ug/mL
							Acenaphthene	1 ug/mL
							Acenaphthylene	1 ug/mL
							Aniline	1 ug/mL
							Anthracene	1 ug/mL
							Azobenzene	1 ug/mL
							Benzo[a]anthracene	1 ug/mL
							Benzo[a]pyrene	1 ug/mL
							Benzo[b]fluoranthene	1 ug/mL
							Benzo[g,h,i]perylene	1 ug/mL
							Benzo[k]fluoranthene	1 ug/mL
							Benzyl alcohol	1 ug/mL
							Bis(2-chloroethoxy)methane	1 ug/mL
							Bis(2-chloroethyl)ether	1 ug/mL
							Bis(2-ethylhexyl) phthalate	1 ug/mL
							Butyl benzyl phthalate	1 ug/mL
							Carbazole	1 ug/mL
							Chrysene	1 ug/mL
							Di-n-butyl phthalate	1 ug/mL
							Di-n-octyl phthalate	1 ug/mL
							Dibenz(a,h)anthracene	1 ug/mL
							Dibenzofuran	1 ug/mL
							Diethyl phthalate	1 ug/mL
							Dimethyl phthalate	1 ug/mL
							Fluoranthene	1 ug/mL
							Fluorene	1 ug/mL
							Hexachlorobenzene	1 ug/mL
							Hexachlorobutadiene	1 ug/mL
							Hexachlorocyclopentadiene	1 ug/mL
							Hexachloroethane	1 ug/mL
							Indeno[1,2,3-cd]pyrene	1 ug/mL
							Isophorone	1 ug/mL
							N-Nitrosodi-n-propylamine	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodimethylamine	1 ug/mL
							N-Nitrosodiphenylamine	1 ug/mL
							Naphthalene	1 ug/mL
							Nitrobenzene	1 ug/mL
							Pentachlorophenol	2 ug/mL
							Phenanthrene	1 ug/mL
							Phenol	1 ug/mL
							Pyrene	1 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSHSLL10_00005	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	800 uL	2,4,6-Tribromophenol (Surr)	160 ug/mL
							2-Fluorobiphenyl (Surr)	160 ug/mL
							2-Fluorophenol (Surr)	160 ug/mL
							Nitrobenzene-d5 (Surr)	160 ug/mL
							Phenol-d5 (Surr)	160 ug/mL
							Terphenyl-d14 (Surr)	160 ug/mL
							1,1'-Biphenyl	160 ug/mL
							1,2,4,5-Tetrachlorobenzene	160 ug/mL
							1,2,4-Trichlorobenzene	160 ug/mL
							1,2-Dichlorobenzene	160 ug/mL
							1,3-Dichlorobenzene	160 ug/mL
							1,3-Dinitrobenzene	160 ug/mL
							1,4-Dichlorobenzene	160 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1-Methylnaphthalene	160 ug/mL
							2,2'-oxybis[1-chloropropane]	160 ug/mL
							2,3,4,6-Tetrachlorophenol	160 ug/mL
							2,4,5-Trichlorophenol	160 ug/mL
							2,4,6-Trichlorophenol	160 ug/mL
							2,4-Dichlorophenol	160 ug/mL
							2,4-Dimethylphenol	160 ug/mL
							2,4-Dinitrophenol	320 ug/mL
							2,4-Dinitrotoluene	160 ug/mL
							2,6-Dichlorophenol	160 ug/mL
							2,6-Dinitrotoluene	160 ug/mL
							2-Chloronaphthalene	160 ug/mL
							2-Chlorophenol	160 ug/mL
							2-Methylnaphthalene	160 ug/mL
							2-Methylphenol	160 ug/mL
							2-Nitroaniline	160 ug/mL
							2-Nitrophenol	160 ug/mL
							3 & 4 Methylphenol	160 ug/mL
							3-Nitroaniline	160 ug/mL
							4,6-Dinitro-2-methylphenol	320 ug/mL
							4-Bromophenyl phenyl ether	160 ug/mL
							4-Chloro-3-methylphenol	160 ug/mL
							4-Chloroaniline	160 ug/mL
							4-Chlorophenyl phenyl ether	160 ug/mL
							4-Nitroaniline	160 ug/mL
							4-Nitrophenol	320 ug/mL
							Acenaphthene	160 ug/mL
							Acenaphthylene	160 ug/mL
							Aniline	160 ug/mL
							Anthracene	160 ug/mL
							Azobenzene	160 ug/mL
							Benzo[a]anthracene	160 ug/mL
							Benzo[a]pyrene	160 ug/mL
							Benzo[b]fluoranthene	160 ug/mL
							Benzo[g,h,i]perylene	160 ug/mL
							Benzo[k]fluoranthene	160 ug/mL
							Benzyl alcohol	160 ug/mL
							Bis(2-chloroethoxy)methane	160 ug/mL
							Bis(2-chloroethyl)ether	160 ug/mL
							Bis(2-ethylhexyl) phthalate	160 ug/mL
							Butyl benzyl phthalate	160 ug/mL
							Carbazole	160 ug/mL
							Chrysene	160 ug/mL
							Di-n-butyl phthalate	160 ug/mL
							Di-n-octyl phthalate	160 ug/mL
							Dibenz(a,h)anthracene	160 ug/mL
							Dibenzofuran	160 ug/mL
							Diethyl phthalate	160 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dimethyl phthalate	160 ug/mL
							Fluoranthene	160 ug/mL
							Fluorene	160 ug/mL
							Hexachlorobenzene	160 ug/mL
							Hexachlorobutadiene	160 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	160 ug/mL
							Indeno[1,2,3-cd]pyrene	160 ug/mL
							Isophorone	160 ug/mL
							N-Nitrosodi-n-propylamine	160 ug/mL
							N-Nitrosodimethylamine	160 ug/mL
							N-Nitrosodiphenylamine	160 ug/mL
							Naphthalene	160 ug/mL
							Nitrobenzene	160 ug/mL
							Pentachlorophenol	320 ug/mL
							Phenanthrene	160 ug/mL
							Phenol	160 ug/mL
							Pyrene	160 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSHSLL2_00022	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	10 uL	2,4,6-Tribromophenol (Surr)	2 ug/mL
							2-Fluorobiphenyl (Surr)	2 ug/mL
							2-Fluorophenol (Surr)	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitrobenzene-d5 (Surr)	2 ug/mL
							Phenol-d5 (Surr)	2 ug/mL
							Terphenyl-d14 (Surr)	2 ug/mL
							1,1'-Biphenyl	2 ug/mL
							1,2,4,5-Tetrachlorobenzene	2 ug/mL
							1,2,4-Trichlorobenzene	2 ug/mL
							1,2-Dichlorobenzene	2 ug/mL
							1,3-Dichlorobenzene	2 ug/mL
							1,3-Dinitrobenzene	2 ug/mL
							1,4-Dichlorobenzene	2 ug/mL
							1-Methylnaphthalene	2 ug/mL
							2,2'-oxybis[1-chloropropane]	2 ug/mL
							2,3,4,6-Tetrachlorophenol	2 ug/mL
							2,4,5-Trichlorophenol	2 ug/mL
							2,4,6-Trichlorophenol	2 ug/mL
							2,4-Dichlorophenol	2 ug/mL
							2,4-Dimethylphenol	2 ug/mL
							2,4-Dinitrophenol	4 ug/mL
							2,4-Dinitrotoluene	2 ug/mL
							2,6-Dichlorophenol	2 ug/mL
							2,6-Dinitrotoluene	2 ug/mL
							2-Chloronaphthalene	2 ug/mL
							2-Chlorophenol	2 ug/mL
							2-Methylnaphthalene	2 ug/mL
							2-Methylphenol	2 ug/mL
							2-Nitroaniline	2 ug/mL
							2-Nitrophenol	2 ug/mL
							3 & 4 Methylphenol	2 ug/mL
							3-Nitroaniline	2 ug/mL
							4,6-Dinitro-2-methylphenol	4 ug/mL
							4-Bromophenyl phenyl ether	2 ug/mL
							4-Chloro-3-methylphenol	2 ug/mL
							4-Chloroaniline	2 ug/mL
							4-Chlorophenyl phenyl ether	2 ug/mL
							4-Nitroaniline	2 ug/mL
							4-Nitrophenol	4 ug/mL
							Acenaphthene	2 ug/mL
							Acenaphthylene	2 ug/mL
							Aniline	2 ug/mL
							Anthracene	2 ug/mL
							Azobenzene	2 ug/mL
							Benzo[a]anthracene	2 ug/mL
							Benzo[a]pyrene	2 ug/mL
							Benzo[b]fluoranthene	2 ug/mL
							Benzo[g,h,i]perylene	2 ug/mL
							Benzo[k]fluoranthene	2 ug/mL
							Benzyl alcohol	2 ug/mL
							Bis(2-chloroethoxy)methane	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis(2-chloroethyl)ether	2 ug/mL
							Bis(2-ethylhexyl) phthalate	2 ug/mL
							Butyl benzyl phthalate	2 ug/mL
							Carbazole	2 ug/mL
							Chrysene	2 ug/mL
							Di-n-butyl phthalate	2 ug/mL
							Di-n-octyl phthalate	2 ug/mL
							Dibenz(a,h)anthracene	2 ug/mL
							Dibenzofuran	2 ug/mL
							Diethyl phthalate	2 ug/mL
							Dimethyl phthalate	2 ug/mL
							Fluoranthene	2 ug/mL
							Fluorene	2 ug/mL
							Hexachlorobenzene	2 ug/mL
							Hexachlorobutadiene	2 ug/mL
							Hexachlorocyclopentadiene	2 ug/mL
							Hexachloroethane	2 ug/mL
							Indeno[1,2,3-cd]pyrene	2 ug/mL
							Isophorone	2 ug/mL
							N-Nitrosodi-n-propylamine	2 ug/mL
							N-Nitrosodimethylamine	2 ug/mL
							N-Nitrosodiphenylamine	2 ug/mL
							Naphthalene	2 ug/mL
							Nitrobenzene	2 ug/mL
							Pentachlorophenol	4 ug/mL
							Phenanthrene	2 ug/mL
							Phenol	2 ug/mL
							Pyrene	2 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
MSHSLL3_00022	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	25 uL	2,4,6-Tribromophenol (Surr)	5 ug/mL
							2-Fluorobiphenyl (Surr)	5 ug/mL
							2-Fluorophenol (Surr)	5 ug/mL
							Nitrobenzene-d5 (Surr)	5 ug/mL
							Phenol-d5 (Surr)	5 ug/mL
							Terphenyl-d14 (Surr)	5 ug/mL
							1,1'-Biphenyl	5 ug/mL
							1,2,4,5-Tetrachlorobenzene	5 ug/mL
							1,2,4-Trichlorobenzene	5 ug/mL
							1,2-Dichlorobenzene	5 ug/mL
							1,3-Dichlorobenzene	5 ug/mL
							1,3-Dinitrobenzene	5 ug/mL
							1,4-Dichlorobenzene	5 ug/mL
							1-Methylnaphthalene	5 ug/mL
							2,2'-oxybis[1-chloropropane]	5 ug/mL
							2,3,4,6-Tetrachlorophenol	5 ug/mL
							2,4,5-Trichlorophenol	5 ug/mL
							2,4,6-Trichlorophenol	5 ug/mL
							2,4-Dichlorophenol	5 ug/mL
							2,4-Dimethylphenol	5 ug/mL
							2,4-Dinitrophenol	10 ug/mL
							2,4-Dinitrotoluene	5 ug/mL
							2,6-Dichlorophenol	5 ug/mL
							2,6-Dinitrotoluene	5 ug/mL
							2-Chloronaphthalene	5 ug/mL
							2-Chlorophenol	5 ug/mL
							2-Methylnaphthalene	5 ug/mL
							2-Methylphenol	5 ug/mL
							2-Nitroaniline	5 ug/mL
							2-Nitrophenol	5 ug/mL
							3 & 4 Methylphenol	5 ug/mL
							3-Nitroaniline	5 ug/mL
							4,6-Dinitro-2-methylphenol	10 ug/mL
							4-Bromophenyl phenyl ether	5 ug/mL
							4-Chloro-3-methylphenol	5 ug/mL
							4-Chloroaniline	5 ug/mL
							4-Chlorophenyl phenyl ether	5 ug/mL
							4-Nitroaniline	5 ug/mL
							4-Nitrophenol	10 ug/mL
							Acenaphthene	5 ug/mL
							Acenaphthylene	5 ug/mL
							Aniline	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Anthracene	5 ug/mL
							Azobenzene	5 ug/mL
							Benzo[a]anthracene	5 ug/mL
							Benzo[a]pyrene	5 ug/mL
							Benzo[b]fluoranthene	5 ug/mL
							Benzo[g,h,i]perylene	5 ug/mL
							Benzo[k]fluoranthene	5 ug/mL
							Benzyl alcohol	5 ug/mL
							Bis(2-chloroethoxy)methane	5 ug/mL
							Bis(2-chloroethyl)ether	5 ug/mL
							Bis(2-ethylhexyl) phthalate	5 ug/mL
							Butyl benzyl phthalate	5 ug/mL
							Carbazole	5 ug/mL
							Chrysene	5 ug/mL
							Di-n-butyl phthalate	5 ug/mL
							Di-n-octyl phthalate	5 ug/mL
							Dibenz(a,h)anthracene	5 ug/mL
							Dibenzofuran	5 ug/mL
							Diethyl phthalate	5 ug/mL
							Dimethyl phthalate	5 ug/mL
							Fluoranthene	5 ug/mL
							Fluorene	5 ug/mL
							Hexachlorobenzene	5 ug/mL
							Hexachlorobutadiene	5 ug/mL
							Hexachlorocyclopentadiene	5 ug/mL
							Hexachloroethane	5 ug/mL
							Indeno[1,2,3-cd]pyrene	5 ug/mL
							Isophorone	5 ug/mL
							N-Nitrosodi-n-propylamine	5 ug/mL
							N-Nitrosodimethylamine	5 ug/mL
							N-Nitrosodiphenylamine	5 ug/mL
							Naphthalene	5 ug/mL
							Nitrobenzene	5 ug/mL
							Pentachlorophenol	10 ug/mL
							Phenanthrene	5 ug/mL
							Phenol	5 ug/mL
							Pyrene	5 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSHSLL4_00022	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	50 uL	2,4,6-Tribromophenol (Surr)	10 ug/mL
							2-Fluorobiphenyl (Surr)	10 ug/mL
							2-Fluorophenol (Surr)	10 ug/mL
							Nitrobenzene-d5 (Surr)	10 ug/mL
							Phenol-d5 (Surr)	10 ug/mL
							Terphenyl-d14 (Surr)	10 ug/mL
							1,1'-Biphenyl	10 ug/mL
							1,2,4,5-Tetrachlorobenzene	10 ug/mL
							1,2,4-Trichlorobenzene	10 ug/mL
							1,2-Dichlorobenzene	10 ug/mL
							1,3-Dichlorobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							1,4-Dichlorobenzene	10 ug/mL
							1-Methylnaphthalene	10 ug/mL
							2,2'-oxybis[1-chloropropane]	10 ug/mL
							2,3,4,6-Tetrachlorophenol	10 ug/mL
							2,4,5-Trichlorophenol	10 ug/mL
							2,4,6-Trichlorophenol	10 ug/mL
							2,4-Dichlorophenol	10 ug/mL
							2,4-Dimethylphenol	10 ug/mL
							2,4-Dinitrophenol	20 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							2,6-Dichlorophenol	10 ug/mL
							2,6-Dinitrotoluene	10 ug/mL
							2-Chloronaphthalene	10 ug/mL
							2-Chlorophenol	10 ug/mL
							2-Methylnaphthalene	10 ug/mL
							2-Methylphenol	10 ug/mL
							2-Nitroaniline	10 ug/mL
							2-Nitrophenol	10 ug/mL
							3 & 4 Methylphenol	10 ug/mL
							3-Nitroaniline	10 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4,6-Dinitro-2-methylphenol	20 ug/mL
							4-Bromophenyl phenyl ether	10 ug/mL
							4-Chloro-3-methylphenol	10 ug/mL
							4-Chloroaniline	10 ug/mL
							4-Chlorophenyl phenyl ether	10 ug/mL
							4-Nitroaniline	10 ug/mL
							4-Nitrophenol	20 ug/mL
							Acenaphthene	10 ug/mL
							Acenaphthylene	10 ug/mL
							Aniline	10 ug/mL
							Anthracene	10 ug/mL
							Azobenzene	10 ug/mL
							Benzo[a]anthracene	10 ug/mL
							Benzo[a]pyrene	10 ug/mL
							Benzo[b]fluoranthene	10 ug/mL
							Benzo[g,h,i]perylene	10 ug/mL
							Benzo[k]fluoranthene	10 ug/mL
							Benzyl alcohol	10 ug/mL
							Bis(2-chloroethoxy)methane	10 ug/mL
							Bis(2-chloroethyl)ether	10 ug/mL
							Bis(2-ethylhexyl) phthalate	10 ug/mL
							Butyl benzyl phthalate	10 ug/mL
							Carbazole	10 ug/mL
							Chrysene	10 ug/mL
							Di-n-butyl phthalate	10 ug/mL
							Di-n-octyl phthalate	10 ug/mL
							Dibenz(a,h)anthracene	10 ug/mL
							Dibenzofuran	10 ug/mL
							Diethyl phthalate	10 ug/mL
							Dimethyl phthalate	10 ug/mL
							Fluoranthene	10 ug/mL
							Fluorene	10 ug/mL
							Hexachlorobenzene	10 ug/mL
							Hexachlorobutadiene	10 ug/mL
							Hexachlorocyclopentadiene	10 ug/mL
							Hexachloroethane	10 ug/mL
							Indeno[1,2,3-cd]pyrene	10 ug/mL
							Isophorone	10 ug/mL
							N-Nitrosodi-n-propylamine	10 ug/mL
							N-Nitrosodimethylamine	10 ug/mL
							N-Nitrosodiphenylamine	10 ug/mL
							Naphthalene	10 ug/mL
							Nitrobenzene	10 ug/mL
							Pentachlorophenol	20 ug/mL
							Phenanthrene	10 ug/mL
							Phenol	10 ug/mL
							Pyrene	10 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSHSLL5_00022	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	100 uL	2,4,6-Tribromophenol (Surr)	20 ug/mL
							2-Fluorobiphenyl (Surr)	20 ug/mL
							2-Fluorophenol (Surr)	20 ug/mL
							Nitrobenzene-d5 (Surr)	20 ug/mL
							Phenol-d5 (Surr)	20 ug/mL
							Terphenyl-d14 (Surr)	20 ug/mL
							1,1'-Biphenyl	20 ug/mL
							1,2,4,5-Tetrachlorobenzene	20 ug/mL
							1,2,4-Trichlorobenzene	20 ug/mL
							1,2-Dichlorobenzene	20 ug/mL
							1,3-Dichlorobenzene	20 ug/mL
							1,3-Dinitrobenzene	20 ug/mL
							1,4-Dichlorobenzene	20 ug/mL
							1-Methylnaphthalene	20 ug/mL
							2,2'-oxybis[1-chloropropane]	20 ug/mL
							2,3,4,6-Tetrachlorophenol	20 ug/mL
							2,4,5-Trichlorophenol	20 ug/mL
							2,4,6-Trichlorophenol	20 ug/mL
							2,4-Dichlorophenol	20 ug/mL
							2,4-Dimethylphenol	20 ug/mL
							2,4-Dinitrophenol	40 ug/mL
							2,4-Dinitrotoluene	20 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,6-Dichlorophenol	20 ug/mL
							2,6-Dinitrotoluene	20 ug/mL
							2-Chloronaphthalene	20 ug/mL
							2-Chlorophenol	20 ug/mL
							2-Methylnaphthalene	20 ug/mL
							2-Methylphenol	20 ug/mL
							2-Nitroaniline	20 ug/mL
							2-Nitrophenol	20 ug/mL
							3 & 4 Methylphenol	20 ug/mL
							3-Nitroaniline	20 ug/mL
							4,6-Dinitro-2-methylphenol	40 ug/mL
							4-Bromophenyl phenyl ether	20 ug/mL
							4-Chloro-3-methylphenol	20 ug/mL
							4-Chloroaniline	20 ug/mL
							4-Chlorophenyl phenyl ether	20 ug/mL
							4-Nitroaniline	20 ug/mL
							4-Nitrophenol	40 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Aniline	20 ug/mL
							Anthracene	20 ug/mL
							Azobenzene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Benzyl alcohol	20 ug/mL
							Bis(2-chloroethoxy)methane	20 ug/mL
							Bis(2-chloroethyl)ether	20 ug/mL
							Bis(2-ethylhexyl) phthalate	20 ug/mL
							Butyl benzyl phthalate	20 ug/mL
							Carbazole	20 ug/mL
							Chrysene	20 ug/mL
							Di-n-butyl phthalate	20 ug/mL
							Di-n-octyl phthalate	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Dibenzofuran	20 ug/mL
							Diethyl phthalate	20 ug/mL
							Dimethyl phthalate	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Hexachlorobenzene	20 ug/mL
							Hexachlorobutadiene	20 ug/mL
							Hexachlorocyclopentadiene	20 ug/mL
							Hexachloroethane	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Isophorone	20 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodi-n-propylamine	20 ug/mL
							N-Nitrosodimethylamine	20 ug/mL
							N-Nitrosodiphenylamine	20 ug/mL
							Naphthalene	20 ug/mL
							Nitrobenzene	20 ug/mL
							Pentachlorophenol	40 ug/mL
							Phenanthrene	20 ug/mL
							Phenol	20 ug/mL
							Pyrene	20 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17	Restek, Lot A0114832			(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSHSLL6_00022	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	250 uL	2,4,6-Tribromophenol (Surr)	50 ug/mL
							2-Fluorobiphenyl (Surr)	50 ug/mL
							2-Fluorophenol (Surr)	50 ug/mL
							Nitrobenzene-d5 (Surr)	50 ug/mL
							Phenol-d5 (Surr)	50 ug/mL
							Terphenyl-d14 (Surr)	50 ug/mL
							1,1'-Biphenyl	50 ug/mL
							1,2,4,5-Tetrachlorobenzene	50 ug/mL
							1,2,4-Trichlorobenzene	50 ug/mL
							1,2-Dichlorobenzene	50 ug/mL
							1,3-Dichlorobenzene	50 ug/mL
							1,3-Dinitrobenzene	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,4-Dichlorobenzene	50 ug/mL
							1-Methylnaphthalene	50 ug/mL
							2,2'-oxybis[1-chloropropane]	50 ug/mL
							2,3,4,6-Tetrachlorophenol	50 ug/mL
							2,4,5-Trichlorophenol	50 ug/mL
							2,4,6-Trichlorophenol	50 ug/mL
							2,4-Dichlorophenol	50 ug/mL
							2,4-Dimethylphenol	50 ug/mL
							2,4-Dinitrophenol	100 ug/mL
							2,4-Dinitrotoluene	50 ug/mL
							2,6-Dichlorophenol	50 ug/mL
							2,6-Dinitrotoluene	50 ug/mL
							2-Chloronaphthalene	50 ug/mL
							2-Chlorophenol	50 ug/mL
							2-Methylnaphthalene	50 ug/mL
							2-Methylphenol	50 ug/mL
							2-Nitroaniline	50 ug/mL
							2-Nitrophenol	50 ug/mL
							3 & 4 Methylphenol	50 ug/mL
							3-Nitroaniline	50 ug/mL
							4,6-Dinitro-2-methylphenol	100 ug/mL
							4-Bromophenyl phenyl ether	50 ug/mL
							4-Chloro-3-methylphenol	50 ug/mL
							4-Chloroaniline	50 ug/mL
							4-Chlorophenyl phenyl ether	50 ug/mL
							4-Nitroaniline	50 ug/mL
							4-Nitrophenol	100 ug/mL
							Acenaphthene	50 ug/mL
							Acenaphthylene	50 ug/mL
							Aniline	50 ug/mL
							Anthracene	50 ug/mL
							Azobenzene	50 ug/mL
							Benzo[a]anthracene	50 ug/mL
							Benzo[a]pyrene	50 ug/mL
							Benzo[b]fluoranthene	50 ug/mL
							Benzo[g,h,i]perylene	50 ug/mL
							Benzo[k]fluoranthene	50 ug/mL
							Benzyl alcohol	50 ug/mL
							Bis(2-chloroethoxy)methane	50 ug/mL
							Bis(2-chloroethyl)ether	50 ug/mL
							Bis(2-ethylhexyl) phthalate	50 ug/mL
							Butyl benzyl phthalate	50 ug/mL
							Carbazole	50 ug/mL
							Chrysene	50 ug/mL
							Di-n-butyl phthalate	50 ug/mL
							Di-n-octyl phthalate	50 ug/mL
							Dibenz(a,h)anthracene	50 ug/mL
							Dibenzofuran	50 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Diethyl phthalate	50 ug/mL
							Dimethyl phthalate	50 ug/mL
							Fluoranthene	50 ug/mL
							Fluorene	50 ug/mL
							Hexachlorobenzene	50 ug/mL
							Hexachlorobutadiene	50 ug/mL
							Hexachlorocyclopentadiene	50 ug/mL
							Hexachloroethane	50 ug/mL
							Indeno[1,2,3-cd]pyrene	50 ug/mL
							Isophorone	50 ug/mL
							N-Nitrosodi-n-propylamine	50 ug/mL
							N-Nitrosodimethylamine	50 ug/mL
							N-Nitrosodiphenylamine	50 ug/mL
							Naphthalene	50 ug/mL
							Nitrobenzene	50 ug/mL
							Pentachlorophenol	100 ug/mL
							Phenanthrene	50 ug/mL
							Phenol	50 ug/mL
							Pyrene	50 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSHSLL7_00022	04/30/17	09/24/16	MeCl2, Lot 0000148005	5 mL	MS8270IS_00014	100 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	1875 uL	2,4,6-Tribromophenol (Surr)	75 ug/mL
							2-Fluorobiphenyl (Surr)	75 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Fluorophenol (Surr)	75 ug/mL
							Nitrobenzene-d5 (Surr)	75 ug/mL
							Phenol-d5 (Surr)	75 ug/mL
							Terphenyl-d14 (Surr)	75 ug/mL
							1,1'-Biphenyl	75 ug/mL
							1,2,4,5-Tetrachlorobenzene	75 ug/mL
							1,2,4-Trichlorobenzene	75 ug/mL
							1,2-Dichlorobenzene	75 ug/mL
							1,3-Dichlorobenzene	75 ug/mL
							1,3-Dinitrobenzene	75 ug/mL
							1,4-Dichlorobenzene	75 ug/mL
							1-Methylnaphthalene	75 ug/mL
							2,2'-oxybis[1-chloropropane]	75 ug/mL
							2,3,4,6-Tetrachlorophenol	75 ug/mL
							2,4,5-Trichlorophenol	75 ug/mL
							2,4,6-Trichlorophenol	75 ug/mL
							2,4-Dichlorophenol	75 ug/mL
							2,4-Dimethylphenol	75 ug/mL
							2,4-Dinitrophenol	150 ug/mL
							2,4-Dinitrotoluene	75 ug/mL
							2,6-Dichlorophenol	75 ug/mL
							2,6-Dinitrotoluene	75 ug/mL
							2-Chloronaphthalene	75 ug/mL
							2-Chlorophenol	75 ug/mL
							2-Methylnaphthalene	75 ug/mL
							2-Methylphenol	75 ug/mL
							2-Nitroaniline	75 ug/mL
							2-Nitrophenol	75 ug/mL
							3 & 4 Methylphenol	75 ug/mL
							3-Nitroaniline	75 ug/mL
							4,6-Dinitro-2-methylphenol	150 ug/mL
							4-Bromophenyl phenyl ether	75 ug/mL
							4-Chloro-3-methylphenol	75 ug/mL
							4-Chloroaniline	75 ug/mL
							4-Chlorophenyl phenyl ether	75 ug/mL
							4-Nitroaniline	75 ug/mL
							4-Nitrophenol	150 ug/mL
							Acenaphthene	75 ug/mL
							Acenaphthylene	75 ug/mL
							Aniline	75 ug/mL
							Anthracene	75 ug/mL
							Azobenzene	75 ug/mL
							Benzo[a]anthracene	75 ug/mL
							Benzo[a]pyrene	75 ug/mL
							Benzo[b]fluoranthene	75 ug/mL
							Benzo[g,h,i]perylene	75 ug/mL
							Benzo[k]fluoranthene	75 ug/mL
							Benzyl alcohol	75 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis(2-chloroethoxy)methane	75 ug/mL
							Bis(2-chloroethyl)ether	75 ug/mL
							Bis(2-ethylhexyl) phthalate	75 ug/mL
							Butyl benzyl phthalate	75 ug/mL
							Carbazole	75 ug/mL
							Chrysene	75 ug/mL
							Di-n-butyl phthalate	75 ug/mL
							Di-n-octyl phthalate	75 ug/mL
							Dibenz(a,h)anthracene	75 ug/mL
							Dibenzofuran	75 ug/mL
							Diethyl phthalate	75 ug/mL
							Dimethyl phthalate	75 ug/mL
							Fluoranthene	75 ug/mL
							Fluorene	75 ug/mL
							Hexachlorobenzene	75 ug/mL
							Hexachlorobutadiene	75 ug/mL
							Hexachlorocyclopentadiene	75 ug/mL
							Hexachloroethane	75 ug/mL
							Indeno[1,2,3-cd]pyrene	75 ug/mL
							Isophorone	75 ug/mL
							N-Nitrosodi-n-propylamine	75 ug/mL
							N-Nitrosodimethylamine	75 ug/mL
							N-Nitrosodiphenylamine	75 ug/mL
							Naphthalene	75 ug/mL
							Nitrobenzene	75 ug/mL
							Pentachlorophenol	150 ug/mL
							Phenanthrene	75 ug/mL
							Phenol	75 ug/mL
							Pyrene	75 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Pyrene	1000 ug/mL
MSHSLL8_00022	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	500 uL	2,4,6-Tribromophenol (Surr)	100 ug/mL
							2-Fluorobiphenyl (Surr)	100 ug/mL
							2-Fluorophenol (Surr)	100 ug/mL
							Nitrobenzene-d5 (Surr)	100 ug/mL
							Phenol-d5 (Surr)	100 ug/mL
							Terphenyl-d14 (Surr)	100 ug/mL
							1,1'-Biphenyl	100 ug/mL
							1,2,4,5-Tetrachlorobenzene	100 ug/mL
							1,2,4-Trichlorobenzene	100 ug/mL
							1,2-Dichlorobenzene	100 ug/mL
							1,3-Dichlorobenzene	100 ug/mL
							1,3-Dinitrobenzene	100 ug/mL
							1,4-Dichlorobenzene	100 ug/mL
							1-Methylnaphthalene	100 ug/mL
							2,2'-oxybis[1-chloropropane]	100 ug/mL
							2,3,4,6-Tetrachlorophenol	100 ug/mL
							2,4,5-Trichlorophenol	100 ug/mL
							2,4,6-Trichlorophenol	100 ug/mL
							2,4-Dichlorophenol	100 ug/mL
							2,4-Dimethylphenol	100 ug/mL
							2,4-Dinitrophenol	200 ug/mL
							2,4-Dinitrotoluene	100 ug/mL
							2,6-Dichlorophenol	100 ug/mL
							2,6-Dinitrotoluene	100 ug/mL
							2-Chloronaphthalene	100 ug/mL
							2-Chlorophenol	100 ug/mL
							2-Methylnaphthalene	100 ug/mL
							2-Methylphenol	100 ug/mL
							2-Nitroaniline	100 ug/mL
							2-Nitrophenol	100 ug/mL
							3 & 4 Methylphenol	100 ug/mL
							3-Nitroaniline	100 ug/mL
							4,6-Dinitro-2-methylphenol	200 ug/mL
							4-Bromophenyl phenyl ether	100 ug/mL
							4-Chloro-3-methylphenol	100 ug/mL
							4-Chloroaniline	100 ug/mL
							4-Chlorophenyl phenyl ether	100 ug/mL
							4-Nitroaniline	100 ug/mL
							4-Nitrophenol	200 ug/mL
							Acenaphthene	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthylene	100 ug/mL
							Aniline	100 ug/mL
							Anthracene	100 ug/mL
							Azobenzene	100 ug/mL
							Benzo[a]anthracene	100 ug/mL
							Benzo[a]pyrene	100 ug/mL
							Benzo[b]fluoranthene	100 ug/mL
							Benzo[g,h,i]perylene	100 ug/mL
							Benzo[k]fluoranthene	100 ug/mL
							Benzyl alcohol	100 ug/mL
							Bis(2-chloroethoxy)methane	100 ug/mL
							Bis(2-chloroethyl)ether	100 ug/mL
							Bis(2-ethylhexyl) phthalate	100 ug/mL
							Butyl benzyl phthalate	100 ug/mL
							Carbazole	100 ug/mL
							Chrysene	100 ug/mL
							Di-n-butyl phthalate	100 ug/mL
							Di-n-octyl phthalate	100 ug/mL
							Dibenz(a,h)anthracene	100 ug/mL
							Dibenzofuran	100 ug/mL
							Diethyl phthalate	100 ug/mL
							Dimethyl phthalate	100 ug/mL
							Fluoranthene	100 ug/mL
							Fluorene	100 ug/mL
							Hexachlorobenzene	100 ug/mL
							Hexachlorobutadiene	100 ug/mL
							Hexachlorocyclopentadiene	100 ug/mL
							Hexachloroethane	100 ug/mL
							Indeno[1,2,3-cd]pyrene	100 ug/mL
							Isophorone	100 ug/mL
							N-Nitrosodi-n-propylamine	100 ug/mL
							N-Nitrosodimethylamine	100 ug/mL
							N-Nitrosodiphenylamine	100 ug/mL
							Naphthalene	100 ug/mL
							Nitrobenzene	100 ug/mL
							Pentachlorophenol	200 ug/mL
							Phenanthrene	100 ug/mL
							Phenol	100 ug/mL
							Pyrene	100 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSHSLL9_00009	04/30/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSHSLTA_00018	600 uL	2,4,6-Tribromophenol (Surr)	120 ug/mL
							2-Fluorobiphenyl (Surr)	120 ug/mL
							2-Fluorophenol (Surr)	120 ug/mL
							Nitrobenzene-d5 (Surr)	120 ug/mL
							Phenol-d5 (Surr)	120 ug/mL
							Terphenyl-d14 (Surr)	120 ug/mL
							1,1'-Biphenyl	120 ug/mL
							1,2,4,5-Tetrachlorobenzene	120 ug/mL
							1,2,4-Trichlorobenzene	120 ug/mL
							1,2-Dichlorobenzene	120 ug/mL
							1,3-Dichlorobenzene	120 ug/mL
							1,3-Dinitrobenzene	120 ug/mL
							1,4-Dichlorobenzene	120 ug/mL
							1-Methylnaphthalene	120 ug/mL
							2,2'-oxybis[1-chloropropane]	120 ug/mL
							2,3,4,6-Tetrachlorophenol	120 ug/mL
							2,4,5-Trichlorophenol	120 ug/mL
							2,4,6-Trichlorophenol	120 ug/mL
							2,4-Dichlorophenol	120 ug/mL
							2,4-Dimethylphenol	120 ug/mL
							2,4-Dinitrophenol	240 ug/mL
							2,4-Dinitrotoluene	120 ug/mL
							2,6-Dichlorophenol	120 ug/mL
							2,6-Dinitrotoluene	120 ug/mL
							2-Chloronaphthalene	120 ug/mL
							2-Chlorophenol	120 ug/mL
							2-Methylnaphthalene	120 ug/mL
							2-Methylphenol	120 ug/mL
							2-Nitroaniline	120 ug/mL
							2-Nitrophenol	120 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3 & 4 Methylphenol	120 ug/mL
							3-Nitroaniline	120 ug/mL
							4,6-Dinitro-2-methylphenol	240 ug/mL
							4-Bromophenyl phenyl ether	120 ug/mL
							4-Chloro-3-methylphenol	120 ug/mL
							4-Chloroaniline	120 ug/mL
							4-Chlorophenyl phenyl ether	120 ug/mL
							4-Nitroaniline	120 ug/mL
							4-Nitrophenol	240 ug/mL
							Acenaphthene	120 ug/mL
							Acenaphthylene	120 ug/mL
							Aniline	120 ug/mL
							Anthracene	120 ug/mL
							Azobenzene	120 ug/mL
							Benzo[a]anthracene	120 ug/mL
							Benzo[a]pyrene	120 ug/mL
							Benzo[b]fluoranthene	120 ug/mL
							Benzo[g,h,i]perylene	120 ug/mL
							Benzo[k]fluoranthene	120 ug/mL
							Benzyl alcohol	120 ug/mL
							Bis(2-chloroethoxy)methane	120 ug/mL
							Bis(2-chloroethyl)ether	120 ug/mL
							Bis(2-ethylhexyl) phthalate	120 ug/mL
							Butyl benzyl phthalate	120 ug/mL
							Carbazole	120 ug/mL
							Chrysene	120 ug/mL
							Di-n-butyl phthalate	120 ug/mL
							Di-n-octyl phthalate	120 ug/mL
							Dibenz(a,h)anthracene	120 ug/mL
							Dibenzofuran	120 ug/mL
							Diethyl phthalate	120 ug/mL
							Dimethyl phthalate	120 ug/mL
							Fluoranthene	120 ug/mL
							Fluorene	120 ug/mL
							Hexachlorobenzene	120 ug/mL
							Hexachlorobutadiene	120 ug/mL
							Hexachlorocyclopentadiene	120 ug/mL
							Hexachloroethane	120 ug/mL
							Indeno[1,2,3-cd]pyrene	120 ug/mL
							Isophorone	120 ug/mL
							N-Nitrosodi-n-propylamine	120 ug/mL
							N-Nitrosodimethylamine	120 ug/mL
							N-Nitrosodiphenylamine	120 ug/mL
							Naphthalene	120 ug/mL
							Nitrobenzene	120 ug/mL
							Pentachlorophenol	240 ug/mL
							Phenanthrene	120 ug/mL
							Phenol	120 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Pyrene	120 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSHSLTA_00018	04/30/17	09/22/16	MeCl2, Lot 0000148005	10 mL	MS8270SU_00096	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl (Surr)	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5 (Surr)	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14 (Surr)	200 ug/mL
					MSL1S1PS_00015	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
..MS8270SU_00096	05/31/19		Restek, Lot A0103615		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl (Surr)	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5 (Surr)	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14 (Surr)	5000 ug/mL
..MSL1S1PS_00015	04/30/17		Restek, Lot A0114832		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
MSODDICV_00008	10/31/16	09/24/16	MeCl2, Lot 0000148005	1 mL	MSODDIC_00007	375 uL	Benzoic acid	150 ug/mL
							3,3'-Dichlorobenzidine	75 ug/mL
.MSODDIC_00007	10/31/16	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10SS_00005	2 mL	Benzoic acid	400 ug/mL
					MSL1S9SS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10SS_00005	10/31/16		Restek, Lot A0110820		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9SS_00004	05/31/17		Restek, Lot A0115364		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL1_00008	01/31/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSODDTA_00006	10 uL	Benzoic acid	4 ug/mL
							3,3'-Dichlorobenzidine	2 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9PS_00004	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL2_00008	01/31/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSODDTA_00006	25 uL	Benzoic acid	10 ug/mL
							3,3'-Dichlorobenzidine	5 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9PS_00004	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL3_00008	01/31/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSODDTA_00006	50 uL	Benzoic acid	20 ug/mL
							3,3'-Dichlorobenzidine	10 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9PS_00004	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL4_00009	01/31/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSODDTA_00006	100 uL	Benzoic acid	40 ug/mL
							3,3'-Dichlorobenzidine	20 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9PS_00004	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL5_00008	01/31/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSODDTA_00006	250 uL	Benzoic acid	100 ug/mL
							3,3'-Dichlorobenzidine	50 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9PS_00004	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL6_00008	01/31/17	09/24/16	MeCl2, Lot 0000148005	5 mL	MS8270IS_00014	100 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSODDTA_00006	1875 uL	Benzoic acid	150 ug/mL
							3,3'-Dichlorobenzidine	75 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9PS_00004	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL7_00008	01/31/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MSODDTA_00006	500 uL	Benzoic acid	200 ug/mL
							3,3'-Dichlorobenzidine	100 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9PS_00004	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL8_00008	01/31/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSODDTA_00006	600 uL	Benzoic acid	240 ug/mL
							3,3'-Dichlorobenzidine	120 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MSL1S9PS_00004	01/31/17		Restek, Lot A0112567		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MSODDL9_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	1 mL	MS8270IS_00014	20 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
					MSODDTA_00006	800 uL	Benzoic acid	320 ug/mL
							3,3'-Dichlorobenzidine	160 ug/mL
.MS8270IS_00014	09/24/17		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MSODDTA_00006	01/31/17	09/24/16	MeCl2, Lot 0000148005	10 mL	MSL1S10PS_00004	2 mL	Benzoic acid	400 ug/mL
					MSL1S9PS_00004	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
..MSL1S10PS_00004	01/31/17		Restek, Lot A0115596		(Purchased Reagent)		Benzoic acid	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MSL1S9PS_00004	01/31/17	Restek, Lot A0112567			(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
MT6020CCV_00147	12/16/16	10/19/16	MIllipore Water, Lot ----	1 L	MTCCV_00012	10 mL	Arsenic	100 ug/L
							Barium	100 ug/L
							Cadmium	100 ug/L
							Chromium	100 ug/L
							Selenium	100 ug/L
					MTCCV_00013	10 mL	Lead	100 ug/L
							Silver	50 ug/L
.MTCCV_00012	12/16/16	High Purity Standards, Lot 1534836			(Purchased Reagent)		Arsenic	10 mg/L
							Barium	10 mg/L
							Cadmium	10 mg/L
							Chromium	10 mg/L
							Selenium	10 mg/L
.MTCCV_00013	12/16/16	High Purity Standards, Lot 1534837			(Purchased Reagent)		Lead	10 mg/L
							Silver	5 mg/L
MT6020ICSA_00026	01/14/17	10/19/16	HNO3/HCL, Lot ----	100 mL	MTICSAB_00014	10 mL	Al	100000 ug/L
							Ca	100000 ug/L
							Fe	100000 ug/L
							K	100000 ug/L
							Mg	100000 ug/L
							Mo	2000 ug/L
							Na	100000 ug/L
							P	100000 ug/L
							Ti	2000 ug/L
.MTICSAB_00014	01/14/17	Inorganic Ventures, Lot J2-MEB616027			(Purchased Reagent)		Al	1000 mg/L
							Ca	1000 mg/L
							Fe	1000 mg/L
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
							P	1000 mg/L
							Ti	20 mg/L
MT6020ICSAB_00046	12/16/16	10/19/16	HNO3/HCL, Lot ----	100 mL	MTCCV_00012	1 mL	Al	100000 ug/L
							Arsenic	100 ug/L
							B	200 ug/L
							Barium	100 ug/L
							Be	100 ug/L
							Ca	100000 ug/L
							Cadmium	100 ug/L
							Chromium	100 ug/L
							Co	100 ug/L
							Cu	100 ug/L
							K	100000 ug/L
							Li	100 ug/L
							Mg	100000 ug/L

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mn	100 ug/L
							Na	100000 ug/L
							Ni	100 ug/L
							Selenium	100 ug/L
							Sr	100 ug/L
							U	100 ug/L
							V	100 ug/L
							Zn	100 ug/L
					MTCCV_00013	1 mL	Fe	100000 ug/L
							Lead	100 ug/L
							Mo	2100 ug/L
							P	100000 ug/L
							Sb	50 ug/L
							Silver	50 ug/L
							Sn	100 ug/L
							Ti	2100 ug/L
							Tl	50 ug/L
					MTICSAB_00014	9.5 mL	Al	100000 ug/L
							Ca	100000 ug/L
							Fe	100000 ug/L
							K	100000 ug/L
							Mg	100000 ug/L
							Mo	2100 ug/L
							Na	100000 ug/L
							P	100000 ug/L
							Ti	2100 ug/L
.MTCCV_00012	12/16/16	High Purity Standards, Lot 1534836			(Purchased Reagent)		Al	500 mg/L
							Arsenic	10 mg/L
							B	20 mg/L
							Barium	10 mg/L
							Be	10 mg/L
							Ca	500 mg/L
							Cadmium	10 mg/L
							Chromium	10 mg/L
							Co	10 mg/L
							Cu	10 mg/L
							K	500 mg/L
							Li	10 mg/L
							Mg	500 mg/L
							Mn	10 mg/L
							Na	500 mg/L
							Ni	10 mg/L
							Selenium	10 mg/L
							Sr	10 mg/L
							U	10 mg/L
							V	10 mg/L
							Zn	10 mg/L
.MTCCV_00013	12/16/16	High Purity Standards, Lot 1534837			(Purchased Reagent)		Fe	500 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Lead	10 mg/L
							Mo	20 mg/L
							P	500 mg/L
							Sb	5 mg/L
							Silver	5 mg/L
							Sn	10 mg/L
							Ti	20 mg/L
							Tl	5 mg/L
.MTICSAB_00014	01/14/17	Inorganic Ventures, Lot J2-MEB616027			(Purchased Reagent)		Al	1000 mg/L
							Ca	1000 mg/L
							Fe	1000 mg/L
							K	1000 mg/L
							Mg	1000 mg/L
							Mo	20 mg/L
							Na	1000 mg/L
							P	1000 mg/L
							Ti	20 mg/L
MT6020ICV_00056	11/19/16	10/19/16	MIllipore Water, Lot -- --	100 mL	MTICV_00009	0.8 mL	Arsenic	80 ug/L
							Barium	80 ug/L
							Cadmium	80 ug/L
							Chromium	80 ug/L
							Lead	80 ug/L
							Selenium	80 ug/L
							Silver	40 ug/L
.MTICV_00009	11/19/16	Inorganic Ventures, Lot J2-MEB605103			(Purchased Reagent)		Arsenic	10 mg/L
							Barium	10 mg/L
							Cadmium	10 mg/L
							Chromium	10 mg/L
							Lead	10 mg/L
							Selenium	10 mg/L
							Silver	5 mg/L
MT6020LL_00073	04/19/17	10/19/16	HNO3/HCL, Lot NA	100 mL	MT6020LLSTD_00013	1 mL	Arsenic	0.002 mg/L
							Barium	0.001 mg/L
							Cadmium	0.001 mg/L
							Chromium	0.002 mg/L
							Lead	0.001 mg/L
							Selenium	0.002 mg/L
							Silver	0.001 mg/L
.MT6020LLSTD_00013	09/06/17	Inorganic Ventures, Lot K2-MEB651459			(Purchased Reagent)		Arsenic	0.2 mg/L
							Barium	0.1 mg/L
							Cadmium	0.1 mg/L
							Chromium	0.2 mg/L
							Lead	0.1 mg/L
							Selenium	0.2 mg/L
							Silver	0.1 mg/L
MT6020PDS_00029	03/21/17	09/21/16	MIllipore Water, Lot --	50 mL	TACA 1_00006	5 mL	Arsenic	10 ppm

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Barium	10 ppm
							Cadmium	10 ppm
							Chromium	10 ppm
							Lead	10 ppm
							Selenium	10 ppm
							Silver	2.5 ppm
.TACA 1_00006	05/08/17	Inorganic Ventures, Lot K2-MEB627068			(Purchased Reagent)		Arsenic	100 mg/L
							Barium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Lead	100 mg/L
							Selenium	100 mg/L
							Silver	25 mg/L
MV8260MMIM_00091	11/27/16	05/27/16	Methanol, Lot 0000062345	10 mL	MV8260MM_00074	0.8 mL	1,1,1,2-Tetrachloroethane	200 ug/mL
							1,1,1-Trichloroethane	200 ug/mL
							1,1,2,2-Tetrachloroethane	200 ug/mL
							1,1,2-Trichloroethane	200 ug/mL
							1,1-Dichloroethane	200 ug/mL
							1,1-Dichloroethene	200 ug/mL
							1,1-Dichloropropene	200 ug/mL
							1,2,3-Trichlorobenzene	200 ug/mL
							1,2,3-Trichloropropane	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2,4-Trimethylbenzene	200 ug/mL
							1,2-Dibromo-3-Chloropropane	200 ug/mL
							1,2-Dibromoethane (EDB)	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Dichloroethane	200 ug/mL
							1,2-Dichloropropane	200 ug/mL
							1,3,5-Trimethylbenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dichloropropane	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							2,2-Dichloropropane	200 ug/mL
							2-Chlorotoluene	200 ug/mL
							4-Chlorotoluene	200 ug/mL
							Benzene	200 ug/mL
							Bromobenzene	200 ug/mL
							Bromochloromethane	200 ug/mL
							Bromodichloromethane	200 ug/mL
							Bromoform	200 ug/mL
							Carbon tetrachloride	200 ug/mL
							Chlorobenzene	200 ug/mL
							Chloroform	200 ug/mL
							cis-1,2-Dichloroethene	200 ug/mL
							cis-1,3-Dichloropropene	200 ug/mL
							Dibromomethane	200 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ethylbenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Isopropylbenzene	200 ug/mL
							m-Xylene & p-Xylene	200 ug/mL
							Methylene Chloride	200 ug/mL
							n-Butylbenzene	200 ug/mL
							N-Propylbenzene	200 ug/mL
							Naphthalene	200 ug/mL
							o-Xylene	200 ug/mL
							p-Isopropyltoluene	200 ug/mL
							sec-Butylbenzene	200 ug/mL
							Styrene	200 ug/mL
							tert-Butylbenzene	200 ug/mL
							Tetrachloroethene	200 ug/mL
							Toluene	200 ug/mL
							trans-1,2-Dichloroethene	200 ug/mL
							trans-1,3-Dichloropropene	200 ug/mL
							Trichloroethene	200 ug/mL
.MV8260MM_00074	11/27/16		Restek, Lot A0108163		(Purchased Reagent)		1,1,1,2-Tetrachloroethane	2500 ug/mL
							1,1,1-Trichloroethane	2500 ug/mL
							1,1,2,2-Tetrachloroethane	2500 ug/mL
							1,1,2-Trichloroethane	2500 ug/mL
							1,1-Dichloroethane	2500 ug/mL
							1,1-Dichloroethene	2500 ug/mL
							1,1-Dichloropropene	2500 ug/mL
							1,2,3-Trichlorobenzene	2500 ug/mL
							1,2,3-Trichloropropane	2500 ug/mL
							1,2,4-Trichlorobenzene	2500 ug/mL
							1,2,4-Trimethylbenzene	2500 ug/mL
							1,2-Dibromo-3-Chloropropane	2500 ug/mL
							1,2-Dibromoethane (EDB)	2500 ug/mL
							1,2-Dichlorobenzene	2500 ug/mL
							1,2-Dichloroethane	2500 ug/mL
							1,2-Dichloropropane	2500 ug/mL
							1,3,5-Trimethylbenzene	2500 ug/mL
							1,3-Dichlorobenzene	2500 ug/mL
							1,3-Dichloropropane	2500 ug/mL
							1,4-Dichlorobenzene	2500 ug/mL
							2,2-Dichloropropane	2500 ug/mL
							2-Chlorotoluene	2500 ug/mL
							4-Chlorotoluene	2500 ug/mL
							Benzene	2500 ug/mL
							Bromobenzene	2500 ug/mL
							Bromochloromethane	2500 ug/mL
							Bromodichloromethane	2500 ug/mL
							Bromoform	2500 ug/mL
							Carbon tetrachloride	2500 ug/mL
							Chlorobenzene	2500 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chloroform	2500 ug/mL
							cis-1,2-Dichloroethene	2500 ug/mL
							cis-1,3-Dichloropropene	2500 ug/mL
							Dibromomethane	2500 ug/mL
							Ethylbenzene	2500 ug/mL
							Hexachlorobutadiene	2500 ug/mL
							Isopropylbenzene	2500 ug/mL
							m-Xylene & p-Xylene	2500 ug/mL
							Methylene Chloride	2500 ug/mL
							n-Butylbenzene	2500 ug/mL
							N-Propylbenzene	2500 ug/mL
							Naphthalene	2500 ug/mL
							o-Xylene	2500 ug/mL
							p-Isopropyltoluene	2500 ug/mL
							sec-Butylbenzene	2500 ug/mL
							Styrene	2500 ug/mL
							tert-Butylbenzene	2500 ug/mL
							Tetrachloroethene	2500 ug/mL
							Toluene	2500 ug/mL
							trans-1,2-Dichloroethene	2500 ug/mL
							trans-1,3-Dichloropropene	2500 ug/mL
							Trichloroethene	2500 ug/mL
MV8260MMIM_00096	01/31/17	08/03/16	Methanol, Lot 0000099494	10 mL	MV8260MM_00080	0.8 mL	1,1,1,2-Tetrachloroethane	200 ug/mL
							1,1,1-Trichloroethane	200 ug/mL
							1,1,2,2-Tetrachloroethane	200 ug/mL
							1,1,2-Trichloro-1,2,2-trifluoroethane	200 ug/mL
							1,1,2-Trichloroethane	200 ug/mL
							1,1-Dichloroethane	200 ug/mL
							1,1-Dichloroethene	200 ug/mL
							1,1-Dichloropropene	200 ug/mL
							1,2,3-Trichlorobenzene	200 ug/mL
							1,2,3-Trichloropropane	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2,4-Trimethylbenzene	200 ug/mL
							1,2-Dibromo-3-Chloropropane	200 ug/mL
							1,2-Dibromoethane (EDB)	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Dichloroethane	200 ug/mL
							1,2-Dichloropropane	200 ug/mL
							1,3,5-Trimethylbenzene	200 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dichloropropane	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							2,2-Dichloropropane	200 ug/mL
							2-Chlorotoluene	200 ug/mL
							2-Methyl-2-propanol	2000 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3-Chloro-1-propene	200 ug/mL
							4-Chlorotoluene	200 ug/mL
							Benzene	200 ug/mL
							Bromobenzene	200 ug/mL
							Bromochloromethane	200 ug/mL
							Bromodichloromethane	200 ug/mL
							Bromoform	200 ug/mL
							Carbon disulfide	200 ug/mL
							Carbon tetrachloride	200 ug/mL
							Chlorobenzene	200 ug/mL
							Chlorodibromomethane	200 ug/mL
							Chloroform	200 ug/mL
							cis-1,2-Dichloroethene	200 ug/mL
							cis-1,3-Dichloropropene	200 ug/mL
							Cyclohexane	200 ug/mL
							Dibromomethane	200 ug/mL
							Ethyl methacrylate	200 ug/mL
							Ethylbenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexane	200 ug/mL
							Iodomethane	200 ug/mL
							Isobutyl alcohol	5000 ug/mL
							Isopropylbenzene	200 ug/mL
							m-Xylene & p-Xylene	200 ug/mL
							Methyl tert-butyl ether	200 ug/mL
							Methylene Chloride	200 ug/mL
							n-Butylbenzene	200 ug/mL
							N-Propylbenzene	200 ug/mL
							Naphthalene	200 ug/mL
							o-Xylene	200 ug/mL
							p-Isopropyltoluene	200 ug/mL
							sec-Butylbenzene	200 ug/mL
							Styrene	200 ug/mL
							tert-Butylbenzene	200 ug/mL
							Tetrachloroethene	200 ug/mL
							Toluene	200 ug/mL
							trans-1,2-Dichloroethene	200 ug/mL
							trans-1,3-Dichloropropene	200 ug/mL
							trans-1,4-Dichloro-2-butene	200 ug/mL
							Trichloroethene	200 ug/mL
.MV8260MM_00080	01/31/17		Restek, Lot A0108166		(Purchased Reagent)		1,1,1,2-Tetrachloroethane	2500 ug/mL
							1,1,1-Trichloroethane	2500 ug/mL
							1,1,2,2-Tetrachloroethane	2500 ug/mL
							1,1,2-Trichloro-1,2,2-trifluoroethane	2500 ug/mL
							1,1,2-Trichloroethane	2500 ug/mL
							1,1-Dichloroethane	2500 ug/mL
							1,1-Dichloroethene	2500 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,1-Dichloropropene	2500 ug/mL
							1,2,3-Trichlorobenzene	2500 ug/mL
							1,2,3-Trichloropropane	2500 ug/mL
							1,2,4-Trichlorobenzene	2500 ug/mL
							1,2,4-Trimethylbenzene	2500 ug/mL
							1,2-Dibromo-3-Chloropropane	2500 ug/mL
							1,2-Dibromoethane (EDB)	2500 ug/mL
							1,2-Dichlorobenzene	2500 ug/mL
							1,2-Dichloroethane	2500 ug/mL
							1,2-Dichloropropane	2500 ug/mL
							1,3,5-Trimethylbenzene	2500 ug/mL
							1,3-Dichlorobenzene	2500 ug/mL
							1,3-Dichloropropane	2500 ug/mL
							1,4-Dichlorobenzene	2500 ug/mL
							2,2-Dichloropropane	2500 ug/mL
							2-Chlorotoluene	2500 ug/mL
							2-Methyl-2-propanol	25000 ug/mL
							3-Chloro-1-propene	2500 ug/mL
							4-Chlorotoluene	2500 ug/mL
							Benzene	2500 ug/mL
							Bromobenzene	2500 ug/mL
							Bromochloromethane	2500 ug/mL
							Bromodichloromethane	2500 ug/mL
							Bromoform	2500 ug/mL
							Carbon disulfide	2500 ug/mL
							Carbon tetrachloride	2500 ug/mL
							Chlorobenzene	2500 ug/mL
							Chlorodibromomethane	2500 ug/mL
							Chloroform	2500 ug/mL
							cis-1,2-Dichloroethene	2500 ug/mL
							cis-1,3-Dichloropropene	2500 ug/mL
							Cyclohexane	2500 ug/mL
							Dibromomethane	2500 ug/mL
							Ethyl methacrylate	2500 ug/mL
							Ethylbenzene	2500 ug/mL
							Hexachlorobutadiene	2500 ug/mL
							Hexane	2500 ug/mL
							Iodomethane	2500 ug/mL
							Isobutyl alcohol	62500 ug/mL
							Isopropylbenzene	2500 ug/mL
							m-Xylene & p-Xylene	2500 ug/mL
							Methyl tert-butyl ether	2500 ug/mL
							Methylene Chloride	2500 ug/mL
							n-Butylbenzene	2500 ug/mL
							N-Propylbenzene	2500 ug/mL
							Naphthalene	2500 ug/mL
							o-Xylene	2500 ug/mL
							p-Isopropyltoluene	2500 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							sec-Butylbenzene	2500 ug/mL
							Styrene	2500 ug/mL
							tert-Butylbenzene	2500 ug/mL
							Tetrachloroethene	2500 ug/mL
							Toluene	2500 ug/mL
							trans-1,2-Dichloroethene	2500 ug/mL
							trans-1,3-Dichloropropene	2500 ug/mL
							trans-1,4-Dichloro-2-butene	2500 ug/mL
							Trichloroethene	2500 ug/mL
MV8260SUIM_00087	10/20/16	04/20/16	Methanol, Lot 0000118655	100 mL	MV8260SU_00067	0.8 mL	1,2-Dichloroethane-d4 (Surr)	20 ug/mL
							4-Bromofluorobenzene (Surr)	20 ug/mL
							Dibromofluoromethane (Surr)	20 ug/mL
							Toluene-d8 (Surr)	20 ug/mL
.MV8260SU_00067	10/20/16		Restek, Lot A0114901		(Purchased Reagent)		1,2-Dichloroethane-d4 (Surr)	2500 ug/mL
							4-Bromofluorobenzene (Surr)	2500 ug/mL
							Dibromofluoromethane (Surr)	2500 ug/mL
							Toluene-d8 (Surr)	2500 ug/mL
MV8260SUIM_00090	03/02/17	09/02/16	Methanol, Lot 0000118655	100 mL	MV8260SU_00070	0.8 mL	1,2-Dichloroethane-d4 (Surr)	20 ug/mL
							4-Bromofluorobenzene (Surr)	20 ug/mL
							Dibromofluoromethane (Surr)	20 ug/mL
							Toluene-d8 (Surr)	20 ug/mL
.MV8260SU_00070	03/02/17		Restek, Lot A0114901		(Purchased Reagent)		1,2-Dichloroethane-d4 (Surr)	2500 ug/mL
							4-Bromofluorobenzene (Surr)	2500 ug/mL
							Dibromofluoromethane (Surr)	2500 ug/mL
							Toluene-d8 (Surr)	2500 ug/mL
MV8260SUIM_00091	03/02/17	09/02/16	Methanol, Lot 0000118655	100 mL	MV8260SU_00071	4 mL	1,2-Dichloroethane-d4 (Surr)	100 ug/mL
							4-Bromofluorobenzene (Surr)	100 ug/mL
							Dibromofluoromethane (Surr)	100 ug/mL
							Toluene-d8 (Surr)	100 ug/mL
.MV8260SU_00071	03/02/17		RESTEK, Lot A0114901		(Purchased Reagent)		1,2-Dichloroethane-d4 (Surr)	2500 ug/mL
							4-Bromofluorobenzene (Surr)	2500 ug/mL
							Dibromofluoromethane (Surr)	2500 ug/mL
							Toluene-d8 (Surr)	2500 ug/mL
MVGASESIM_00111	01/15/17	07/15/16	Methanol, Lot 0000099494	10 mL	MVGASES_00093	0.8 mL	Bromomethane	200 ug/mL
							Chloroethane	200 ug/mL
							Chloromethane	200 ug/mL
							Dichlorodifluoromethane	200 ug/mL
							Trichlorofluoromethane	200 ug/mL
							Vinyl chloride	200 ug/mL
.MVGASES_00093	01/15/17		Restek, Lot A0115012		(Purchased Reagent)		Bromomethane	2500 ug/mL
							Chloroethane	2500 ug/mL
							Chloromethane	2500 ug/mL
							Dichlorodifluoromethane	2500 ug/mL

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Trichlorofluoromethane	2500 ug/mL
							Vinyl chloride	2500 ug/mL
MVISIM_00054	10/20/16	04/20/16	Methanol, Lot 0000118655	100 mL	MVIS_00053	4 mL	1,4-Dichlorobenzene-d4	10 ug/mL
							2-Butanone-d5	50 ug/mL
							Chlorobenzene-d5	10 ug/mL
							Dioxane-d8 (IS)	200 ug/mL
							Fluorobenzene (IS)	10 ug/mL
							TBA-d9 (IS)	200 ug/mL
.MVIS_00053	10/20/16	Restek, Lot A0113246			(Purchased Reagent)		1,4-Dichlorobenzene-d4	250 ug/mL
							2-Butanone-d5	1250 ug/mL
							Chlorobenzene-d5	250 ug/mL
							Dioxane-d8 (IS)	5000 ug/mL
							Fluorobenzene (IS)	250 ug/mL
							TBA-d9 (IS)	5000 ug/mL
MVISIM_00055	03/03/17	09/03/16	Methanol, Lot 0000118655	100 mL	MVIS_00055	4 mL	1,4-Dichlorobenzene-d4	10 ug/mL
							2-Butanone-d5	50 ug/mL
							Chlorobenzene-d5	10 ug/mL
							Dioxane-d8 (IS)	200 ug/mL
							Fluorobenzene (IS)	10 ug/mL
							TBA-d9 (IS)	200 ug/mL
.MVIS_00055	03/03/17	Restek, Lot A0118105			(Purchased Reagent)		1,4-Dichlorobenzene-d4	250 ug/mL
							2-Butanone-d5	1250 ug/mL
							Chlorobenzene-d5	250 ug/mL
							Dioxane-d8 (IS)	5000 ug/mL
							Fluorobenzene (IS)	250 ug/mL
							TBA-d9 (IS)	5000 ug/mL
MVODDNEW_00077	12/22/16	06/22/16	Methanol, Lot 0000118655	10 mL	MVKETONE_00054	0.16 mL	2-Butanone (MEK)	200 ug/mL
							2-Hexanone	200 ug/mL
							4-Methyl-2-pentanone (MIBK)	200 ug/mL
							Acetone	200 ug/mL
.MVKETONE_00054	12/22/16	Restek, Lot A0113194			(Purchased Reagent)		2-Butanone (MEK)	12500 ug/mL
							2-Hexanone	12500 ug/mL
							4-Methyl-2-pentanone (MIBK)	12500 ug/mL
							Acetone	12500 ug/mL
MVVAIM_00141	10/31/16	07/15/16	Methanol, Lot 0000099494	10 mL	MVVA_00106	0.4 mL	Vinyl acetate	200 ug/mL
.MVVA_00106	10/31/16	Restek, Lot A0118759			(Purchased Reagent)		Vinyl acetate	5000 ug/mL
TACA 1_00007	08/09/17	Inorganic Ventures, Lot K2-MEB650788			(Purchased Reagent)		Al	500 mg/L
							Arsenic	100 mg/L
							B	500 mg/L
							Barium	100 mg/L
							Be	100 mg/L
							Ca	500 mg/L
							Cadmium	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ce	100 mg/L
							Chromium	100 mg/L
							Co	100 mg/L
							Cu	100 mg/L
							Fe	500 mg/L
							Gd	100 mg/L
							K	500 mg/L
							Lead	100 mg/L
							Li	100 mg/L
							Mg	500 mg/L
							Mn	100 mg/L
							Na	500 mg/L
							Ni	100 mg/L
							P	500 mg/L
							Selenium	100 mg/L
							Silver	25 mg/L
							Sr	100 mg/L
							Tl	25 mg/L
							U	100 mg/L
							V	100 mg/L
							Zn	100 mg/L
TACA 2_00007	08/09/17	Inorganic Ventures, Lot K2-MEB650789			(Purchased Reagent)		Au	100 mg/L
							Mo	100 mg/L
							Sb	100 mg/L
							Sn	100 mg/L
							Ti	100 mg/L
WC-PH-ICV_00022	10/31/16	Fisher Chemical, Lot 152135			(Purchased Reagent)		pH adj. to 25 deg C	8 SU
WC-PH-L3_00012	07/05/17	Ricca, Lot 1601A85			(Purchased Reagent)		pH adj. to 25 deg C	7 SU

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
8151 LCS_00082	11/20/16	09/20/16	P&T Methanol, Lot MethanolP&T_00148	100 mL	8151_LCS_Stck_00013	1 mL	2,4,5-T	10 ug/mL
							2,4-D	10 ug/mL
							2,4-DB	10 ug/mL
							Dalapon	10 ug/mL
							Dicamba	10 ug/mL
							Dichlorprop	10 ug/mL
							Dinoseb	10 ug/mL
							MCPA	1000 ug/mL
							MCPP	1000 ug/mL
							Picloram	10 ug/mL
							Silvex (2,4,5-TP)	10 ug/mL
					MCPA&MCPP_00012	1 mL	MCPA	1000 ug/mL
							MCPP	1000 ug/mL
.8151_LCS_Stck_00013	03/06/17	Accustandard, Lot 216051191			(Purchased Reagent)		2,4,5-T	1000 ug/mL
							2,4-D	1000 ug/mL
							2,4-DB	1000 ug/mL
							Dalapon	1000 ug/mL
							Dicamba	1000 ug/mL
							Dichlorprop	1000 ug/mL
							Dinoseb	1000 ug/mL
							MCPA	10000 ug/mL
							MCPP	10000 ug/mL
							Picloram	1000 ug/mL
							Silvex (2,4,5-TP)	1000 ug/mL
.MCPA&MCPP_00012	05/17/18	AccuStandard, Lot 216051154			(Purchased Reagent)		MCPA	90 mg/mL
							MCPP	90 mg/mL
8151ICALL1_00055	04/12/17	10/12/16	Hexane, Lot 135581	5 mL	8151ICALL6_00051	0.25 mL	2,4,5-T	0.0476325 ug/mL
							2,4-D	0.047015 ug/mL
							2,4-DB	0.0475725 ug/mL
							Dicamba	0.0470625 ug/mL
							Dichlorprop	0.04761 ug/mL
							Dinoseb	0.047475 ug/mL
							Silvex (2,4,5-TP)	0.0478575 ug/mL
							Dalapon	0.0458875 ug/mL
							MCPA	4.68795 ug/mL
							MCPP	4.70802 ug/mL
							2,4-Dichlorophenylacetic acid	0.04638 ug/mL
.8151ICALL6_00051	04/12/17	10/12/16	HEXANE, Lot 135581	10 mL	8151WorkALT_00003	1 mL	2,4,5-T	0.95265 ug/mL
							2,4-D	0.9403 ug/mL
							2,4-DB	0.95145 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dicamba	0.94125 ug/mL
							Dichlorprop	0.9522 ug/mL
							Dinoseb	0.9495 ug/mL
							Silvex (2,4,5-TP)	0.95715 ug/mL
							Dalapon	0.91775 ug/mL
							MCPA	93.7591 ug/mL
							MCPP	94.1603 ug/mL
							2,4-Dichlorophenylacetic acid	0.9276 ug/mL
..8151WorkALT_00003	04/12/17	10/12/16	Hexane, Lot 135581	10 mL	8151ResMix#1_00005	0.5 mL	2,4,5-T	9.5265 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5145 ug/mL
							Dicamba	9.4125 ug/mL
							Dichlorprop	9.522 ug/mL
							Dinoseb	9.495 ug/mL
							Silvex (2,4,5-TP)	9.5715 ug/mL
					8151ResMix#2_00004	50 uL	Dalapon	9.1775 ug/mL
					8151ResMix#3_00008	0.5 mL	MCPA	937.591 ug/mL
							MCPP	941.604 ug/mL
					8151StkSurr_00050	1 mL	2,4-Dichlorophenylacetic acid	9.276 ug/mL
...8151ResMix#1_00005	03/31/23		Restek, Lot A0118257		(Purchased Reagent)		2,4,5-T	190.53 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.29 ug/mL
							Dicamba	188.25 ug/mL
							Dichlorprop	190.44 ug/mL
							Dinoseb	189.9 ug/mL
							Silvex (2,4,5-TP)	191.43 ug/mL
...8151ResMix#2_00004	09/30/22		Restek, Lot A0114340		(Purchased Reagent)		Dalapon	1835.5 ug/mL
...8151ResMix#3_00008	02/28/23		Restek, Lot A0117540		(Purchased Reagent)		MCPA	18751.8 ug/mL
							MCPP	18832.1 ug/mL
...8151StkSurr_00050	04/27/18		AccuStandard, Lot 215041203-01		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.76 ug/mL
8151ICALL2_00056	04/12/17	10/12/16	Hexane, Lot 135581	5 mL	8151ICALL6_00051	0.5 mL	2,4,5-T	0.095265 ug/mL
							2,4-D	0.09403 ug/mL
							2,4-DB	0.095145 ug/mL
							Dicamba	0.094125 ug/mL
							Dichlorprop	0.09522 ug/mL
							Dinoseb	0.09495 ug/mL
							Silvex (2,4,5-TP)	0.095715 ug/mL
							Dalapon	0.091775 ug/mL
							MCPA	9.3759 ug/mL
							MCPP	9.41604 ug/mL
							2,4-Dichlorophenylacetic acid	0.09276 ug/mL
.8151ICALL6_00051	04/12/17	10/12/16	HEXANE, Lot 135581	10 mL	8151WorkALT_00003	1 mL	2,4,5-T	0.95265 ug/mL
							2,4-D	0.9403 ug/mL

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4-DB	0.95145 ug/mL
							Dicamba	0.94125 ug/mL
							Dichlorprop	0.9522 ug/mL
							Dinoseb	0.9495 ug/mL
							Silvex (2,4,5-TP)	0.95715 ug/mL
							Dalapon	0.91775 ug/mL
							MCPA	93.7591 ug/mL
							MCPP	94.1603 ug/mL
							2,4-Dichlorophenylacetic acid	0.9276 ug/mL
..8151WorkALT_00003	04/12/17	10/12/16	Hexane, Lot 135581	10 mL	8151ResMix#1_00005	0.5 mL	2,4,5-T	9.5265 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5145 ug/mL
							Dicamba	9.4125 ug/mL
							Dichlorprop	9.522 ug/mL
							Dinoseb	9.495 ug/mL
							Silvex (2,4,5-TP)	9.5715 ug/mL
					8151ResMix#2_00004	50 uL	Dalapon	9.1775 ug/mL
					8151ResMix#3_00008	0.5 mL	MCPA	937.591 ug/mL
							MCPP	941.604 ug/mL
					8151StkSurr_00050	1 mL	2,4-Dichlorophenylacetic acid	9.276 ug/mL
...8151ResMix#1_00005	03/31/23	Restek, Lot A0118257			(Purchased Reagent)		2,4,5-T	190.53 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.29 ug/mL
							Dicamba	188.25 ug/mL
							Dichlorprop	190.44 ug/mL
							Dinoseb	189.9 ug/mL
							Silvex (2,4,5-TP)	191.43 ug/mL
...8151ResMix#2_00004	09/30/22	Restek, Lot A0114340			(Purchased Reagent)		Dalapon	1835.5 ug/mL
...8151ResMix#3_00008	02/28/23	Restek, Lot A0117540			(Purchased Reagent)		MCPA	18751.8 ug/mL
							MCPP	18832.1 ug/mL
...8151StkSurr_00050	04/27/18	AccuStandard, Lot 215041203-01			(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.76 ug/mL
8151ICALL3_00049	04/12/17	10/12/16	Hexane, Lot 135581	5 mL	8151WorkALT_00003	0.125 mL	2,4,5-T	0.238163 ug/mL
							2,4-D	0.235075 ug/mL
							2,4-DB	0.237863 ug/mL
							Dicamba	0.235313 ug/mL
							Dichlorprop	0.23805 ug/mL
							Dinoseb	0.237375 ug/mL
							Silvex (2,4,5-TP)	0.239287 ug/mL
							Dalapon	0.229437 ug/mL
							MCPA	23.4398 ug/mL
							MCPP	23.5401 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4-Dichlorophenylacetic acid	0.2319 ug/mL
.8151WorkALT_00003	04/12/17	10/12/16	Hexane, Lot 135581	10 mL	8151ResMix#1_00005	0.5 mL	2,4,5-T	9.5265 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5145 ug/mL
							Dicamba	9.4125 ug/mL
							Dichlorprop	9.522 ug/mL
							Dinoseb	9.495 ug/mL
							Silvex (2,4,5-TP)	9.5715 ug/mL
					8151ResMix#2_00004	50 uL	Dalapon	9.1775 ug/mL
					8151ResMix#3_00008	0.5 mL	MCPA	937.591 ug/mL
							MCPP	941.604 ug/mL
					8151StkSurr_00050	1 mL	2,4-Dichlorophenylacetic acid	9.276 ug/mL
..8151ResMix#1_00005	03/31/23		Restek, Lot A0118257		(Purchased Reagent)		2,4,5-T	190.53 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.29 ug/mL
							Dicamba	188.25 ug/mL
							Dichlorprop	190.44 ug/mL
							Dinoseb	189.9 ug/mL
							Silvex (2,4,5-TP)	191.43 ug/mL
..8151ResMix#2_00004	09/30/22		Restek, Lot A0114340		(Purchased Reagent)		Dalapon	1835.5 ug/mL
..8151ResMix#3_00008	02/28/23		Restek, Lot A0117540		(Purchased Reagent)		MCPA	18751.8 ug/mL
							MCPP	18832.1 ug/mL
..8151StkSurr_00050	04/27/18		AccuStandard, Lot 215041203-01		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.76 ug/mL
8151ICALL4_00116	04/12/17	10/12/16	Hexane, Lot 135581	50 mL	8151WorkALT_00003	2.5 mL	2,4,5-T	0.476325 ug/mL
							2,4-D	0.47015 ug/mL
							2,4-DB	0.475725 ug/mL
							Dicamba	0.470625 ug/mL
							Dichlorprop	0.4761 ug/mL
							Dinoseb	0.47475 ug/mL
							Silvex (2,4,5-TP)	0.478575 ug/mL
							Dalapon	0.458875 ug/mL
							MCPA	46.8795 ug/mL
							MCPP	47.0802 ug/mL
							2,4-Dichlorophenylacetic acid	0.4638 ug/mL
.8151WorkALT_00003	04/12/17	10/12/16	Hexane, Lot 135581	10 mL	8151ResMix#1_00005	0.5 mL	2,4,5-T	9.5265 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5145 ug/mL
							Dicamba	9.4125 ug/mL
							Dichlorprop	9.522 ug/mL
							Dinoseb	9.495 ug/mL
							Silvex (2,4,5-TP)	9.5715 ug/mL
					8151ResMix#2_00004	50 uL	Dalapon	9.1775 ug/mL
					8151ResMix#3_00008	0.5 mL	MCPA	937.591 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							MCPP	941.604 ug/mL
					8151StkSurr_00050	1 mL	2,4-Dichlorophenylacetic acid	9.276 ug/mL
..8151ResMix#1_00005	03/31/23		Restek, Lot A0118257		(Purchased Reagent)		2,4,5-T	190.53 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.29 ug/mL
							Dicamba	188.25 ug/mL
							Dichlorprop	190.44 ug/mL
							Dinoseb	189.9 ug/mL
							Silvex (2,4,5-TP)	191.43 ug/mL
..8151ResMix#2_00004	09/30/22		Restek, Lot A0114340		(Purchased Reagent)		Dalapon	1835.5 ug/mL
..8151ResMix#3_00008	02/28/23		Restek, Lot A0117540		(Purchased Reagent)		MCPA	18751.8 ug/mL
							MCPP	18832.1 ug/mL
..8151StkSurr_00050	04/27/18		AccuStandard, Lot 215041203-01		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.76 ug/mL
8151ICALL5_00049	04/12/17	10/12/16	HEXANE, Lot 135581	5 mL	8151WorkALT_00003	0.375 mL	2,4,5-T	0.714488 ug/mL
							2,4-D	0.705225 ug/mL
							2,4-DB	0.713588 ug/mL
							Dicamba	0.705938 ug/mL
							Dichlorprop	0.71415 ug/mL
							Dinoseb	0.712125 ug/mL
							Silvex (2,4,5-TP)	0.717862 ug/mL
							Dalapon	0.688312 ug/mL
							MCPA	70.3193 ug/mL
							MCPP	70.6203 ug/mL
							2,4-Dichlorophenylacetic acid	0.6957 ug/mL
.8151WorkALT_00003	04/12/17	10/12/16	Hexane, Lot 135581	10 mL	8151ResMix#1_00005	0.5 mL	2,4,5-T	9.5265 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5145 ug/mL
							Dicamba	9.4125 ug/mL
							Dichlorprop	9.522 ug/mL
							Dinoseb	9.495 ug/mL
							Silvex (2,4,5-TP)	9.5715 ug/mL
					8151ResMix#2_00004	50 uL	Dalapon	9.1775 ug/mL
					8151ResMix#3_00008	0.5 mL	MCPA	937.591 ug/mL
							MCPP	941.604 ug/mL
					8151StkSurr_00050	1 mL	2,4-Dichlorophenylacetic acid	9.276 ug/mL
..8151ResMix#1_00005	03/31/23		Restek, Lot A0118257		(Purchased Reagent)		2,4,5-T	190.53 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.29 ug/mL
							Dicamba	188.25 ug/mL
							Dichlorprop	190.44 ug/mL
							Dinoseb	189.9 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Silvex (2,4,5-TP)	191.43 ug/mL
..8151ResMix#2_00004	09/30/22		Restek, Lot A0114340		(Purchased Reagent)		Dalapon	1835.5 ug/mL
..8151ResMix#3_00008	02/28/23		Restek, Lot A0117540		(Purchased Reagent)		MCPA	18751.8 ug/mL
							MCPP	18832.1 ug/mL
..8151StkSurr_00050	04/27/18		AccuStandard, Lot 215041203-01		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.76 ug/mL
8151ICALL6_00051	04/12/17	10/12/16	HEXANE, Lot 135581	10 mL	8151WorkALT_00003	1 mL	2,4,5-T	0.95265 ug/mL
							2,4-D	0.9403 ug/mL
							2,4-DB	0.95145 ug/mL
							Dicamba	0.94125 ug/mL
							Dichlorprop	0.9522 ug/mL
							Dinoseb	0.9495 ug/mL
							Silvex (2,4,5-TP)	0.95715 ug/mL
							Dalapon	0.91775 ug/mL
							MCPA	93.7591 ug/mL
							MCPP	94.1603 ug/mL
							2,4-Dichlorophenylacetic acid	0.9276 ug/mL
.8151WorkALT_00003	04/12/17	10/12/16	Hexane, Lot 135581	10 mL	8151ResMix#1_00005	0.5 mL	2,4,5-T	9.5265 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5145 ug/mL
							Dicamba	9.4125 ug/mL
							Dichlorprop	9.522 ug/mL
							Dinoseb	9.495 ug/mL
							Silvex (2,4,5-TP)	9.5715 ug/mL
					8151ResMix#2_00004	50 uL	Dalapon	9.1775 ug/mL
					8151ResMix#3_00008	0.5 mL	MCPA	937.591 ug/mL
							MCPP	941.604 ug/mL
					8151StkSurr_00050	1 mL	2,4-Dichlorophenylacetic acid	9.276 ug/mL
..8151ResMix#1_00005	03/31/23		Restek, Lot A0118257		(Purchased Reagent)		2,4,5-T	190.53 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.29 ug/mL
							Dicamba	188.25 ug/mL
							Dichlorprop	190.44 ug/mL
							Dinoseb	189.9 ug/mL
							Silvex (2,4,5-TP)	191.43 ug/mL
..8151ResMix#2_00004	09/30/22		Restek, Lot A0114340		(Purchased Reagent)		Dalapon	1835.5 ug/mL
..8151ResMix#3_00008	02/28/23		Restek, Lot A0117540		(Purchased Reagent)		MCPA	18751.8 ug/mL
							MCPP	18832.1 ug/mL
..8151StkSurr_00050	04/27/18		AccuStandard, Lot 215041203-01		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.76 ug/mL
8151ICALL7_00048	04/12/17	10/12/16	HEXANE, Lot 135581	5 mL	8151WorkALT_00003	1 mL	2,4,5-T	1.9053 ug/mL
							2,4-D	1.8806 ug/mL
							2,4-DB	1.9029 ug/mL
							Dicamba	1.8825 ug/mL
							Dichlorprop	1.9044 ug/mL
							Dinoseb	1.899 ug/mL
							Silvex (2,4,5-TP)	1.9143 ug/mL
							Dalapon	1.8355 ug/mL
							MCPA	187.518 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							MCPP	188.321 ug/mL
							2,4-Dichlorophenylacetic acid	1.8552 ug/mL
.8151WorkALT_00003	04/12/17	10/12/16	Hexane, Lot 135581	10 mL	8151ResMix#1_00005	0.5 mL	2,4,5-T	9.5265 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5145 ug/mL
							Dicamba	9.4125 ug/mL
							Dichlorprop	9.522 ug/mL
							Dinoseb	9.495 ug/mL
							Silvex (2,4,5-TP)	9.5715 ug/mL
					8151ResMix#2_00004	50 uL	Dalapon	9.1775 ug/mL
					8151ResMix#3_00008	0.5 mL	MCPA	937.591 ug/mL
							MCPP	941.604 ug/mL
					8151StkSurr_00050	1 mL	2,4-Dichlorophenylacetic acid	9.276 ug/mL
..8151ResMix#1_00005	03/31/23		Restek, Lot A0118257		(Purchased Reagent)		2,4,5-T	190.53 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.29 ug/mL
							Dicamba	188.25 ug/mL
							Dichlorprop	190.44 ug/mL
							Dinoseb	189.9 ug/mL
							Silvex (2,4,5-TP)	191.43 ug/mL
..8151ResMix#2_00004	09/30/22		Restek, Lot A0114340		(Purchased Reagent)		Dalapon	1835.5 ug/mL
..8151ResMix#3_00008	02/28/23		Restek, Lot A0117540		(Purchased Reagent)		MCPA	18751.8 ug/mL
							MCPP	18832.1 ug/mL
..8151StkSurr_00050	04/27/18		AccuStandard, Lot 215041203-01		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.76 ug/mL
8151ICV_00012	03/28/17	09/28/16	Hexane, Lot 125986	10 mL	8151SSWrking_00026	0.375 mL	2,4-Dichlorophenylacetic acid	0.375 ug/mL
.8151SSWrking_00026	03/28/17	09/28/16	Hexane, Lot 125986	5 mL	8151StkSurr_00049	0.5 mL	2,4-Dichlorophenylacetic acid	10 ug/mL
..8151StkSurr_00049	04/27/18		AccuStandard, Lot 215041203-01		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	100 ug/mL
8151ICV_00012	03/28/17	09/28/16	Hexane, Lot 125986	10 mL	8151SSWrking_00026	0.375 mL	2,4,5-T	0.355463 ug/mL
							2,4-D	0.352613 ug/mL
							2,4-DB	0.355013 ug/mL
							Dalapon	0.341475 ug/mL
							Dicamba	0.352613 ug/mL
							Dichlorprop	0.353888 ug/mL
							MCPA	35.0475 ug/mL
							MCPP	35.1975 ug/mL
							Silvex (2,4,5-TP)	0.356438 ug/mL
.8151SSWrking_00026	03/28/17	09/28/16	Hexane, Lot 125986	5 mL	8151SSStk_00024	0.5 mL	2,4,5-T	9.479 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.467 ug/mL
							Dalapon	9.106 ug/mL
							Dicamba	9.403 ug/mL

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dichlorprop	9.437 ug/mL
							MCPA	934.6 ug/mL
							MCPP	938.6 ug/mL
							Silvex (2,4,5-TP)	9.505 ug/mL
..8151SSStk_00024	07/31/17	UltraScientific, Lot CM-3162			(Purchased Reagent)		2,4,5-T	94.79 ug/mL
							2,4-D	94.03 ug/mL
							2,4-DB	94.67 ug/mL
							Dalapon	91.06 ug/mL
							Dicamba	94.03 ug/mL
							Dichlorprop	94.37 ug/mL
							MCPA	9346 ug/mL
							MCPP	9386 ug/mL
							Silvex (2,4,5-TP)	95.05 ug/mL
8151Surrogate_00126	12/13/16	10/13/16	P&T Methanol, Lot MethanolP&T_00150	200 mL	8151-SurStock_00061	1 mL	2,4-Dichlorophenylacetic acid	5 ug/mL
.8151-SurStock_00061	05/31/17	Restek, Lot A0115599			(Purchased Reagent)		2,4-Dichlorophenylacetic acid	1000 ug/mL
CN 10ppm_00227	11/08/16	11/01/16	2% NaOH, Lot 1% NaOH_00078	100 mg/L	CN CAL Std_00052	1 mL	Cyanide, Amenable	10 mg/L
							Cyanide, Free	10 mg/L
							Cyanide, Non-amenable	10 mg/L
							Cyanide, Total	10 mg/L
							Cyanide, Weak Acid Dissociable	10 mg/L
.CN CAL Std_00052	03/31/17	Ricca, Lot 2609C92			(Purchased Reagent)		Cyanide, Amenable	1000 mg/L
							Cyanide, Free	1000 mg/L
							Cyanide, Non-amenable	1000 mg/L
							Cyanide, Total	1000 mg/L
							Cyanide, Weak Acid Dissociable	1000 mg/L
CN CAL 1 ppm_01171	11/04/16	11/03/16	1% NaOH, Lot N/A	100 mL	CN 10ppm_00227	10 mL	Cyanide, Total	1 mg/L
.CN 10ppm_00227	11/08/16	11/01/16	2% NaOH, Lot 1% NaOH_00078	100 mg/L	CN CAL Std_00052	1 mL	Cyanide, Total	10 mg/L
..CN CAL Std_00052	03/31/17	Ricca, Lot 2609C92			(Purchased Reagent)		Cyanide, Total	1000 mg/L
CN ICV Daily_00936	11/04/16	11/03/16	1% HNO3, Lot N/A	100 mL	CN ICV Int_00406	1 mL	Cyanide, Total	0.1 mg/L
.CN ICV Int_00406	11/08/16	11/01/16	1% NaOH, Lot 1% NaOH_00078	100 mL	CN ICV Std_00038	1 mL	Cyanide, Total	10 mg/L
..CN ICV Std_00038	04/16/18	CPI, Lot 1097445			(Purchased Reagent)		Cyanide, Total	1000 mg/L
CN ICV Int_00406	11/08/16	11/01/16	1% NaOH, Lot 1% NaOH_00078	100 mL	CN ICV Std_00038	1 mL	Cyanide, Amenable	10 mg/L
							Cyanide, Free	10 mg/L
							Cyanide, Non-amenable	0 mg/L
							Cyanide, Total	10 mg/L
							Cyanide, Weak Acid Dissociable	10 mg/L
.CN ICV Std_00038	04/16/18	CPI, Lot 1097445			(Purchased Reagent)		Cyanide, Amenable	1000 mg/L
							Cyanide, Free	1000 mg/L
							Cyanide, Non-amenable	0 mg/L
							Cyanide, Total	1000 mg/L
							Cyanide, Weak Acid Dissociable	1000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
Flash Point_00077	05/30/20	J.T. Baker, Lot 0000138025			(Purchased Reagent)		Flashpoint	81 Degrees F
SFD CAL INT_01290	01/14/17	10/14/16	Di Water, Lot NA	500 mL	SFD CAL STK_00003	3.74532 g	Sulfide	1000 mg/L
.SFD CAL STK_00003	12/31/17	FISHER, Lot 127305			(Purchased Reagent)		Sulfide	0.1335 g/g

Reagent

GC44DDTTA_00006

Certificate of Analysis

4,4'-DDT Solution

Product Number: PST-280I100A01 **Page:** 1 of 1

Lot Number: CM-3903 **Lot Issue Date:** 22-Jul-2015 **Expiration Date:** 31-Aug-2017

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
4,4'-DDT	000050-29-3	RM06888	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15-30°C).

Rec'd 12/13/15
UFB

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

ISO 9001
Registered
TUV USA, Inc.

William J. Leary
Quality Assurance Manager

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Reagent

GCENDRINTA_00006

Certificate of Analysis

Endrin Solution

Product Number: PST-510K100A01 **Page:** 1 of 1

Lot Number: CM-6138 **Lot Issue Date:** 03-Dec-2015 **Expiration Date:** 31-Jan-2018

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
endrin	000072-20-8	RM00557	100.4 ± 0.5 µg/mL

Matrix: acetone

Storage: Store at Room Temperature (15° to 30°C).

Rec'd 12/13/15
UFB

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

ISO 9001
Registered
TUV USA, Inc.

William J. Leary
Quality Assurance Manager

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Reagent

GCPCBSU_00070

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32000 **Lot No.:** A0115723

Description : Pesticide Surrogate Mix

Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2022 **Storage:** 10°C or colder

Handling: Contains PCBs - sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	2,4,5,6-Tetrachloro-m-xylene **CAS #** 877-09-8 (Lot 0052481) **Purity** 98%	199.9 µg/mL	+/- 1.1794 µg/mL +/- 6.3374 µg/mL +/- 8.2781 µg/mL	Gravimetric Unstressed Stressed
2	Decachlorobiphenyl (BZ# 209) **CAS #** 2051-24-3 (Lot ER071509-01) **Purity** 99%	200.0 µg/mL	+/- 1.1798 µg/mL +/- 6.3399 µg/mL +/- 8.2814 µg/mL	Gravimetric Unstressed Stressed

Solvent: Acetone
CAS # 67-64-1
Purity 99%

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

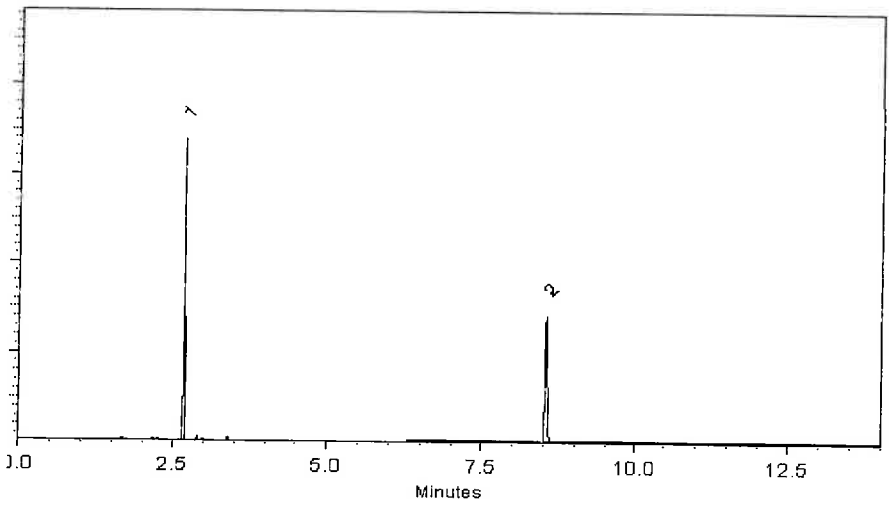
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Cook - Mix Technician

Date Mixed: 01-Dec-2015 **Balance:** 1128353505

Jennifer L. Pollino - QC Analyst

Date Passed: 03-Dec-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

GCPESTIS_00006

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32279 **Lot No.:** A0113173

Description : 1-Bromo-2-nitrobenzene Standard

1-Bromo-2-nitrobenzene Standard 1000 µg/mL, Acetone, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2018 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1-Bromo-2-nitrobenzene	1,008.0 µg/mL	+/- 5.9872	µg/mL	Gravimetric
	CAS # 577-19-5 (Lot 643872/1)		+/- 11.4324	µg/mL	Unstressed
	Purity 99%		+/- 13.1369	µg/mL	Stressed

Solvent: Acetone
CAS # 67-64-1
Purity 99%

5 of 5
Rec'd 5/23/16
MPD

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

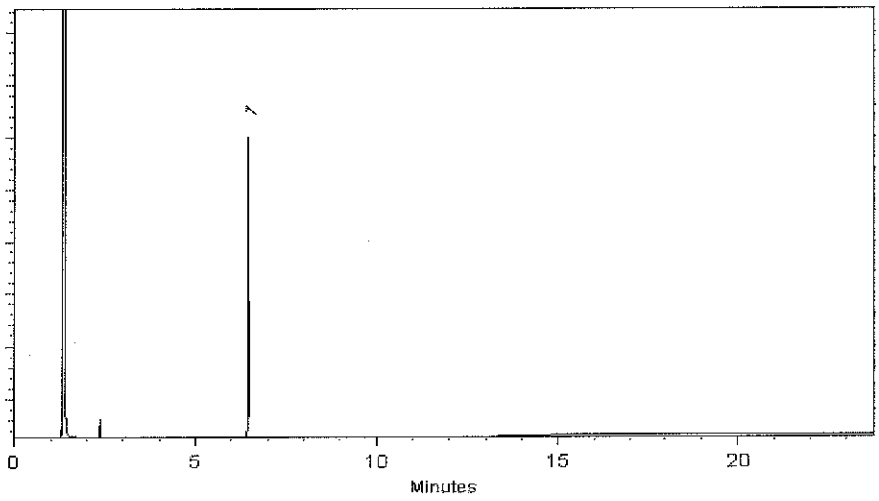
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 10-Aug-2015 **Balance:** B345965662

Jennifer L. Pollino - QC Analyst

Date Passed: 12-Aug-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

GCPESTIS_00007

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32279 **Lot No.:** A0113173

Description : 1-Bromo-2-nitrobenzene Standard

1-Bromo-2-nitrobenzene Standard 1000 µg/mL, Acetone, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2018 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1-Bromo-2-nitrobenzene	1,008.0 µg/mL	+/- 5.9872	µg/mL	Gravimetric
	CAS # 577-19-5 (Lot 643872/1)		+/- 11.4324	µg/mL	Unstressed
	Purity 99%		+/- 13.1369	µg/mL	Stressed

Solvent: Acetone
CAS # 67-64-1
Purity 99%

5 of 5
Rec'd 5/23/16
MPO

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

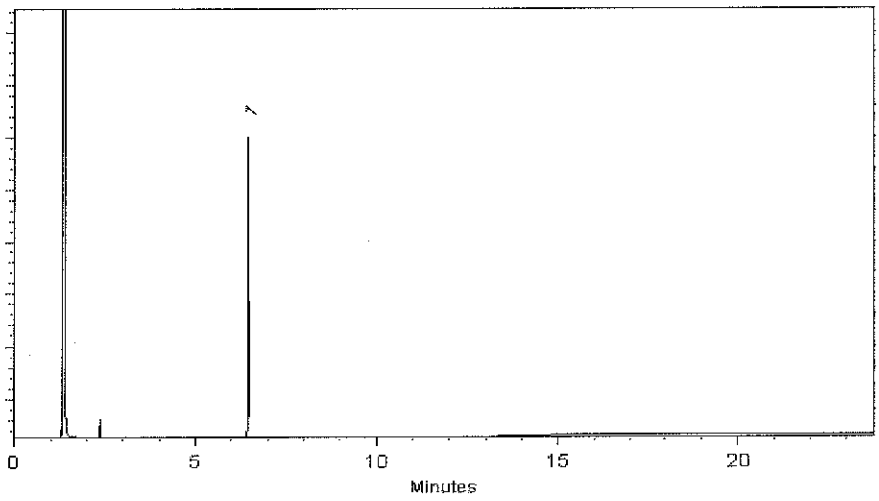
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham

Cheryl Graham - Mix Technician

Date Mixed: 10-Aug-2015 **Balance:** B345965662

Jennifer L Pollino

Jennifer L. Pollino - QC Analyst

Date Passed: 12-Aug-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32000 **Lot No.:** A0108779

Description : Pesticide Surrogate Mix

Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2021 **Storage:** 10°C or colder

Handling: Contains PCBs - sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2,4,5,6-Tetrachloro-m-xylene	200.7 µg/mL	+/- 1.1696	µg/mL	Gravimetric
	CAS # 877-09-8 (Lot 0052481)		+/- 6.2448	µg/mL	Unstressed
	Purity 98%		+/- 8.3078	µg/mL	Stressed
2	Decachlorobiphenyl (BZ# 209)	201.0 µg/mL	+/- 1.1713	µg/mL	Gravimetric
	CAS # 2051-24-3 (Lot ER071509-01)		+/- 6.2540	µg/mL	Unstressed
	Purity 99%		+/- 8.3201	µg/mL	Stressed

Solvent: Acetone
CAS # 67-64-1
Purity 99%

Received 5/14/15
VMN

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

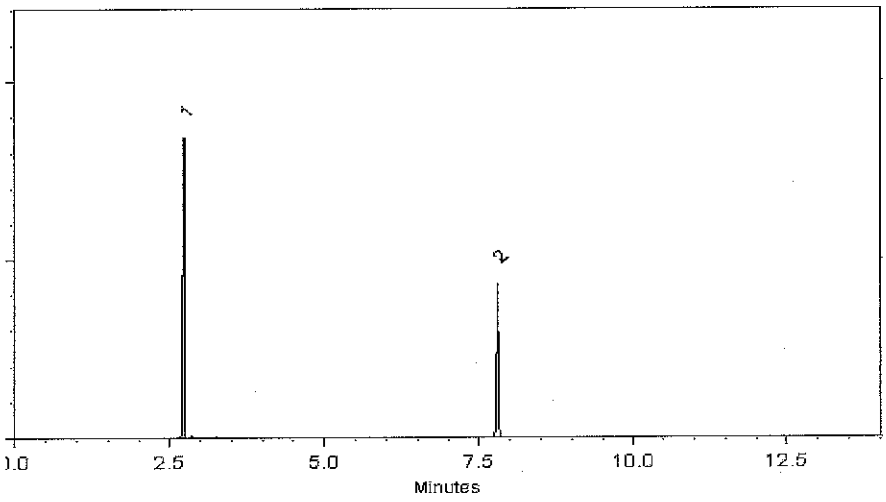
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 02-Feb-2015 **Balance:** 1127510105

Tyler Brown - QA Analyst

Date Passed: 05-Feb-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

GCPESTSU_00028

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32000 **Lot No.:** A0108779

Description : Pesticide Surrogate Mix

Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2021 **Storage:** 10°C or colder

Handling: Contains PCBs - sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2,4,5,6-Tetrachloro-m-xylene		200.7 µg/mL	+/- 1.1696	µg/mL	Gravimetric
	CAS # 877-09-8	(Lot 0052481)		+/- 6.2448	µg/mL	Unstressed
	Purity 98%			+/- 8.3078	µg/mL	Stressed
2	Decachlorobiphenyl (BZ# 209)		201.0 µg/mL	+/- 1.1713	µg/mL	Gravimetric
	CAS # 2051-24-3	(Lot ER071509-01)		+/- 6.2540	µg/mL	Unstressed
	Purity 99%			+/- 8.3201	µg/mL	Stressed

Solvent: Acetone
CAS # 67-64-1
Purity 99%

Received 5/14/15
VMN

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

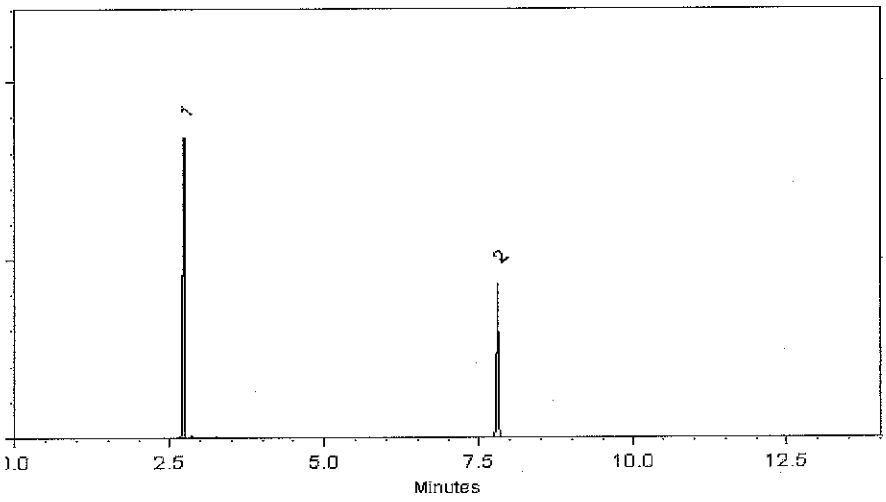
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 02-Feb-2015 **Balance:** 1127510105

Tyler Brown - QA Analyst

Date Passed: 05-Feb-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

GCPestTA_00076

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32415 **Lot No.:** A0106146

Description : Organochlorine Pesticide Mix AB #3

Organochlorine Pesticide Mix AB #3 2,000 µg/mL, Hexane/Toluene (50:50), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2018 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	alpha-BHC		2,001.5 µg/mL	+/- 11.7459 µg/mL		Gravimetric
	CAS # 319-84-6	(Lot 0911942-B)		+/- 78.2942 µg/mL		Unstressed
	Purity 99%			+/- 124.2453 µg/mL		Stressed
2	gamma-BHC (Lindane)		2,000.2 µg/mL	+/- 11.7382 µg/mL		Gravimetric
	CAS # 58-89-9	(Lot 2786400)		+/- 78.2425 µg/mL		Unstressed
	Purity 98%			+/- 124.1633 µg/mL		Stressed
3	beta-BHC		2,002.0 µg/mL	+/- 11.7489 µg/mL		Gravimetric
	CAS # 319-85-7	(Lot ER031313-01)		+/- 78.3137 µg/mL		Unstressed
	Purity 99%			+/- 124.2763 µg/mL		Stressed
4	delta-BHC		2,000.0 µg/mL	+/- 11.7371 µg/mL		Gravimetric
	CAS # 319-86-8	(Lot ER030911-01)		+/- 78.2355 µg/mL		Unstressed
	Purity 99%			+/- 124.1521 µg/mL		Stressed
5	Heptachlor		2,009.5 µg/mL	+/- 11.7928 µg/mL		Gravimetric
	CAS # 76-44-8	(Lot RM03111)		+/- 78.6067 µg/mL		Unstressed
	Purity 98%			+/- 124.7412 µg/mL		Stressed
6	Aldrin		2,005.5 µg/mL	+/- 11.7694 µg/mL		Gravimetric
	CAS # 309-00-2	(Lot 2786300)		+/- 78.4506 µg/mL		Unstressed
	Purity 99%			+/- 124.4936 µg/mL		Stressed
7	Heptachlor epoxide (isomer B)		2,008.0 µg/mL	+/- 11.7841 µg/mL		Gravimetric
	CAS # 1024-57-3	(Lot ER121511-01)		+/- 78.5484 µg/mL		Unstressed
	Purity 99%			+/- 124.6487 µg/mL		Stressed

Received 5/14/15
VMN

8	trans-Chlordane		2,004.5	µg/mL	+/-	11.7635	µg/mL	Gravimetric
	CAS # 5103-74-2	(Lot ER061906-04)			+/-	78.4115	µg/mL	Unstressed
	Purity 99%				+/-	124.4315	µg/mL	Stressed
9	cis-Chlordane		2,001.0	µg/mL	+/-	11.7430	µg/mL	Gravimetric
	CAS # 5103-71-9	(Lot ER062410-01)			+/-	78.2746	µg/mL	Unstressed
	Purity 99%				+/-	124.2142	µg/mL	Stressed
10	Endosulfan I		2,007.5	µg/mL	+/-	11.7813	µg/mL	Gravimetric
	CAS # 959-98-8	(Lot ER012105-02)			+/-	78.5301	µg/mL	Unstressed
	Purity 98%				+/-	124.6196	µg/mL	Stressed
11	4,4'-DDE		2,000.5	µg/mL	+/-	11.7401	µg/mL	Gravimetric
	CAS # 72-55-9	(Lot ER011106-01)			+/-	78.2551	µg/mL	Unstressed
	Purity 99%				+/-	124.1832	µg/mL	Stressed
12	Dieldrin		2,001.7	µg/mL	+/-	11.7468	µg/mL	Gravimetric
	CAS # 60-57-1	(Lot ER030105-03)			+/-	78.3000	µg/mL	Unstressed
	Purity 98%				+/-	124.2546	µg/mL	Stressed
13	Endrin		2,004.0	µg/mL	+/-	11.7606	µg/mL	Gravimetric
	CAS # 72-20-8	(Lot LC06045V)			+/-	78.3920	µg/mL	Unstressed
	Purity 99%				+/-	124.4004	µg/mL	Stressed
14	4,4'-DDD		2,003.1	µg/mL	+/-	11.7550	µg/mL	Gravimetric
	CAS # 72-54-8	(Lot ER061207-01)			+/-	78.3548	µg/mL	Unstressed
	Purity 97%				+/-	124.3415	µg/mL	Stressed
15	Endosulfan II		2,003.0	µg/mL	+/-	11.7547	µg/mL	Gravimetric
	CAS # 33213-65-9	(Lot ER102407-02)			+/-	78.3529	µg/mL	Unstressed
	Purity 99%				+/-	124.3384	µg/mL	Stressed
16	4,4'-DDT		2,006.1	µg/mL	+/-	11.7727	µg/mL	Gravimetric
	CAS # 50-29-3	(Lot ER012306-03)			+/-	78.4726	µg/mL	Unstressed
	Purity 98%				+/-	124.5283	µg/mL	Stressed
17	Endrin aldehyde		2,005.1	µg/mL	+/-	11.7669	µg/mL	Gravimetric
	CAS # 7421-93-4	(Lot ER082306-01)			+/-	78.4342	µg/mL	Unstressed
	Purity 98%				+/-	124.4675	µg/mL	Stressed
18	Endosulfan sulfate		2,002.0	µg/mL	+/-	11.7489	µg/mL	Gravimetric
	CAS # 1031-07-8	(Lot ER042406-04)			+/-	78.3137	µg/mL	Unstressed
	Purity 99%				+/-	124.2763	µg/mL	Stressed
19	Methoxychlor		2,001.7	µg/mL	+/-	11.7468	µg/mL	Gravimetric
	CAS # 72-43-5	(Lot 2959600)			+/-	78.3000	µg/mL	Unstressed
	Purity 98%				+/-	124.2546	µg/mL	Stressed
20	Endrin ketone		2,000.0	µg/mL	+/-	11.7371	µg/mL	Gravimetric
	CAS # 53494-70-5	(Lot 2889500)			+/-	78.2355	µg/mL	Unstressed
	Purity 99%				+/-	124.1521	µg/mL	Stressed

Solvent: Hexane/Toluene (50:50)
CAS # 110-54-3/108-88-3
Purity 99%

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

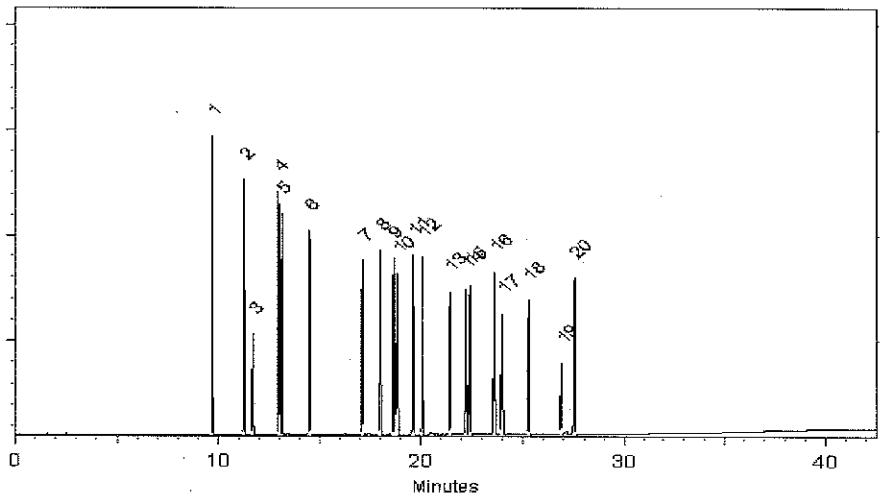
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
150°C to 300°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kendra Swope - Mix Technician

Date Mixed: 23-Sep-2014 **Balance:** 1128342313

Jennifer L. Pollino - QC Analyst

Date Passed: 26-Sep-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

This certificated has been updated on 22December2014 for the following reasons and supersedes any preexisting certificate: Elution order of peaks #10, 11 were reversed as well as peaks #18 & 19, elution order was updated to reflect correct elution order when using a Rtx-CLP2 Column (Cat#11323).

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

1 of 1
Rec'd
5/23/16
UFK

Catalog No. : 32415.sec **Lot No.:** A0108854

Description : Organochlorine Pesticide Mix AB #3

Organochlorine Pesticide Mix AB #3 2,000 µg/mL, Hexane/Toluene (50:50), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2019 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	alpha-BHC **CAS #** 319-84-6.SEC (Lot 1623900) **Purity** 99%	2,009.5 µg/mL	+/- 11.7929 µg/mL +/- 78.6071 µg/mL +/- 124.7419 µg/mL	Gravimetric Unstressed Stressed
2	gamma-BHC (Lindane) **CAS #** 58-89-9.SEC (Lot LC00563V) **Purity** 99%	2,010.0 µg/mL	+/- 11.7958 µg/mL +/- 78.6267 µg/mL +/- 124.7729 µg/mL	Gravimetric Unstressed Stressed
3	beta-BHC **CAS #** 319-85-7.SEC (Lot 1808700) **Purity** 98%	2,003.1 µg/mL	+/- 11.7554 µg/mL +/- 78.3575 µg/mL +/- 124.3458 µg/mL	Gravimetric Unstressed Stressed
4	delta-BHC **CAS #** 319-86-8.SEC (Lot 1912200) **Purity** 99%	2,003.5 µg/mL	+/- 11.7577 µg/mL +/- 78.3724 µg/mL +/- 124.3694 µg/mL	Gravimetric Unstressed Stressed
5	Heptachlor **CAS #** 76-44-8.SEC (Lot 1745400) **Purity** 99%	2,000.5 µg/mL	+/- 11.7401 µg/mL +/- 78.2551 µg/mL +/- 124.1832 µg/mL	Gravimetric Unstressed Stressed
6	Aldrin **CAS #** 309-00-2.SEC (Lot ER062311-01) **Purity** 98%	2,004.1 µg/mL	+/- 11.7612 µg/mL +/- 78.3959 µg/mL +/- 124.4067 µg/mL	Gravimetric Unstressed Stressed
7	Heptachlor epoxide (isomer B) **CAS #** 1024-57-3.SEC (Lot 3352500) **Purity** 99%	2,006.0 µg/mL	+/- 11.7723 µg/mL +/- 78.4702 µg/mL +/- 124.5246 µg/mL	Gravimetric Unstressed Stressed

8	trans-Chlordane		2,006.0	µg/mL	+/-	11.7723	µg/mL	Gravimetric
	CAS # 5103-74-2.SEC	(Lot LC06193V)			+/-	78.4702	µg/mL	Unstressed
	Purity 99%				+/-	124.5246	µg/mL	Stressed
9	cis-Chlordane		2,009.0	µg/mL	+/-	11.7899	µg/mL	Gravimetric
	CAS # 5103-71-9.SEC	(Lot 24407)			+/-	78.5876	µg/mL	Unstressed
	Purity 99%				+/-	124.7108	µg/mL	Stressed
10	4,4'-DDE		2,001.5	µg/mL	+/-	11.7459	µg/mL	Gravimetric
	CAS # 72-55-9.SEC	(Lot 1833500)			+/-	78.2942	µg/mL	Unstressed
	Purity 99%				+/-	124.2453	µg/mL	Stressed
11	Endosulfan I		2,002.1	µg/mL	+/-	11.7497	µg/mL	Gravimetric
	CAS # 959-98-8.SEC	(Lot 1710200)			+/-	78.3192	µg/mL	Unstressed
	Purity 98%				+/-	124.2850	µg/mL	Stressed
12	Dieldrin		1,995.3	µg/mL	+/-	11.7094	µg/mL	Gravimetric
	CAS # 60-57-1.SEC	(Lot 1274700)			+/-	78.0509	µg/mL	Unstressed
	Purity 98%				+/-	123.8591	µg/mL	Stressed
13	Endrin		2,000.0	µg/mL	+/-	11.7371	µg/mL	Gravimetric
	CAS # 72-20-8 *	(Lot LC06045V)			+/-	78.2355	µg/mL	Unstressed
	Purity 99%				+/-	124.1521	µg/mL	Stressed
14	4,4'-DDD		2,009.0	µg/mL	+/-	11.7899	µg/mL	Gravimetric
	CAS # 72-54-8.SEC	(Lot 1141700)			+/-	78.5876	µg/mL	Unstressed
	Purity 98%				+/-	124.7108	µg/mL	Stressed
15	Endosulfan II		2,010.0	µg/mL	+/-	11.7958	µg/mL	Gravimetric
	CAS # 33213-65-9.SEC	(Lot 3437500)			+/-	78.6267	µg/mL	Unstressed
	Purity 99%				+/-	124.7729	µg/mL	Stressed
16	4,4'-DDT		2,016.5	µg/mL	+/-	11.8340	µg/mL	Gravimetric
	CAS # 50-29-3.SEC	(Lot 3478000)			+/-	78.8809	µg/mL	Unstressed
	Purity 99%				+/-	125.1764	µg/mL	Stressed
17	Endrin aldehyde		2,016.4	µg/mL	+/-	11.8331	µg/mL	Gravimetric
	CAS # 7421-93-4.SEC	(Lot 21752)			+/-	78.8751	µg/mL	Unstressed
	Purity 98%				+/-	125.1671	µg/mL	Stressed
18	Methoxychlor		2,007.0	µg/mL	+/-	11.7782	µg/mL	Gravimetric
	CAS # 72-43-5.SEC	(Lot LC09014V)			+/-	78.5093	µg/mL	Unstressed
	Purity 99%				+/-	124.5867	µg/mL	Stressed
19	Endosulfan sulfate		2,007.5	µg/mL	+/-	11.7813	µg/mL	Gravimetric
	CAS # 1031-07-8.SEC	(Lot 1888900)			+/-	78.5301	µg/mL	Unstressed
	Purity 98%				+/-	124.6196	µg/mL	Stressed
20	Endrin ketone		2,007.5	µg/mL	+/-	11.7813	µg/mL	Gravimetric
	CAS # 53494-70-5.SEC	(Lot 091307RD)			+/-	78.5301	µg/mL	Unstressed
	Purity 98%				+/-	124.6196	µg/mL	Stressed

Solvent: Hexane/Toluene (50:50)
CAS # 110-54-3/108-88-3
Purity 99%

*** Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.**

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11823)

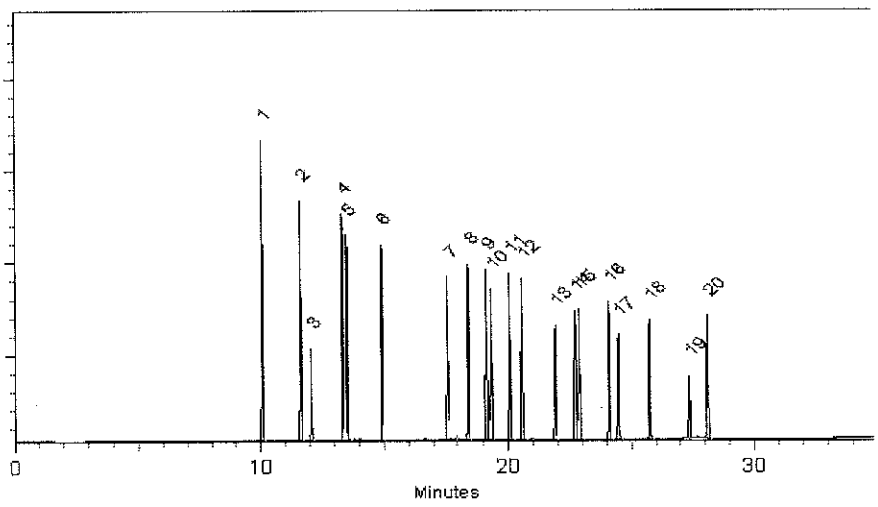
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
150°C to 300°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Lane Kibe - Mix Technician

Date Mixed: 04-Feb-2015 **Balance:** B345965662

Diane Shaffer - QAAnalyst

Date Passed: 12-Feb-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

GCPestTA_00082

R: 9/08/2016

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32415 **Lot No.:** A0114872

Description : Organochlorine Pesticide Mix AB #3

Organochlorine Pesticide Mix AB #3 2,000 µg/mL, Hexane/Toluene (50:50), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2019 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)		
1	alpha-BHC **CAS #** 319-84-6 **Purity** 99%	(Lot 0911942)	2,001.5 µg/mL	+/- 11.7459 µg/mL +/- 91.1668 µg/mL +/- 131.6325 µg/mL		Gravimetric Unstressed Stressed
2	gamma-BHC (Lindane) **CAS #** 58-89-9 **Purity** 99%	(Lot 3895100)	2,002.5 µg/mL	+/- 11.7518 µg/mL +/- 91.2123 µg/mL +/- 131.6982 µg/mL		Gravimetric Unstressed Stressed
3	beta-BHC **CAS #** 319-85-7 **Purity** 98%	(Lot SZBD116XV)	2,011.0 µg/mL	+/- 11.8014 µg/mL +/- 91.5977 µg/mL +/- 132.2546 µg/mL		Gravimetric Unstressed Stressed
4	delta-BHC **CAS #** 319-86-8 **Purity** 98%	(Lot ER02101401)	2,011.9 µg/mL	+/- 11.8072 µg/mL +/- 91.6423 µg/mL +/- 132.3191 µg/mL		Gravimetric Unstressed Stressed
5	Heptachlor **CAS #** 76-44-8 **Purity** 99%	(Lot NT051244)	2,007.5 µg/mL	+/- 11.7811 µg/mL +/- 91.4401 µg/mL +/- 132.0271 µg/mL		Gravimetric Unstressed Stressed
6	Aldrin **CAS #** 309-00-2 **Purity** 99%	(Lot 4240100)	2,006.5 µg/mL	+/- 11.7753 µg/mL +/- 91.3945 µg/mL +/- 131.9613 µg/mL		Gravimetric Unstressed Stressed
7	Heptachlor epoxide (isomer B) **CAS #** 1024-57-3 **Purity** 99%	(Lot ER121511-01)	2,005.5 µg/mL	+/- 11.7694 µg/mL +/- 91.3490 µg/mL +/- 131.8955 µg/mL		Gravimetric Unstressed Stressed

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

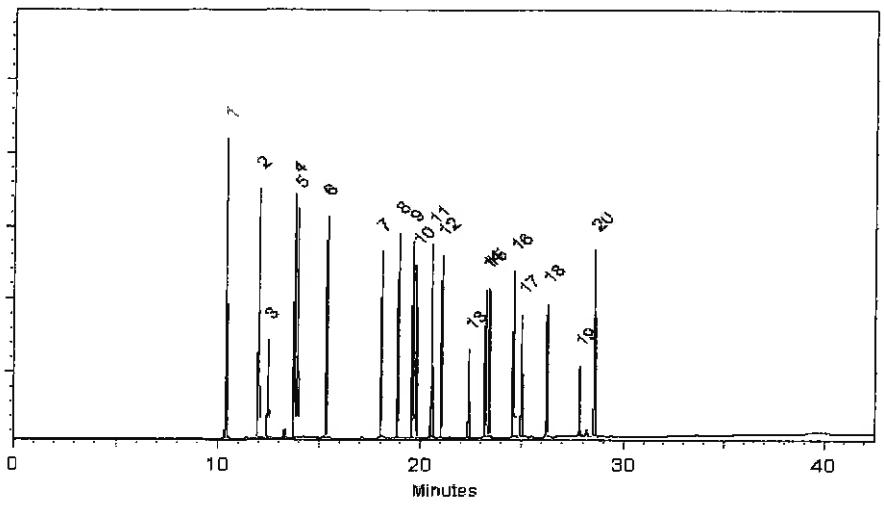
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
150°C to 300°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Connor Flannery - Mix Technician

Date Mixed: 21-Oct-2015 **Balance:** B442140311

Jennifer L. Pollino - QC Analyst

Date Passed: 23-Oct-2015

Manufactured under Restek's ISO 9001:2008
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Certificate #FM 80397

Reagent

GCTOXTA_00050

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32071 **Lot No.:** A0110607

Description : Toxaphene Standard

Toxaphene Standard 5,000 µg/mL, Isooctane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2019 **Storage:** 10°C or colder

Rec'd 12/2/15

2 of 2

UFB

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Toxaphene	5,034.0 µg/mL	+/- 29.5423	µg/mL	Gravimetric
	CAS # 8001-35-2 (Lot RM07246)		+/- 156.6699	µg/mL	Unstressed
	Purity ----%		+/- 208.4033	µg/mL	Stressed

Solvent: Isooctane
CAS # 540-84-1
Purity 99%

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

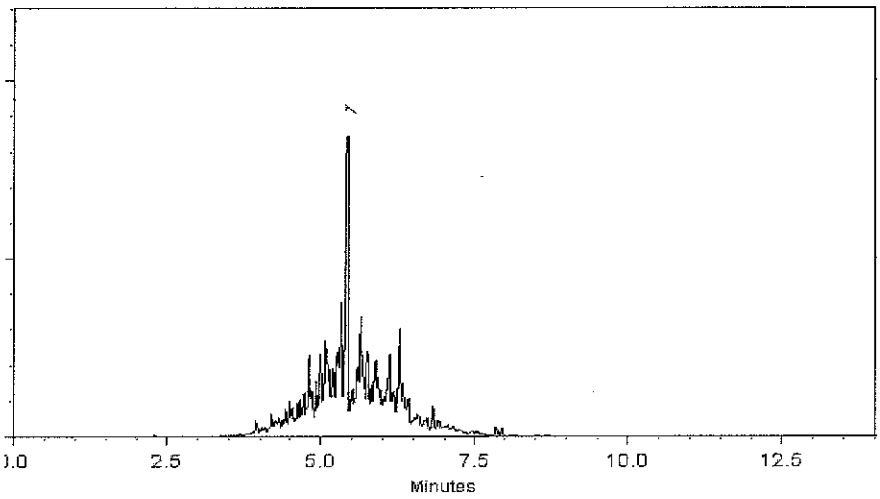
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 21-Apr-2015 **Balance:** 1125113331

Jennifer L. Pollino - QC Analyst

Date Passed: 29-Apr-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

GCTOXTA_00051

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32071-SL **Lot No.:** A0107659

Description : Toxaphene Standard

Toxaphene Standard 5,000 µg/mL, Isooctane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Toxaphene	5,030.0 µg/mL	+/- 29.5189	µg/mL	Gravimetric
	CAS # 8001-35-2 (Lot RM06727)		+/- 156.5454	µg/mL	Unstressed
	Purity ----%		+/- 208.2377	µg/mL	Stressed

Solvent: Isooctane
CAS # 540-84-1
Purity 99%

rec'd 3/9/15
UPS
lot 1

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

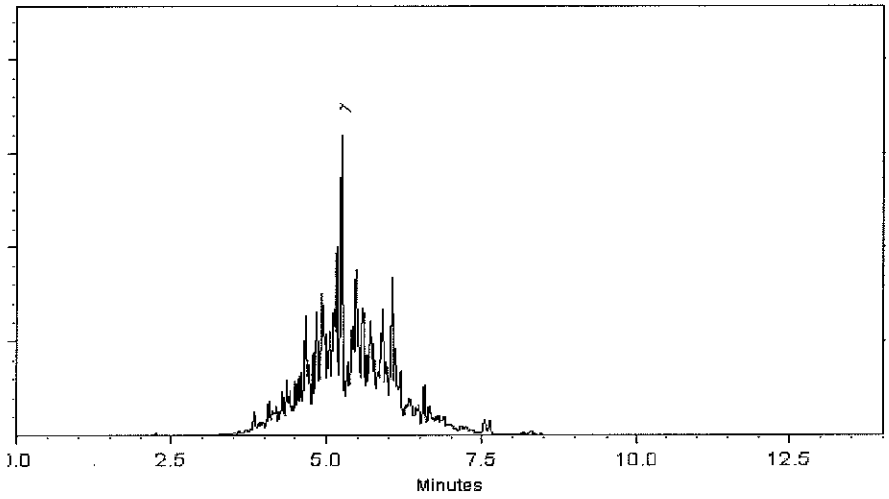
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 09-Dec-2014 **Balance:** 1128360905

Jodi E. Breon - QA Analyst

Date Passed: 12-Dec-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

GCTOXTA_00052

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Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32071 **Lot No.:** A0110607

Description : Toxaphene Standard

Toxaphene Standard 5,000 µg/mL, Isooctane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Toxaphene	5,034.0 µg/mL	+/- 29.5423	µg/mL	Gravimetric
	CAS # 8001-35-2 (Lot RM07246)		+/- 156.6699	µg/mL	Unstressed
	Purity ----%		+/- 208.4033	µg/mL	Stressed

Solvent: Isooctane
CAS # 540-84-1
Purity 99%

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

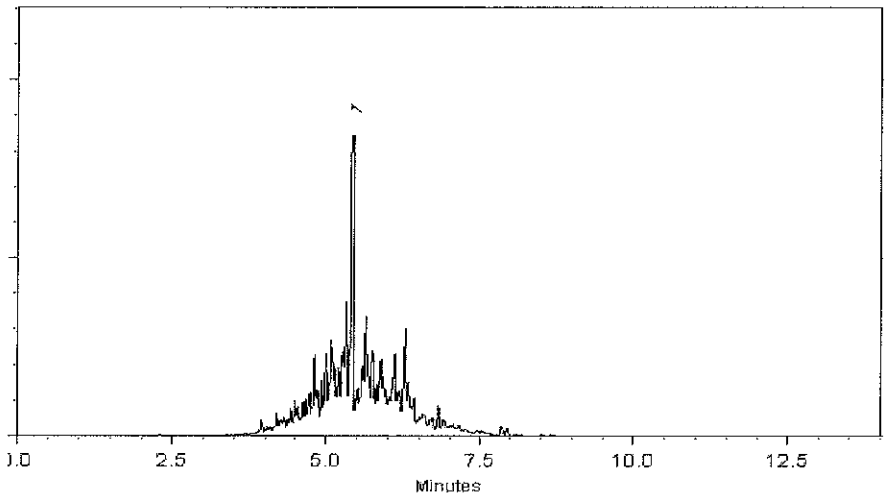
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 21-Apr-2015 **Balance:** 1125113331

Jennifer L. Pollino - QC Analyst

Date Passed: 29-Apr-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

HG7470TA_00012

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS
Christiansburg, VA 24073 - USA

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	MSHG-10PPM
Lot Number:	J2-HG02138
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Hg
Starting Material:	Hg metal
Starting Material Lot#:	1780
Starting Material Purity:	99.9997%

Rec'd 1/8/16 Open 01/12/16 EXP. 01/12/17

566089
ID: HG7470TA_00012
Exp:01/08/17 Prpd:CV1 Opn:01/12/16
HG 10 ug/mL

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.000 ± 0.052 µg/mL

Certified Density: 1.020 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / \{(1/u_{char\ a})^2 + (1/u_{char\ b})^2)\}$

$w_b = (1/u_{char\ b})^2 / \{(1/u_{char\ a})^2 + (1/u_{char\ b})^2)\}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.006542	M	Eu	<	0.000218	O	Na		0.000005	O	Se	<	0.030000	O	Zn	<	0.000400
O	Al	<	0.001000	O	Fe	<	0.000800	M	Nb	<	0.002180	O	Si		0.000006	O	Zr	<	0.001000
M	As	<	0.006542	M	Ga	<	0.000436	M	Nd	<	0.000218	M	Sm	<	0.000218				
M	Au	<	0.004361	M	Gd	<	0.000218	O	Ni	<	0.002000	O	Sn	<	0.002000				
M	B	<	0.004361	M	Ge	<	0.001090	n	Os	<		O	Sr	<	0.000200				
O	Ba	<	0.000260	M	Hf	<	0.006542	O	P	<	0.030000	M	Ta	<	0.001090				
O	Be	<	0.000180	s	Hg	<		M	Pb	<	0.002180	M	Tb	<	0.000218				
M	Bi	<	0.002180	M	Ho	<	0.000218	M	Pd	<	0.008723	M	Te	<	0.010904				
O	Ca		0.000017	M	In	<	0.000218	M	Pr	<	0.000218	M	Th	<	0.000436				
O	Cd	<	0.000500	M	Ir	<	0.000218	M	Pt	<	0.000218	O	Ti	<	0.000600				
M	Ce	<	0.000218	O	K		0.000003	M	Rb	<	0.000218	O	Tl	<	0.010000				
M	Co	<	0.000436	M	La	<	0.000218	M	Re	<	0.000218	M	Tm	<	0.000218				
O	Cr	<	0.002000	O	Li	<	0.000040	M	Rh	<	0.000218	M	U	<	0.000218				
M	Cs	<	0.001090	M	Lu	<	0.000218	M	Ru	<	0.000218	O	V	<	0.000550				
M	Cu	<	0.002180	O	Mg		0.000003	O	S	<	0.030000	M	W	<	0.004361				
M	Dy	<	0.000218	O	Mn	<	0.000160	M	Sb	<	0.001090	M	Y	<	0.000218				
M	Er	<	0.000218	O	Mo	<	0.001500	O	Sc	<	0.000600	M	Yb	<	0.000218				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.
Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10,1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 19, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 19, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

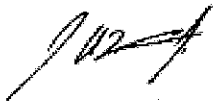
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

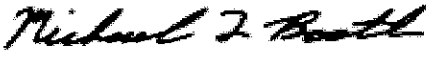
Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

HG7470TA_00013

572315,
ID HG7470TA_00013
Exp:01/12/17 Prpd:CV1 Opn 01/12/2016
HG 10 ug/mL

Certificate of Analysis

Rec'd 1/12/16 open 1/12/16 exp 1/12/17

Product Description:

Name:	Mercury	Source Material:	Mercury Me[redacted]
Part Number:	**S1-Hg-10x100**	Material Purity:	99.9998%
Lot Number:	**1535528**	Matrix:	5% (v/v) HNO_3

Certified Value: 10.0 µg/mL ± 0.2 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against SRM 3133 (lot number 061204) by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

Intended Use:

This Certified Reference Material (CRM) is intended for use as a calibration standard for the quantitative determination of mercury, calibration of instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards:**

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

7277 World Communications Dr. | Omaha, NE 68122 USA | Phone: +1.402.991.7800 | Fax: +1.402.991.7799
Email: esi@icpms.com | Web: www.icpms.com

The Calibration Standard is directly traceable to SRM 3100 Series Spectrometric Standard Solutions.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for twelve months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**December 21, 2015**
Shipped Date:	**January 12, 2016**
Expiration Date:	**January 12, 2017**
Certificate Issue Date:	**December 21, 2015**

Quality Information:

Angel Sellers
Quality Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Reagent

MS8270IS_00014

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

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ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Read 10/30/16 pics

Catalog No. : 567684 **Lot No.:** A0112833

Description : 8270 Internal Standard

8270 Internal Standard 2,000µg/mL, Methylene Chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : July 31, 2020 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dichlorobenzene-d4 **CAS #** 3855-82-1 (Lot PR-18488) **Purity** 99%	2,014.8 µg/mL	+/- 11.7142 +/- 89.5186 +/- 98.3528	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Naphthalene-d8 **CAS #** 1146-65-2 (Lot M-1452) **Purity** 99%	2,015.8 µg/mL	+/- 11.7202 +/- 89.5645 +/- 98.4032	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Acenaphthene-d10 **CAS #** 15067-26-2 (Lot PR-21070) **Purity** 97%	2,002.0 µg/mL	+/- 11.6397 +/- 88.9491 +/- 97.7271	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Phenanthrene-d10 **CAS #** 1517-22-2 (Lot PR-23065) **Purity** 99%	2,007.1 µg/mL	+/- 11.6693 +/- 89.1750 +/- 97.9753	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Chrysene-d12 **CAS #** 1719-03-5 (Lot PR-25081) **Purity** 99%	2,013.2 µg/mL	+/- 11.7047 +/- 89.4460 +/- 98.2730	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	Perylene-d12 **CAS #** 1520-96-3 (Lot PR-24113) **Purity** 99%	2,005.4 µg/mL	+/- 11.6598 +/- 89.1024 +/- 97.8955	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

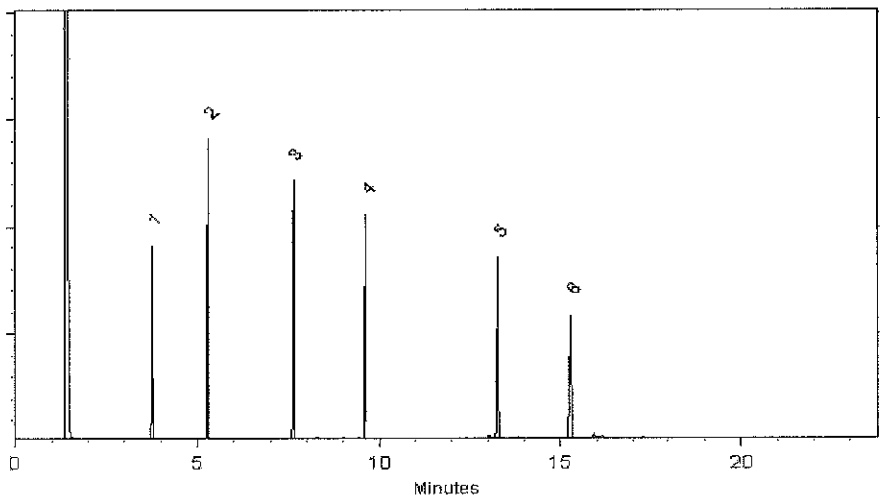
Carrier Gas:
hydrogen-constant pressure 10

Temp. Program:
75°C (hold 1 min.) to
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham
Cheryl Graham - Mix Technician

Date Mixed: 27-Jul-2015 **Balance:** B345965662

Jennifer L Pollino
Jennifer L. Pollino - QC Analyst

Date Passed: 29-Jul-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 570814 **Lot No.:** A0117528

Description : 8270 Surrogate Standard RTS with Indicator

8270 Surrogate Standard RTS with Indicator 100 µg/ml, Methanol/Methylene Chloride (95:5), 100 ml/bottle

Container Size : 100 mL **Pkg Amt:** > 100 mL

Expiration Date : February 28, 2019 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2-Fluorophenol **CAS #** 367-12-4 **Purity** 99%	(Lot STBC5591V)	100.5 µg/mL	+/- 0.5843 +/- 2.9326 +/- 3.5586	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Phenol-d5 **CAS #** 4165-62-2 **Purity** 99%	(Lot X479P8)	100.2 µg/mL	+/- 0.5827 +/- 2.9250 +/- 3.5494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Nitrobenzene-d5 **CAS #** 4165-60-0 **Purity** 99%	(Lot PR-24042)	100.0 µg/mL	+/- 0.5814 +/- 2.9183 +/- 3.5413	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	2-Fluorobiphenyl **CAS #** 321-60-8 **Purity** 99%	(Lot S26B003)	100.0 µg/mL	+/- 0.5815 +/- 2.9186 +/- 3.5416	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	2,4,6-Tribromophenol **CAS #** 118-79-6 **Purity** 99%	(Lot 29699MJV)	100.6 µg/mL	+/- 0.5846 +/- 2.9344 +/- 3.5608	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	p-Terphenyl-d14 **CAS #** 1718-51-0 **Purity** 99%	(Lot PR-21037)	100.0 µg/mL	+/- 0.5814 +/- 2.9183 +/- 3.5413	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methanol/Methylene Chloride (95:5)
CAS # 67-56-1/75-09-2
Purity 99%

Tech Tips:
Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

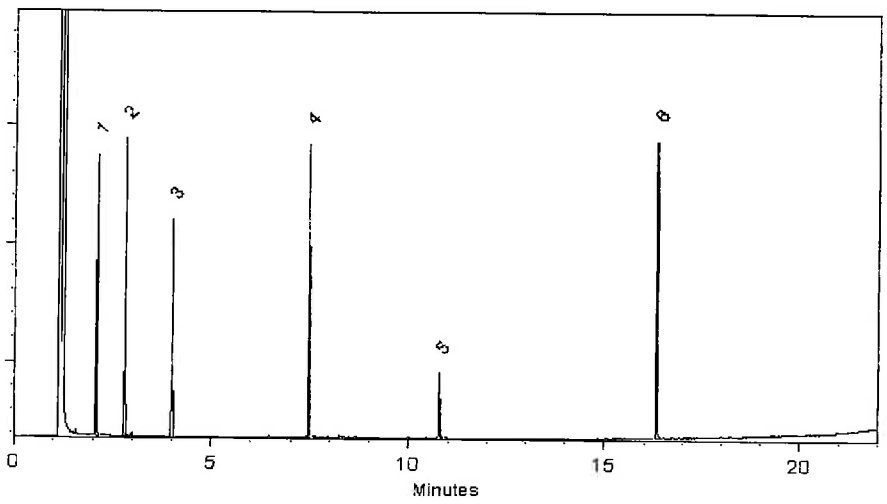
Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 0.86 min.)

Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Cook - Mix Technician

Date Mixed: 23-Feb-2016 **Balance:** B442140311

Amanda Miller - QC Analyst

Date Passed: 26-Feb-2016

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567685 **Lot No.:** A0103615

Description : 8270 Surrogate Standard

8270 Surrogate Standard 5,000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : May 31, 2019 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2-Fluorophenol		5,003.5 µg/mL	+/- 29.0892	µg/mL	Gravimetric
	CAS # 367-12-4	(Lot STBC5591V)		+/- 124.6713	µg/mL	Unstressed
	Purity 99%			+/- 156.7818	µg/mL	Stressed
2	Phenol-d5		5,002.9 µg/mL	+/- 29.0860	µg/mL	Gravimetric
	CAS # 4165-62-2	(Lot M387P4)		+/- 124.6575	µg/mL	Unstressed
	Purity 99%			+/- 156.7644	µg/mL	Stressed
3	Nitrobenzene-d5		5,001.4 µg/mL	+/- 29.0773	µg/mL	Gravimetric
	CAS # 4165-60-0	(Lot PR-20474)		+/- 124.6201	µg/mL	Unstressed
	Purity 99%			+/- 156.7174	µg/mL	Stressed
4	2-Fluorobiphenyl		5,004.4 µg/mL	+/- 29.0947	µg/mL	Gravimetric
	CAS # 321-60-8	(Lot E11Y047)		+/- 124.6949	µg/mL	Unstressed
	Purity 99%			+/- 156.8114	µg/mL	Stressed
5	2,4,6-Tribromophenol		5,003.9 µg/mL	+/- 29.0914	µg/mL	Gravimetric
	CAS # 118-79-6	(Lot 29699MJV)		+/- 124.6805	µg/mL	Unstressed
	Purity 99%			+/- 156.7934	µg/mL	Stressed
6	p-Terphenyl-d14		5,007.1 µg/mL	+/- 29.1100	µg/mL	Gravimetric
	CAS # 1718-51-0	(Lot PR-20577)		+/- 124.7604	µg/mL	Unstressed
	Purity 99%			+/- 156.8938	µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

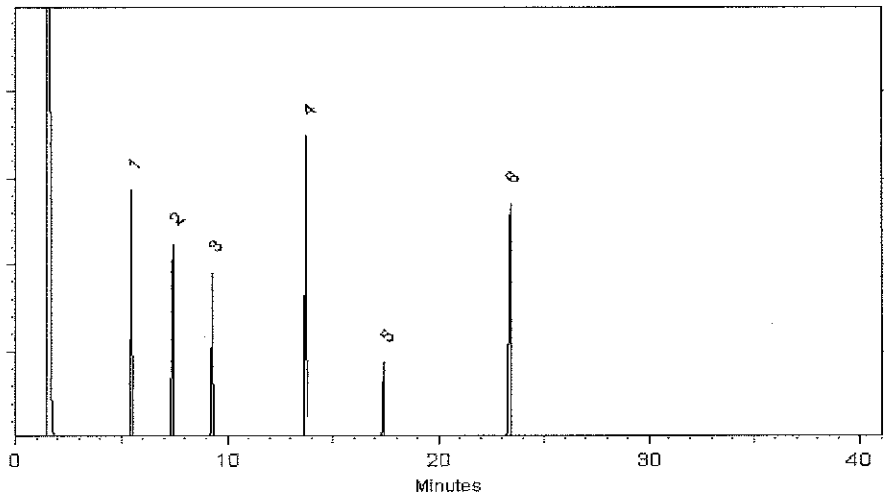
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 27-May-2014 **Balance:** 1128342313

Jennifer L. Pollino - QC Analyst

Date Passed: 23-Jun-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 570666 **Lot No.:** A0114832

Description : 8270 List 1 / Std #1 MegaMix (2016)

8270 List 1 / Std #1 MegaMix (2016) 500-2000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : April 30, 2017 **Storage:** 10°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Dioxane **CAS #** 123-91-1 **Purity** 99%	(Lot SHBG1461V)	1,000.9 µg/mL	+/- 5.8193 +/- 11.9648 +/- 19.0418	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Pyridine **CAS #** 110-86-1 **Purity** 99%	(Lot SHBC7174V)	1,004.7 µg/mL	+/- 5.8416 +/- 12.0106 +/- 19.1148	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	N-Nitrosodimethylamine **CAS #** 62-75-9 **Purity** 99%	(Lot 4370100)	1,002.6 µg/mL	+/- 5.8294 +/- 11.9855 +/- 19.0748	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Aniline **CAS #** 62-53-3 **Purity** 99%	(Lot K22Z462)	1,001.8 µg/mL	+/- 5.8246 +/- 11.9756 +/- 19.0590	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Bis(2-chloroethyl)ether **CAS #** 111-44-4 **Purity** 99%	(Lot SHBD4430V)	1,000.2 µg/mL	+/- 5.8152 +/- 11.9565 +/- 19.0285	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	2-Chlorophenol **CAS #** 95-57-8 **Purity** 99%	(Lot STBF2690V)	1,001.6 µg/mL	+/- 5.8236 +/- 11.9736 +/- 19.0558	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
7	Phenol **CAS #** 108-95-2 **Purity** 99%	(Lot SHBF1351V)	1,000.6 µg/mL	+/- 5.8176 +/- 11.9612 +/- 19.0361	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

8	n-Decane (C10)		1,001.4	µg/mL	+/-	5.8224	µg/mL	Gravimetric
	CAS # 124-18-5	(Lot SHBG1119V)			+/-	11.9712	µg/mL	Unstressed
	Purity 99%				+/-	19.0520	µg/mL	Stressed
9	1,4-Dichlorobenzene		1,000.5	µg/mL	+/-	5.8170	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBS1350V)			+/-	11.9600	µg/mL	Unstressed
	Purity 99%				+/-	19.0342	µg/mL	Stressed
10	1,3-Dichlorobenzene		1,000.1	µg/mL	+/-	5.8145	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBM5751V)			+/-	11.9549	µg/mL	Unstressed
	Purity 99%				+/-	19.0260	µg/mL	Stressed
11	1,2-Dichlorobenzene		1,000.6	µg/mL	+/-	5.8178	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot SHBD7331V)			+/-	11.9616	µg/mL	Unstressed
	Purity 99%				+/-	19.0368	µg/mL	Stressed
12	Benzyl alcohol		1,000.5	µg/mL	+/-	5.8170	µg/mL	Gravimetric
	CAS # 100-51-6	(Lot SHBC1850V)			+/-	11.9600	µg/mL	Unstressed
	Purity 99%				+/-	19.0342	µg/mL	Stressed
13	2,2'-oxybis(1-chloropropane)		1,001.3	µg/mL	+/-	5.8215	µg/mL	Gravimetric
	CAS # 108-60-1	(Lot 2-KMW-57-8)			+/-	11.9692	µg/mL	Unstressed
	Purity 99%				+/-	19.0488	µg/mL	Stressed
14	2-Methylphenol (o-cresol)		1,001.2	µg/mL	+/-	5.8211	µg/mL	Gravimetric
	CAS # 95-48-7	(Lot SHBC1479V)			+/-	11.9684	µg/mL	Unstressed
	Purity 99%				+/-	19.0475	µg/mL	Stressed
15	Hexachloroethane		1,001.7	µg/mL	+/-	5.8238	µg/mL	Gravimetric
	CAS # 67-72-1	(Lot 4H3SF)			+/-	11.9740	µg/mL	Unstressed
	Purity 99%				+/-	19.0564	µg/mL	Stressed
16	Acetophenone		1,000.1	µg/mL	+/-	5.8149	µg/mL	Gravimetric
	CAS # 98-86-2	(Lot MKBR7156V)			+/-	11.9557	µg/mL	Unstressed
	Purity 99%				+/-	19.0272	µg/mL	Stressed
17	N-Nitroso-di-n-propylamine		1,001.5	µg/mL	+/-	5.8226	µg/mL	Gravimetric
	CAS # 621-64-7	(Lot OPAGF)			+/-	11.9716	µg/mL	Unstressed
	Purity 99%				+/-	19.0526	µg/mL	Stressed
18	4-Methylphenol (p-cresol)		500.4	µg/mL	+/-	2.9096	µg/mL	Gravimetric
	CAS # 106-44-5	(Lot 49396APV)			+/-	5.9822	µg/mL	Unstressed
	Purity 99%				+/-	9.5206	µg/mL	Stressed
19	3-Methylphenol (m-cresol)		501.7	µg/mL	+/-	2.9167	µg/mL	Gravimetric
	CAS # 108-39-4	(Lot SHBD0627V)			+/-	5.9970	µg/mL	Unstressed
	Purity 99%				+/-	9.5441	µg/mL	Stressed
20	Nitrobenzene		1,002.1	µg/mL	+/-	5.8265	µg/mL	Gravimetric
	CAS # 98-95-3	(Lot SHBF2348V)			+/-	11.9796	µg/mL	Unstressed
	Purity 99%				+/-	19.0653	µg/mL	Stressed
21	Isophorone		1,002.2	µg/mL	+/-	5.8271	µg/mL	Gravimetric
	CAS # 78-59-1	(Lot MKBG2442V)			+/-	11.9808	µg/mL	Unstressed
	Purity 99%				+/-	19.0672	µg/mL	Stressed
22	2-Nitrophenol		1,000.1	µg/mL	+/-	5.8149	µg/mL	Gravimetric
	CAS # 88-75-5	(Lot BCBH7602V)			+/-	11.9557	µg/mL	Unstressed
	Purity 99%				+/-	19.0272	µg/mL	Stressed
23	2,4-Dimethylphenol		1,000.3	µg/mL	+/-	5.8160	µg/mL	Gravimetric
	CAS # 105-67-9	(Lot 10165155)			+/-	11.9580	µg/mL	Unstressed
	Purity 99%				+/-	19.0311	µg/mL	Stressed

24	Bis(2-chloroethoxy)methane **CAS #** 111-91-1 **Purity** 99%	(Lot 3299900)	1,000.2	µg/mL	+/- 5.8151 +/- 11.9561 +/- 19.0279	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
25	2,4-Dichlorophenol **CAS #** 120-83-2 **Purity** 99%	(Lot BCBH1617V)	1,002.2	µg/mL	+/- 5.8271 +/- 11.9808 +/- 19.0672	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
26	1,2,4-Trichlorobenzene **CAS #** 120-82-1 **Purity** 98%	(Lot SHBC5541V)	1,000.1	µg/mL	+/- 5.8144 +/- 11.9547 +/- 19.0258	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
27	Naphthalene **CAS #** 91-20-3 **Purity** 99%	(Lot MKBH4351V)	1,000.4	µg/mL	+/- 5.8164 +/- 11.9588 +/- 19.0323	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
28	2,6-Dichlorophenol **CAS #** 87-65-0 **Purity** 99%	(Lot MKBN2776V)	1,001.1	µg/mL	+/- 5.8205 +/- 11.9672 +/- 19.0456	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
29	4-Chloroaniline **CAS #** 106-47-8 **Purity** 99%	(Lot 12528PH)	1,000.7	µg/mL	+/- 5.8182 +/- 11.9624 +/- 19.0380	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
30	Hexachlorobutadiene **CAS #** 87-68-3 **Purity** 98%	(Lot J31X013)	1,000.7	µg/mL	+/- 5.8182 +/- 11.9626 +/- 19.0382	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
31	2-Methylnaphthalene **CAS #** 91-57-6 **Purity** 99%	(Lot 19399MJV)	1,001.3	µg/mL	+/- 5.8216 +/- 11.9696 +/- 19.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
32	4-Chloro-3-methylphenol **CAS #** 59-50-7 **Purity** 99%	(Lot STBC0769V)	1,000.2	µg/mL	+/- 5.8151 +/- 11.9561 +/- 19.0279	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
33	1-Methylnaphthalene **CAS #** 90-12-0 **Purity** 99%	(Lot 525000-10)	1,001.1	µg/mL	+/- 5.8203 +/- 11.9668 +/- 19.0450	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
34	1,2,4,5-Tetrachlorobenzene **CAS #** 95-94-3 **Purity** 99%	(Lot 06024AIV)	1,000.1	µg/mL	+/- 5.8145 +/- 11.9549 +/- 19.0260	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
35	Hexachlorocyclopentadiene **CAS #** 77-47-4 **Purity** 97%	(Lot 150909)	999.7	µg/mL	+/- 5.8126 +/- 11.9510 +/- 19.0199	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
36	2,4,6-Trichlorophenol **CAS #** 88-06-2 **Purity** 99%	(Lot MKBH7393V)	1,001.4	µg/mL	+/- 5.8220 +/- 11.9704 +/- 19.0507	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
37	2,4,5-Trichlorophenol **CAS #** 95-95-4 **Purity** 99%	(Lot 150806JLM)	1,000.1	µg/mL	+/- 5.8145 +/- 11.9549 +/- 19.0260	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
38	2-Chloronaphthalene **CAS #** 91-58-7 **Purity** 99%	(Lot AJ2UI-TE)	1,000.9	µg/mL	+/- 5.8193 +/- 11.9648 +/- 19.0418	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
39	Biphenyl **CAS #** 92-52-4 **Purity** 99%	(Lot 1277976)	1,000.6	µg/mL	+/- 5.8178 +/- 11.9616 +/- 19.0368	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

40	4-Nitroaniline		1,000.5	µg/mL	+/-	5.8172	µg/mL	Gravimetric
	CAS # 100-01-6	(Lot BCBG4702V)			+/-	11.9604	µg/mL	Unstressed
	Purity 99%				+/-	19.0349	µg/mL	Stressed
41	Acenaphthylene		999.8	µg/mL	+/-	5.8127	µg/mL	Gravimetric
	CAS # 208-96-8	(Lot W01O)			+/-	11.9512	µg/mL	Unstressed
	Purity 98%				+/-	19.0202	µg/mL	Stressed
42	1,3-Dinitrobenzene		1,000.5	µg/mL	+/-	5.8168	µg/mL	Gravimetric
	CAS # 99-65-0	(Lot BCBB1436V)			+/-	11.9596	µg/mL	Unstressed
	Purity 99%				+/-	19.0336	µg/mL	Stressed
43	Dimethylphthalate		1,001.5	µg/mL	+/-	5.8228	µg/mL	Gravimetric
	CAS # 131-11-3	(Lot 10117699)			+/-	11.9720	µg/mL	Unstressed
	Purity 99%				+/-	19.0532	µg/mL	Stressed
44	2,6-Dinitrotoluene		1,000.2	µg/mL	+/-	5.8152	µg/mL	Gravimetric
	CAS # 606-20-2	(Lot 1437483V)			+/-	11.9565	µg/mL	Unstressed
	Purity 99%				+/-	19.0285	µg/mL	Stressed
45	Acenaphthene		1,001.8	µg/mL	+/-	5.8246	µg/mL	Gravimetric
	CAS # 83-32-9	(Lot MKBP0384V)			+/-	11.9756	µg/mL	Unstressed
	Purity 99%				+/-	19.0590	µg/mL	Stressed
46	2,4-Dinitrophenol		1,999.8	µg/mL	+/-	11.6272	µg/mL	Gravimetric
	CAS # 51-28-5	(Lot STBF1268V)			+/-	23.9061	µg/mL	Unstressed
	Purity 99%				+/-	38.0462	µg/mL	Stressed
47	Dibenzofuran		1,000.7	µg/mL	+/-	5.8180	µg/mL	Gravimetric
	CAS # 132-64-9	(Lot MKBH8392V)			+/-	11.9620	µg/mL	Unstressed
	Purity 99%				+/-	19.0374	µg/mL	Stressed
48	3-Nitroaniline		1,000.8	µg/mL	+/-	5.8185	µg/mL	Gravimetric
	CAS # 99-09-2	(Lot MKBQ6338V)			+/-	11.9632	µg/mL	Unstressed
	Purity 99%				+/-	19.0393	µg/mL	Stressed
49	2,4-Dinitrotoluene		1,001.5	µg/mL	+/-	5.8230	µg/mL	Gravimetric
	CAS # 121-14-2	(Lot MKAA0690V)			+/-	11.9724	µg/mL	Unstressed
	Purity 99%				+/-	19.0539	µg/mL	Stressed
50	4-Nitrophenol		2,000.3	µg/mL	+/-	11.6297	µg/mL	Gravimetric
	CAS # 100-02-7	(Lot MKBP6945V)			+/-	23.9113	µg/mL	Unstressed
	Purity 99%				+/-	38.0545	µg/mL	Stressed
51	2,3,4,6-Tetrachlorophenol		1,000.0	µg/mL	+/-	5.8141	µg/mL	Gravimetric
	CAS # 58-90-2	(Lot B15W0912)			+/-	11.9541	µg/mL	Unstressed
	Purity 99%				+/-	19.0247	µg/mL	Stressed
52	Fluorene		1,000.4	µg/mL	+/-	5.8163	µg/mL	Gravimetric
	CAS # 86-73-7	(Lot 10174662)			+/-	11.9587	µg/mL	Unstressed
	Purity 98%				+/-	19.0320	µg/mL	Stressed
53	4-Chlorophenyl phenyl ether		1,001.0	µg/mL	+/-	5.8201	µg/mL	Gravimetric
	CAS # 7005-72-3	(Lot MKBS2248V)			+/-	11.9664	µg/mL	Unstressed
	Purity 99%				+/-	19.0444	µg/mL	Stressed
54	n-Hexadecane (C16)		1,000.7	µg/mL	+/-	5.8180	µg/mL	Gravimetric
	CAS # 544-76-3	(Lot SHBF6942V)			+/-	11.9620	µg/mL	Unstressed
	Purity 99%				+/-	19.0374	µg/mL	Stressed
55	Diethylphthalate		1,000.9	µg/mL	+/-	5.8193	µg/mL	Gravimetric
	CAS # 84-66-2	(Lot MKBJ3578V)			+/-	11.9648	µg/mL	Unstressed
	Purity 99%				+/-	19.0418	µg/mL	Stressed

56	Azobenzene **CAS #** 103-33-3 **Purity** 99%	(Lot MKBS2559V)	1,001.2	µg/mL	+/- 5.8213 +/- 11.9688 +/- 19.0482	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
57	Diphenylamine **CAS #** 122-39-4 **Purity** 99%	(Lot MKBN8295V)	850.7	µg/mL	+/- 4.9460 +/- 10.1693 +/- 16.1843	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
58	2-Nitroaniline **CAS #** 88-74-4 **Purity** 99%	(Lot MKBK7597V)	1,000.2	µg/mL	+/- 5.8151 +/- 11.9561 +/- 19.0279	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
59	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) **CAS #** 534-52-1 **Purity** 99%	(Lot LC12394V)	2,000.9	µg/mL	+/- 11.6336 +/- 23.9193 +/- 38.0672	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
60	4-Bromophenyl phenyl ether **CAS #** 101-55-3 **Purity** 98%	(Lot STBB9729V)	999.8	µg/mL	+/- 5.8131 +/- 11.9520 +/- 19.0215	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
61	Hexachlorobenzene **CAS #** 118-74-1 **Purity** 99%	(Lot LC10604V)	1,001.6	µg/mL	+/- 5.8234 +/- 11.9732 +/- 19.0551	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
62	Pentachlorophenol **CAS #** 87-86-5 **Purity** 98%	(Lot 150902JLM)	2,000.5	µg/mL	+/- 11.6311 +/- 23.9142 +/- 38.0591	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
63	Phenanthrene **CAS #** 85-01-8 **Purity** 99%	(Lot MKBT8628V)	1,001.9	µg/mL	+/- 5.8249 +/- 11.9764 +/- 19.0602	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
64	n-Octadecane (C18) **CAS #** 593-45-3 **Purity** 99%	(Lot 27SOF)	1,000.8	µg/mL	+/- 5.8187 +/- 11.9636 +/- 19.0399	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
65	Anthracene **CAS #** 120-12-7 **Purity** 99%	(Lot MKBK5208V)	1,001.4	µg/mL	+/- 5.8224 +/- 11.9712 +/- 19.0520	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
66	Carbazole **CAS #** 86-74-8 **Purity** 98%	(Lot 4017900)	1,000.4	µg/mL	+/- 5.8161 +/- 11.9583 +/- 19.0314	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
67	Di-n-butylphthalate **CAS #** 84-74-2 **Purity** 99%	(Lot MKBL8501V)	1,003.6	µg/mL	+/- 5.8348 +/- 11.9967 +/- 19.0926	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
68	Fluoranthene **CAS #** 206-44-0 **Purity** 98%	(Lot MKBQ6360V)	1,000.7	µg/mL	+/- 5.8184 +/- 11.9629 +/- 19.0389	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
69	Pyrene **CAS #** 129-00-0 **Purity** 99%	(Lot BCBL6786V)	1,000.2	µg/mL	+/- 5.8151 +/- 11.9561 +/- 19.0279	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
70	Benzyl butyl phthalate **CAS #** 85-68-7 **Purity** 99%	(Lot 03027HV)	1,000.3	µg/mL	+/- 5.8158 +/- 11.9576 +/- 19.0304	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
71	Benz(a)anthracene **CAS #** 56-55-3 **Purity** 99%	(Lot ER031412-01)	1,000.1	µg/mL	+/- 5.8147 +/- 11.9553 +/- 19.0266	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

72	Chrysene		1,000.0	µg/mL	+/-	5.8143	µg/mL	Gravimetric
	CAS # 218-01-9	(Lot PR121912-01)			+/-	11.9545	µg/mL	Unstressed
	Purity 99%				+/-	19.0253	µg/mL	Stressed
73	Bis(2-ethylhexyl)phthalate		1,000.4	µg/mL	+/-	5.8164	µg/mL	Gravimetric
	CAS # 117-81-7	(Lot MKBK2695V)			+/-	11.9588	µg/mL	Unstressed
	Purity 99%				+/-	19.0323	µg/mL	Stressed
74	Di-n-octyl phthalate		1,004.1	µg/mL	+/-	5.8379	µg/mL	Gravimetric
	CAS # 117-84-0	(Lot 3998900)			+/-	12.0031	µg/mL	Unstressed
	Purity 99%				+/-	19.1027	µg/mL	Stressed
75	Benzo(b)fluoranthene		1,002.0	µg/mL	+/-	5.8257	µg/mL	Gravimetric
	CAS # 205-99-2	(Lot ER03101401)			+/-	11.9780	µg/mL	Unstressed
	Purity 99%				+/-	19.0628	µg/mL	Stressed
76	Benzo(k)fluoranthene		1,000.1	µg/mL	+/-	5.8149	µg/mL	Gravimetric
	CAS # 207-08-9	(Lot 012012K)			+/-	11.9557	µg/mL	Unstressed
	Purity 99%				+/-	19.0272	µg/mL	Stressed
77	Benzo(a)pyrene		1,000.3	µg/mL	+/-	5.8160	µg/mL	Gravimetric
	CAS # 50-32-8	(Lot ER071309-02)			+/-	11.9580	µg/mL	Unstressed
	Purity 99%				+/-	19.0311	µg/mL	Stressed
78	Indeno(1,2,3-cd)pyrene		1,000.8	µg/mL	+/-	5.8189	µg/mL	Gravimetric
	CAS # 193-39-5	(Lot ER082107-02)			+/-	11.9640	µg/mL	Unstressed
	Purity 99%				+/-	19.0406	µg/mL	Stressed
79	Dibenz(a,h)anthracene		1,001.9	µg/mL	+/-	5.8251	µg/mL	Gravimetric
	CAS # 53-70-3	(Lot ER032211-01)			+/-	11.9768	µg/mL	Unstressed
	Purity 99%				+/-	19.0609	µg/mL	Stressed
80	Benzo(g,h,i)perylene		1,000.8	µg/mL	+/-	5.8185	µg/mL	Gravimetric
	CAS # 191-24-2	(Lot ER05121401)			+/-	11.9632	µg/mL	Unstressed
	Purity 99%				+/-	19.0393	µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

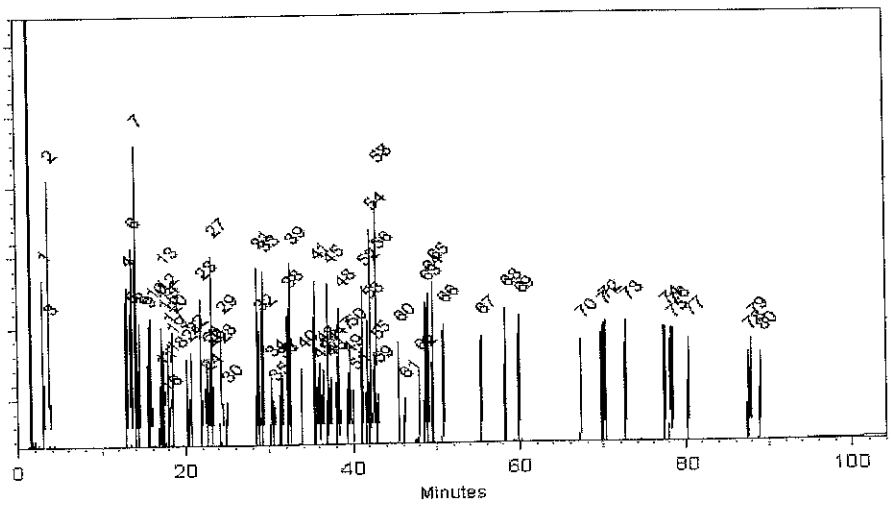
Carrier Gas:
hydrogen-constant pressure 10 psi

Temp. Program:
35°C (hold 3 min.) to 330°C
@ 3°C/min. (hold 3 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kendra Swope - Mix Technician

Date Mixed: 20-Oct-2015 **Balance:** B442140311

Jodi E. Breon - QA Analyst

Date Passed: 04-Nov-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

MS8270TA_00085

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569730 **Lot No.:** A0112567

Description : 8270 List 1 / Std #9

8270 List 1 / Std #9 2,000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2017 **Storage:** 10°C or colder

Handling: Contains carcinogen/reproductive toxin.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Benzidine **CAS #** 92-87-5 **Purity** 99%	(Lot 150701JLMB)	2,001.0 µg/mL	+/- 11.6337 +/- 21.9078 +/- 37.1592	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	3,3'-Dichlorobenzidine **CAS #** 91-94-1 **Purity** 99%	(Lot 150701JLMA)	2,001.5 µg/mL	+/- 11.6369 +/- 21.9138 +/- 37.1694	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

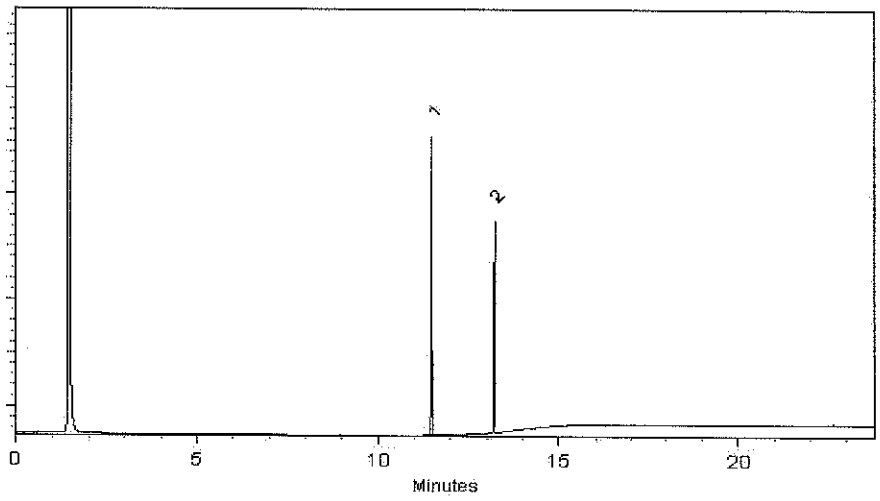
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kendra Swope - Mix Technician

Date Mixed: 15-Jul-2015 **Balance:** 1122030677

Jennifer L. Pollino - QC Analyst

Date Passed: 17-Jul-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MS8270TA_00086

P: 6/30/16 AM

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569731 **Lot No.:** A0115596

Description : 8270 List 1 / Std #10

8270 List 1 / Std #10 2,000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : May 31, 2017 **Storage:** 10°C or colder

Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)		
1	Indene		2,009.8 µg/mL	+/- 11.6852	µg/mL	Gravimetric
	CAS # 95-13-6	(Lot MKBP3098V)		+/- 112.6875	µg/mL	Unstressed
	Purity 99%			+/- 115.3242	µg/mL	Stressed
2	Benzoic acid		2,011.6 µg/mL	+/- 11.6953	µg/mL	Gravimetric
	CAS # 65-85-0	(Lot MKBL6689V)		+/- 112.7856	µg/mL	Unstressed
	Purity 99%			+/- 115.4247	µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569732 **Lot No.:** A0115387

Rec'd 1/22/16

Description : 8270 List 1 / Std #11

8270 List 1 / Std #11 2,000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : May 31, 2017 **Storage:** 10°C or colder

Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Benzaldehyde **CAS #** 100-52-7 **Purity** 99%	(Lot SHBD3510V)	2,017.4 µg/mL	+/- 11.7290 µg/mL +/- 64.6675 µg/mL +/- 75.1734 µg/mL		Gravimetric Unstressed Stressed
2	epsilon-Caprolactam **CAS #** 105-60-2 **Purity** 99%	(Lot I16X016)	2,012.4 µg/mL	+/- 11.7003 µg/mL +/- 64.5088 µg/mL +/- 74.9890 µg/mL		Gravimetric Unstressed Stressed
3	Atrazine **CAS #** 1912-24-9 **Purity** 98%	(Lot TZ8ED)	2,003.5 µg/mL	+/- 11.6483 µg/mL +/- 64.2223 µg/mL +/- 74.6560 µg/mL		Gravimetric Unstressed Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

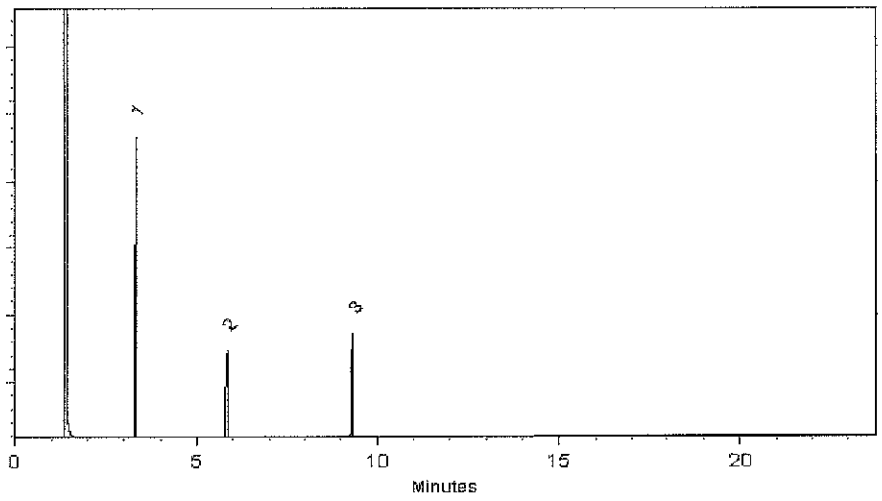
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 12-Nov-2015 **Balance:** B442140311

Jodi E. Breon - QA Analyst

Date Passed: 13-Nov-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Rec'd 4/22/16

Catalog No. : 569731 **Lot No.:** A0115596

Description : 8270 List 1 / Std #10

8270 List 1 / Std #10 2,000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : May 31, 2017 **Storage:** 10°C or colder

Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Indene	2,009.8 µg/mL	+/- 11.6852 µg/mL	Gravimetric
	CAS # 95-13-6 (Lot MKBP3098V)		+/- 112.6875 µg/mL	Unstressed
	Purity 99%		+/- 115.3242 µg/mL	Stressed
2	Benzoic acid	2,011.6 µg/mL	+/- 11.6953 µg/mL	Gravimetric
	CAS # 65-85-0 (Lot MKBL6689V)		+/- 112.7856 µg/mL	Unstressed
	Purity 99%		+/- 115.4247 µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

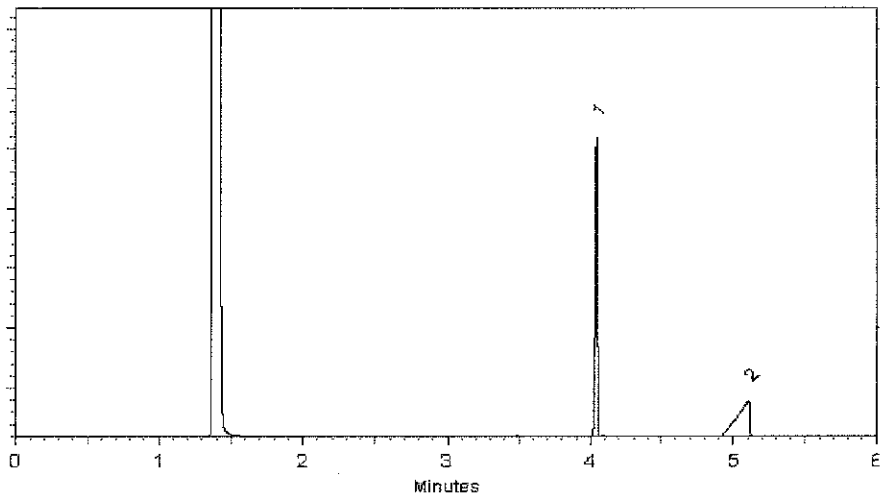
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham

Cheryl Graham - Mix Technician

Date Mixed: 23-Nov-2015 **Balance:** 1128360905

Jodi E. Breon

Jodi E. Breon - QA Analyst

Date Passed: 25-Nov-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

MSL1S10SS_00005

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569731.SEC **Lot No.:** A0110820

Rec'd 1/22/16

Description : 8270 List 1 / Std #10

8270 List 1 / Std #10 2,000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : October 31, 2016 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Indene	2,008.0 µg/mL	+/- 11.7841 µg/mL	Gravimetric
	CAS # 95-13-6.SEC (Lot IG5TI)		+/- 22.6997 µg/mL	Unstressed
	Purity 99%		+/- 26.1048 µg/mL	Stressed
2	Benzoic acid	2,011.8 µg/mL	+/- 11.8063 µg/mL	Gravimetric
	CAS # 65-85-0.SEC (Lot QD3UO)		+/- 22.7424 µg/mL	Unstressed
	Purity 97%		+/- 26.1540 µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

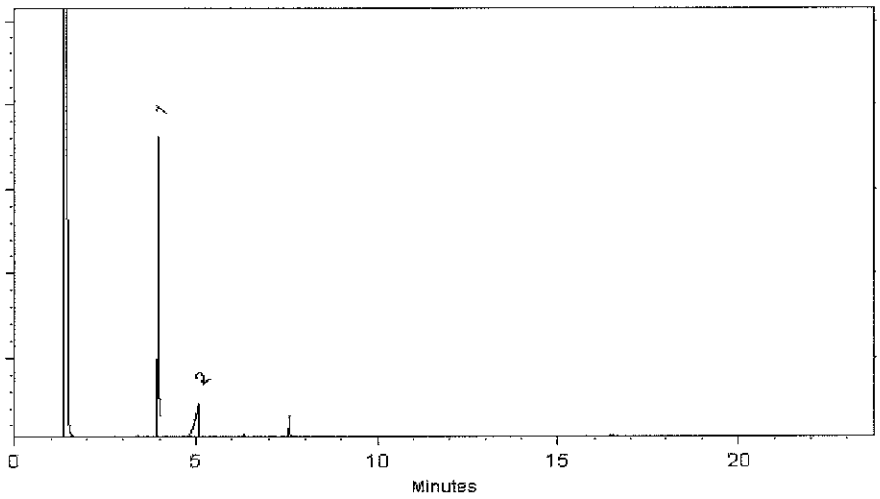
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Reish - Mix Technician

Date Mixed: 29-Apr-2015 **Balance:** 1128353505

Jennifer L. Pollino - QC Analyst

Date Passed: 01-May-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

MSL1S1PS_00015

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Bellefonte, PA 16823-8812
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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 570666 **Lot No.:** A0114832

Description : 8270 List 1 / Std #1 MegaMix (2016)

8270 List 1 / Std #1 MegaMix (2016) 500-2000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : April 30, 2017 **Storage:** 10°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dioxane	1,000.9 µg/mL	+/- 5.8193 µg/mL	Gravimetric
	CAS # 123-91-1 (Lot SHBG1461V)		+/- 11.9648 µg/mL	Unstressed
	Purity 99%		+/- 19.0418 µg/mL	Stressed
2	Pyridine	1,004.7 µg/mL	+/- 5.8416 µg/mL	Gravimetric
	CAS # 110-86-1 (Lot SHBC7174V)		+/- 12.0106 µg/mL	Unstressed
	Purity 99%		+/- 19.1148 µg/mL	Stressed
3	N-Nitrosodimethylamine	1,002.6 µg/mL	+/- 5.8294 µg/mL	Gravimetric
	CAS # 62-75-9 (Lot 4370100)		+/- 11.9855 µg/mL	Unstressed
	Purity 99%		+/- 19.0748 µg/mL	Stressed
4	Aniline	1,001.8 µg/mL	+/- 5.8246 µg/mL	Gravimetric
	CAS # 62-53-3 (Lot K22Z462)		+/- 11.9756 µg/mL	Unstressed
	Purity 99%		+/- 19.0590 µg/mL	Stressed
5	Bis(2-chloroethyl)ether	1,000.2 µg/mL	+/- 5.8152 µg/mL	Gravimetric
	CAS # 111-44-4 (Lot SHBD4430V)		+/- 11.9565 µg/mL	Unstressed
	Purity 99%		+/- 19.0285 µg/mL	Stressed
6	2-Chlorophenol	1,001.6 µg/mL	+/- 5.8236 µg/mL	Gravimetric
	CAS # 95-57-8 (Lot STBF2690V)		+/- 11.9736 µg/mL	Unstressed
	Purity 99%		+/- 19.0558 µg/mL	Stressed
7	Phenol	1,000.6 µg/mL	+/- 5.8176 µg/mL	Gravimetric
	CAS # 108-95-2 (Lot SHBF1351V)		+/- 11.9612 µg/mL	Unstressed
	Purity 99%		+/- 19.0361 µg/mL	Stressed

8	n-Decane (C10)		1,001.4	µg/mL	+/-	5.8224	µg/mL	Gravimetric
	CAS # 124-18-5	(Lot SHBG1119V)			+/-	11.9712	µg/mL	Unstressed
	Purity 99%				+/-	19.0520	µg/mL	Stressed
9	1,4-Dichlorobenzene		1,000.5	µg/mL	+/-	5.8170	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBS1350V)			+/-	11.9600	µg/mL	Unstressed
	Purity 99%				+/-	19.0342	µg/mL	Stressed
10	1,3-Dichlorobenzene		1,000.1	µg/mL	+/-	5.8145	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBM5751V)			+/-	11.9549	µg/mL	Unstressed
	Purity 99%				+/-	19.0260	µg/mL	Stressed
11	1,2-Dichlorobenzene		1,000.6	µg/mL	+/-	5.8178	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot SHBD7331V)			+/-	11.9616	µg/mL	Unstressed
	Purity 99%				+/-	19.0368	µg/mL	Stressed
12	Benzyl alcohol		1,000.5	µg/mL	+/-	5.8170	µg/mL	Gravimetric
	CAS # 100-51-6	(Lot SHBC1850V)			+/-	11.9600	µg/mL	Unstressed
	Purity 99%				+/-	19.0342	µg/mL	Stressed
13	2,2'-oxybis(1-chloropropane)		1,001.3	µg/mL	+/-	5.8215	µg/mL	Gravimetric
	CAS # 108-60-1	(Lot 2-KMW-57-8)			+/-	11.9692	µg/mL	Unstressed
	Purity 99%				+/-	19.0488	µg/mL	Stressed
14	2-Methylphenol (o-cresol)		1,001.2	µg/mL	+/-	5.8211	µg/mL	Gravimetric
	CAS # 95-48-7	(Lot SHBC1479V)			+/-	11.9684	µg/mL	Unstressed
	Purity 99%				+/-	19.0475	µg/mL	Stressed
15	Hexachloroethane		1,001.7	µg/mL	+/-	5.8238	µg/mL	Gravimetric
	CAS # 67-72-1	(Lot 4H3SF)			+/-	11.9740	µg/mL	Unstressed
	Purity 99%				+/-	19.0564	µg/mL	Stressed
16	Acetophenone		1,000.1	µg/mL	+/-	5.8149	µg/mL	Gravimetric
	CAS # 98-86-2	(Lot MKBR7156V)			+/-	11.9557	µg/mL	Unstressed
	Purity 99%				+/-	19.0272	µg/mL	Stressed
17	N-Nitroso-di-n-propylamine		1,001.5	µg/mL	+/-	5.8226	µg/mL	Gravimetric
	CAS # 621-64-7	(Lot OPAGF)			+/-	11.9716	µg/mL	Unstressed
	Purity 99%				+/-	19.0526	µg/mL	Stressed
18	4-Methylphenol (p-cresol)		500.4	µg/mL	+/-	2.9096	µg/mL	Gravimetric
	CAS # 106-44-5	(Lot 49396APV)			+/-	5.9822	µg/mL	Unstressed
	Purity 99%				+/-	9.5206	µg/mL	Stressed
19	3-Methylphenol (m-cresol)		501.7	µg/mL	+/-	2.9167	µg/mL	Gravimetric
	CAS # 108-39-4	(Lot SHBD0627V)			+/-	5.9970	µg/mL	Unstressed
	Purity 99%				+/-	9.5441	µg/mL	Stressed
20	Nitrobenzene		1,002.1	µg/mL	+/-	5.8265	µg/mL	Gravimetric
	CAS # 98-95-3	(Lot SHBF2348V)			+/-	11.9796	µg/mL	Unstressed
	Purity 99%				+/-	19.0653	µg/mL	Stressed
21	Isophorone		1,002.2	µg/mL	+/-	5.8271	µg/mL	Gravimetric
	CAS # 78-59-1	(Lot MKBG2442V)			+/-	11.9808	µg/mL	Unstressed
	Purity 99%				+/-	19.0672	µg/mL	Stressed
22	2-Nitrophenol		1,000.1	µg/mL	+/-	5.8149	µg/mL	Gravimetric
	CAS # 88-75-5	(Lot BCBH7602V)			+/-	11.9557	µg/mL	Unstressed
	Purity 99%				+/-	19.0272	µg/mL	Stressed
23	2,4-Dimethylphenol		1,000.3	µg/mL	+/-	5.8160	µg/mL	Gravimetric
	CAS # 105-67-9	(Lot 10165155)			+/-	11.9580	µg/mL	Unstressed
	Purity 99%				+/-	19.0311	µg/mL	Stressed

24	Bis(2-chloroethoxy)methane		1,000.2	µg/mL	+/-	5.8151	µg/mL	Gravimetric
	CAS # 111-91-1	(Lot 3299900)			+/-	11.9561	µg/mL	Unstressed
	Purity 99%				+/-	19.0279	µg/mL	Stressed
25	2,4-Dichlorophenol		1,002.2	µg/mL	+/-	5.8271	µg/mL	Gravimetric
	CAS # 120-83-2	(Lot BCBH1617V)			+/-	11.9808	µg/mL	Unstressed
	Purity 99%				+/-	19.0672	µg/mL	Stressed
26	1,2,4-Trichlorobenzene		1,000.1	µg/mL	+/-	5.8144	µg/mL	Gravimetric
	CAS # 120-82-1	(Lot SHBC5541V)			+/-	11.9547	µg/mL	Unstressed
	Purity 98%				+/-	19.0258	µg/mL	Stressed
27	Naphthalene		1,000.4	µg/mL	+/-	5.8164	µg/mL	Gravimetric
	CAS # 91-20-3	(Lot MKBH4351V)			+/-	11.9588	µg/mL	Unstressed
	Purity 99%				+/-	19.0323	µg/mL	Stressed
28	2,6-Dichlorophenol		1,001.1	µg/mL	+/-	5.8205	µg/mL	Gravimetric
	CAS # 87-65-0	(Lot MKBN2776V)			+/-	11.9672	µg/mL	Unstressed
	Purity 99%				+/-	19.0456	µg/mL	Stressed
29	4-Chloroaniline		1,000.7	µg/mL	+/-	5.8182	µg/mL	Gravimetric
	CAS # 106-47-8	(Lot 12528PH)			+/-	11.9624	µg/mL	Unstressed
	Purity 99%				+/-	19.0380	µg/mL	Stressed
30	Hexachlorobutadiene		1,000.7	µg/mL	+/-	5.8182	µg/mL	Gravimetric
	CAS # 87-68-3	(Lot J31X013)			+/-	11.9626	µg/mL	Unstressed
	Purity 98%				+/-	19.0382	µg/mL	Stressed
31	2-Methylnaphthalene		1,001.3	µg/mL	+/-	5.8216	µg/mL	Gravimetric
	CAS # 91-57-6	(Lot 19399MJV)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0494	µg/mL	Stressed
32	4-Chloro-3-methylphenol		1,000.2	µg/mL	+/-	5.8151	µg/mL	Gravimetric
	CAS # 59-50-7	(Lot STBC0769V)			+/-	11.9561	µg/mL	Unstressed
	Purity 99%				+/-	19.0279	µg/mL	Stressed
33	1-Methylnaphthalene		1,001.1	µg/mL	+/-	5.8203	µg/mL	Gravimetric
	CAS # 90-12-0	(Lot 525000-10)			+/-	11.9668	µg/mL	Unstressed
	Purity 99%				+/-	19.0450	µg/mL	Stressed
34	1,2,4,5-Tetrachlorobenzene		1,000.1	µg/mL	+/-	5.8145	µg/mL	Gravimetric
	CAS # 95-94-3	(Lot 06024AIV)			+/-	11.9549	µg/mL	Unstressed
	Purity 99%				+/-	19.0260	µg/mL	Stressed
35	Hexachlorocyclopentadiene		999.7	µg/mL	+/-	5.8126	µg/mL	Gravimetric
	CAS # 77-47-4	(Lot 150909)			+/-	11.9510	µg/mL	Unstressed
	Purity 97%				+/-	19.0199	µg/mL	Stressed
36	2,4,6-Trichlorophenol		1,001.4	µg/mL	+/-	5.8220	µg/mL	Gravimetric
	CAS # 88-06-2	(Lot MKBH7393V)			+/-	11.9704	µg/mL	Unstressed
	Purity 99%				+/-	19.0507	µg/mL	Stressed
37	2,4,5-Trichlorophenol		1,000.1	µg/mL	+/-	5.8145	µg/mL	Gravimetric
	CAS # 95-95-4	(Lot 150806JLM)			+/-	11.9549	µg/mL	Unstressed
	Purity 99%				+/-	19.0260	µg/mL	Stressed
38	2-Chloronaphthalene		1,000.9	µg/mL	+/-	5.8193	µg/mL	Gravimetric
	CAS # 91-58-7	(Lot AJ2UI-TE)			+/-	11.9648	µg/mL	Unstressed
	Purity 99%				+/-	19.0418	µg/mL	Stressed
39	Biphenyl		1,000.6	µg/mL	+/-	5.8178	µg/mL	Gravimetric
	CAS # 92-52-4	(Lot 1277976)			+/-	11.9616	µg/mL	Unstressed
	Purity 99%				+/-	19.0368	µg/mL	Stressed

40	4-Nitroaniline		1,000.5	µg/mL	+/-	5.8172	µg/mL	Gravimetric
	CAS # 100-01-6	(Lot BCBG4702V)			+/-	11.9604	µg/mL	Unstressed
	Purity 99%				+/-	19.0349	µg/mL	Stressed
41	Acenaphthylene		999.8	µg/mL	+/-	5.8127	µg/mL	Gravimetric
	CAS # 208-96-8	(Lot W01O)			+/-	11.9512	µg/mL	Unstressed
	Purity 98%				+/-	19.0202	µg/mL	Stressed
42	1,3-Dinitrobenzene		1,000.5	µg/mL	+/-	5.8168	µg/mL	Gravimetric
	CAS # 99-65-0	(Lot BCBB1436V)			+/-	11.9596	µg/mL	Unstressed
	Purity 99%				+/-	19.0336	µg/mL	Stressed
43	Dimethylphthalate		1,001.5	µg/mL	+/-	5.8228	µg/mL	Gravimetric
	CAS # 131-11-3	(Lot 10117699)			+/-	11.9720	µg/mL	Unstressed
	Purity 99%				+/-	19.0532	µg/mL	Stressed
44	2,6-Dinitrotoluene		1,000.2	µg/mL	+/-	5.8152	µg/mL	Gravimetric
	CAS # 606-20-2	(Lot 1437483V)			+/-	11.9565	µg/mL	Unstressed
	Purity 99%				+/-	19.0285	µg/mL	Stressed
45	Acenaphthene		1,001.8	µg/mL	+/-	5.8246	µg/mL	Gravimetric
	CAS # 83-32-9	(Lot MKBP0384V)			+/-	11.9756	µg/mL	Unstressed
	Purity 99%				+/-	19.0590	µg/mL	Stressed
46	2,4-Dinitrophenol		1,999.8	µg/mL	+/-	11.6272	µg/mL	Gravimetric
	CAS # 51-28-5	(Lot STBF1268V)			+/-	23.9061	µg/mL	Unstressed
	Purity 99%				+/-	38.0462	µg/mL	Stressed
47	Dibenzofuran		1,000.7	µg/mL	+/-	5.8180	µg/mL	Gravimetric
	CAS # 132-64-9	(Lot MKBH8392V)			+/-	11.9620	µg/mL	Unstressed
	Purity 99%				+/-	19.0374	µg/mL	Stressed
48	3-Nitroaniline		1,000.8	µg/mL	+/-	5.8185	µg/mL	Gravimetric
	CAS # 99-09-2	(Lot MKBQ6338V)			+/-	11.9632	µg/mL	Unstressed
	Purity 99%				+/-	19.0393	µg/mL	Stressed
49	2,4-Dinitrotoluene		1,001.5	µg/mL	+/-	5.8230	µg/mL	Gravimetric
	CAS # 121-14-2	(Lot MKAA0690V)			+/-	11.9724	µg/mL	Unstressed
	Purity 99%				+/-	19.0539	µg/mL	Stressed
50	4-Nitrophenol		2,000.3	µg/mL	+/-	11.6297	µg/mL	Gravimetric
	CAS # 100-02-7	(Lot MKBP6945V)			+/-	23.9113	µg/mL	Unstressed
	Purity 99%				+/-	38.0545	µg/mL	Stressed
51	2,3,4,6-Tetrachlorophenol		1,000.0	µg/mL	+/-	5.8141	µg/mL	Gravimetric
	CAS # 58-90-2	(Lot B15W0912)			+/-	11.9541	µg/mL	Unstressed
	Purity 99%				+/-	19.0247	µg/mL	Stressed
52	Fluorene		1,000.4	µg/mL	+/-	5.8163	µg/mL	Gravimetric
	CAS # 86-73-7	(Lot 10174662)			+/-	11.9587	µg/mL	Unstressed
	Purity 98%				+/-	19.0320	µg/mL	Stressed
53	4-Chlorophenyl phenyl ether		1,001.0	µg/mL	+/-	5.8201	µg/mL	Gravimetric
	CAS # 7005-72-3	(Lot MKBS2248V)			+/-	11.9664	µg/mL	Unstressed
	Purity 99%				+/-	19.0444	µg/mL	Stressed
54	n-Hexadecane (C16)		1,000.7	µg/mL	+/-	5.8180	µg/mL	Gravimetric
	CAS # 544-76-3	(Lot SHBF6942V)			+/-	11.9620	µg/mL	Unstressed
	Purity 99%				+/-	19.0374	µg/mL	Stressed
55	Diethylphthalate		1,000.9	µg/mL	+/-	5.8193	µg/mL	Gravimetric
	CAS # 84-66-2	(Lot MKBJ3578V)			+/-	11.9648	µg/mL	Unstressed
	Purity 99%				+/-	19.0418	µg/mL	Stressed

56	Azobenzene		1,001.2	µg/mL	+/-	5.8213	µg/mL	Gravimetric
	CAS # 103-33-3	(Lot MKBS2559V)			+/-	11.9688	µg/mL	Unstressed
	Purity 99%				+/-	19.0482	µg/mL	Stressed
57	Diphenylamine		850.7	µg/mL	+/-	4.9460	µg/mL	Gravimetric
	CAS # 122-39-4	(Lot MKBN8295V)			+/-	10.1693	µg/mL	Unstressed
	Purity 99%				+/-	16.1843	µg/mL	Stressed
58	2-Nitroaniline		1,000.2	µg/mL	+/-	5.8151	µg/mL	Gravimetric
	CAS # 88-74-4	(Lot MKBK7597V)			+/-	11.9561	µg/mL	Unstressed
	Purity 99%				+/-	19.0279	µg/mL	Stressed
59	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)		2,000.9	µg/mL	+/-	11.6336	µg/mL	Gravimetric
	CAS # 534-52-1	(Lot LC12394V)			+/-	23.9193	µg/mL	Unstressed
	Purity 99%				+/-	38.0672	µg/mL	Stressed
60	4-Bromophenyl phenyl ether		999.8	µg/mL	+/-	5.8131	µg/mL	Gravimetric
	CAS # 101-55-3	(Lot STBB9729V)			+/-	11.9520	µg/mL	Unstressed
	Purity 98%				+/-	19.0215	µg/mL	Stressed
61	Hexachlorobenzene		1,001.6	µg/mL	+/-	5.8234	µg/mL	Gravimetric
	CAS # 118-74-1	(Lot LC10604V)			+/-	11.9732	µg/mL	Unstressed
	Purity 99%				+/-	19.0551	µg/mL	Stressed
62	Pentachlorophenol		2,000.5	µg/mL	+/-	11.6311	µg/mL	Gravimetric
	CAS # 87-86-5	(Lot 150902JLM)			+/-	23.9142	µg/mL	Unstressed
	Purity 98%				+/-	38.0591	µg/mL	Stressed
63	Phenanthrene		1,001.9	µg/mL	+/-	5.8249	µg/mL	Gravimetric
	CAS # 85-01-8	(Lot MKBT8628V)			+/-	11.9764	µg/mL	Unstressed
	Purity 99%				+/-	19.0602	µg/mL	Stressed
64	n-Octadecane (C18)		1,000.8	µg/mL	+/-	5.8187	µg/mL	Gravimetric
	CAS # 593-45-3	(Lot 27SOF)			+/-	11.9636	µg/mL	Unstressed
	Purity 99%				+/-	19.0399	µg/mL	Stressed
65	Anthracene		1,001.4	µg/mL	+/-	5.8224	µg/mL	Gravimetric
	CAS # 120-12-7	(Lot MKBK5208V)			+/-	11.9712	µg/mL	Unstressed
	Purity 99%				+/-	19.0520	µg/mL	Stressed
66	Carbazole		1,000.4	µg/mL	+/-	5.8161	µg/mL	Gravimetric
	CAS # 86-74-8	(Lot 4017900)			+/-	11.9583	µg/mL	Unstressed
	Purity 98%				+/-	19.0314	µg/mL	Stressed
67	Di-n-butylphthalate		1,003.6	µg/mL	+/-	5.8348	µg/mL	Gravimetric
	CAS # 84-74-2	(Lot MKBL8501V)			+/-	11.9967	µg/mL	Unstressed
	Purity 99%				+/-	19.0926	µg/mL	Stressed
68	Fluoranthene		1,000.7	µg/mL	+/-	5.8184	µg/mL	Gravimetric
	CAS # 206-44-0	(Lot MKBQ6360V)			+/-	11.9629	µg/mL	Unstressed
	Purity 98%				+/-	19.0389	µg/mL	Stressed
69	Pyrene		1,000.2	µg/mL	+/-	5.8151	µg/mL	Gravimetric
	CAS # 129-00-0	(Lot BCBL6786V)			+/-	11.9561	µg/mL	Unstressed
	Purity 99%				+/-	19.0279	µg/mL	Stressed
70	Benzyl butyl phthalate		1,000.3	µg/mL	+/-	5.8158	µg/mL	Gravimetric
	CAS # 85-68-7	(Lot 03027HV)			+/-	11.9576	µg/mL	Unstressed
	Purity 99%				+/-	19.0304	µg/mL	Stressed
71	Benz(a)anthracene		1,000.1	µg/mL	+/-	5.8147	µg/mL	Gravimetric
	CAS # 56-55-3	(Lot ER031412-01)			+/-	11.9553	µg/mL	Unstressed
	Purity 99%				+/-	19.0266	µg/mL	Stressed

72	Chrysene		1,000.0	µg/mL	+/-	5.8143	µg/mL	Gravimetric
	CAS # 218-01-9	(Lot PR121912-01)			+/-	11.9545	µg/mL	Unstressed
	Purity 99%				+/-	19.0253	µg/mL	Stressed
73	Bis(2-ethylhexyl)phthalate		1,000.4	µg/mL	+/-	5.8164	µg/mL	Gravimetric
	CAS # 117-81-7	(Lot MKBK2695V)			+/-	11.9588	µg/mL	Unstressed
	Purity 99%				+/-	19.0323	µg/mL	Stressed
74	Di-n-octyl phthalate		1,004.1	µg/mL	+/-	5.8379	µg/mL	Gravimetric
	CAS # 117-84-0	(Lot 3998900)			+/-	12.0031	µg/mL	Unstressed
	Purity 99%				+/-	19.1027	µg/mL	Stressed
75	Benzo(b)fluoranthene		1,002.0	µg/mL	+/-	5.8257	µg/mL	Gravimetric
	CAS # 205-99-2	(Lot ER03101401)			+/-	11.9780	µg/mL	Unstressed
	Purity 99%				+/-	19.0628	µg/mL	Stressed
76	Benzo(k)fluoranthene		1,000.1	µg/mL	+/-	5.8149	µg/mL	Gravimetric
	CAS # 207-08-9	(Lot 012012K)			+/-	11.9557	µg/mL	Unstressed
	Purity 99%				+/-	19.0272	µg/mL	Stressed
77	Benzo(a)pyrene		1,000.3	µg/mL	+/-	5.8160	µg/mL	Gravimetric
	CAS # 50-32-8	(Lot ER071309-02)			+/-	11.9580	µg/mL	Unstressed
	Purity 99%				+/-	19.0311	µg/mL	Stressed
78	Indeno(1,2,3-cd)pyrene		1,000.8	µg/mL	+/-	5.8189	µg/mL	Gravimetric
	CAS # 193-39-5	(Lot ER082107-02)			+/-	11.9640	µg/mL	Unstressed
	Purity 99%				+/-	19.0406	µg/mL	Stressed
79	Dibenz(a,h)anthracene		1,001.9	µg/mL	+/-	5.8251	µg/mL	Gravimetric
	CAS # 53-70-3	(Lot ER032211-01)			+/-	11.9768	µg/mL	Unstressed
	Purity 99%				+/-	19.0609	µg/mL	Stressed
80	Benzo(g,h,i)perylene		1,000.8	µg/mL	+/-	5.8185	µg/mL	Gravimetric
	CAS # 191-24-2	(Lot ER05121401)			+/-	11.9632	µg/mL	Unstressed
	Purity 99%				+/-	19.0393	µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.
N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.
N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

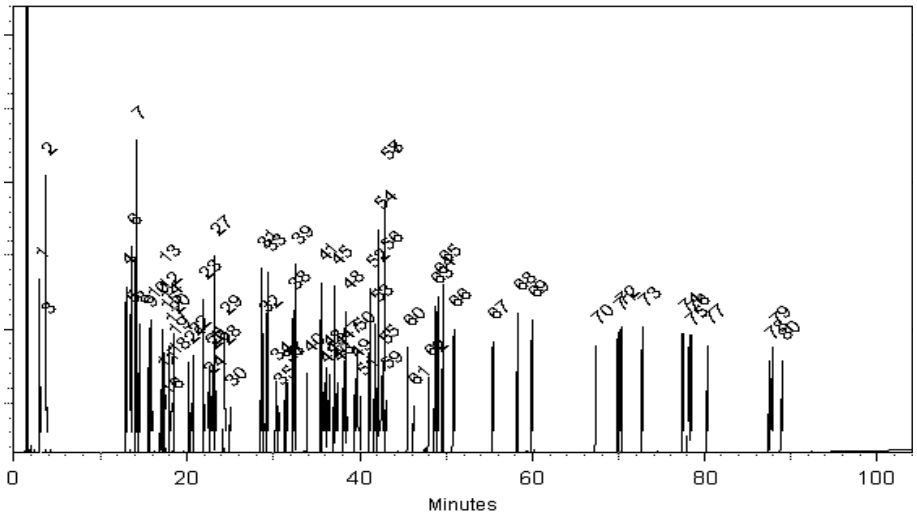
Carrier Gas:
hydrogen-constant pressure 10 psi

Temp. Program:
35°C (hold 3 min.) to 330°C
@ 3°C/min. (hold 3 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kendra Swope - Mix Technician

Date Mixed: 20-Oct-2015 **Balance:** B442140311

Jodi E. Breon - QA Analyst

Date Passed: 04-Nov-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MSL1S1SS_00016

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 570666.sec **Lot No.:** A0115803

Description : 8270 List 1 / Std #1 MegaMix (2016)

8270 List 1 / Std #1 MegaMix (2016) 500-2000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : June 30, 2017 **Storage:** 10°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dioxane	1,001.0 µg/mL	+/- 5.8333 µg/mL	Gravimetric
	CAS # 123-91-1.SEC (Lot CHA4A)		+/- 11.9726 µg/mL	Unstressed
	Purity 99%		+/- 19.0478 µg/mL	Stressed
2	Pyridine	1,000.3 µg/mL	+/- 5.8290 µg/mL	Gravimetric
	CAS # 110-86-1.SEC (Lot QN8DK)		+/- 11.9636 µg/mL	Unstressed
	Purity 99%		+/- 19.0336 µg/mL	Stressed
3	N-Nitrosodimethylamine	1,001.4 µg/mL	+/- 5.8359 µg/mL	Gravimetric
	CAS # 62-75-9.SEC (Lot 41B67)		+/- 11.9778 µg/mL	Unstressed
	Purity 98%		+/- 19.0562 µg/mL	Stressed
4	Aniline	1,000.3 µg/mL	+/- 5.8290 µg/mL	Gravimetric
	CAS # 62-53-3.SEC (Lot ZCD3N)		+/- 11.9636 µg/mL	Unstressed
	Purity 99%		+/- 19.0336 µg/mL	Stressed
5	Bis(2-chloroethyl)ether	1,000.3 µg/mL	+/- 5.8290 µg/mL	Gravimetric
	CAS # 111-44-4.SEC (Lot FA010143)		+/- 11.9636 µg/mL	Unstressed
	Purity 99%		+/- 19.0336 µg/mL	Stressed
6	2-Chlorophenol	1,000.6 µg/mL	+/- 5.8312 µg/mL	Gravimetric
	CAS # 95-57-8.SEC (Lot GJ01)		+/- 11.9681 µg/mL	Unstressed
	Purity 99%		+/- 19.0407 µg/mL	Stressed
7	Phenol	1,000.1 µg/mL	+/- 5.8282 µg/mL	Gravimetric
	CAS # 108-95-2.SEC (Lot EDPYN)		+/- 11.9621 µg/mL	Unstressed
	Purity 99%		+/- 19.0312 µg/mL	Stressed

8	n-Decane (C10)		1,000.1	µg/mL	+/-	5.8282	µg/mL	Gravimetric
	CAS # 124-18-5.SEC	(Lot UCVNN)			+/-	11.9621	µg/mL	Unstressed
	Purity 99%				+/-	19.0312	µg/mL	Stressed
9	1,4-Dichlorobenzene		1,000.3	µg/mL	+/-	5.8290	µg/mL	Gravimetric
	CAS # 106-46-7.SEC	(Lot YWKDC-MK)			+/-	11.9636	µg/mL	Unstressed
	Purity 99%				+/-	19.0336	µg/mL	Stressed
10	1,3-Dichlorobenzene		1,000.0	µg/mL	+/-	5.8275	µg/mL	Gravimetric
	CAS # 541-73-1.SEC	(Lot FMDFD-KA)			+/-	11.9606	µg/mL	Unstressed
	Purity 99%				+/-	19.0288	µg/mL	Stressed
11	1,2-Dichlorobenzene		1,000.0	µg/mL	+/-	5.8275	µg/mL	Gravimetric
	CAS # 95-50-1.SEC	(Lot 4NRGF-OT)			+/-	11.9606	µg/mL	Unstressed
	Purity 99%				+/-	19.0288	µg/mL	Stressed
12	Benzyl alcohol		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 100-51-6.SEC	(Lot QZBUO)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
13	2,2'-oxybis(1-chloropropane)		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 108-60-1 *	(Lot 2-KMW-57-8)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
14	2-Methylphenol (o-cresol)		1,000.3	µg/mL	+/-	5.8295	µg/mL	Gravimetric
	CAS # 95-48-7.SEC	(Lot NC7HL)			+/-	11.9646	µg/mL	Unstressed
	Purity 98%				+/-	19.0352	µg/mL	Stressed
15	Hexachloroethane		1,000.6	µg/mL	+/-	5.8309	µg/mL	Gravimetric
	CAS # 67-72-1.SEC	(Lot 10173016)			+/-	11.9675	µg/mL	Unstressed
	Purity 98%				+/-	19.0399	µg/mL	Stressed
16	Acetophenone		1,000.3	µg/mL	+/-	5.8290	µg/mL	Gravimetric
	CAS # 98-86-2.SEC	(Lot NSGTI)			+/-	11.9636	µg/mL	Unstressed
	Purity 99%				+/-	19.0336	µg/mL	Stressed
17	N-Nitroso-di-n-propylamine		1,000.6	µg/mL	+/-	5.8312	µg/mL	Gravimetric
	CAS # 621-64-7.SEC	(Lot 1528900)			+/-	11.9681	µg/mL	Unstressed
	Purity 99%				+/-	19.0407	µg/mL	Stressed
18	4-Methylphenol (p-cresol)		500.1	µg/mL	+/-	2.9145	µg/mL	Gravimetric
	CAS # 106-44-5.SEC	(Lot 65S2E)			+/-	5.9818	µg/mL	Unstressed
	Purity 99%				+/-	9.5168	µg/mL	Stressed
19	3-Methylphenol (m-cresol)		500.1	µg/mL	+/-	2.9145	µg/mL	Gravimetric
	CAS # 108-39-4.SEC	(Lot 6LHTM)			+/-	5.9818	µg/mL	Unstressed
	Purity 99%				+/-	9.5168	µg/mL	Stressed
20	Nitrobenzene		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 98-95-3.SEC	(Lot FLYIG)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
21	Isophorone		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 78-59-1.SEC	(Lot XHGJI)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
22	2-Nitrophenol		1,000.3	µg/mL	+/-	5.8290	µg/mL	Gravimetric
	CAS # 88-75-5.SEC	(Lot GXJ7J)			+/-	11.9636	µg/mL	Unstressed
	Purity 99%				+/-	19.0336	µg/mL	Stressed
23	2,4-Dimethylphenol		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 105-67-9.SEC	(Lot MKBL3650V)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed

24	Bis(2-chloroethoxy)methane		1,000.6	µg/mL	+/-	5.8312	µg/mL	Gravimetric
	CAS # 111-91-1 *	(Lot 3299900)			+/-	11.9681	µg/mL	Unstressed
	Purity 99%				+/-	19.0407	µg/mL	Stressed
25	2,4-Dichlorophenol		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 120-83-2.SEC	(Lot FHM01)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
26	1,2,4-Trichlorobenzene		1,000.0	µg/mL	+/-	5.8275	µg/mL	Gravimetric
	CAS # 120-82-1.SEC	(Lot 3LYYC)			+/-	11.9606	µg/mL	Unstressed
	Purity 99%				+/-	19.0288	µg/mL	Stressed
27	Naphthalene		1,001.1	µg/mL	+/-	5.8341	µg/mL	Gravimetric
	CAS # 91-20-3.SEC	(Lot 4KW3H-OO)			+/-	11.9741	µg/mL	Unstressed
	Purity 99%				+/-	19.0502	µg/mL	Stressed
28	2,6-Dichlorophenol		1,000.6	µg/mL	+/-	5.8312	µg/mL	Gravimetric
	CAS # 87-65-0.SEC	(Lot SIDBB)			+/-	11.9681	µg/mL	Unstressed
	Purity 99%				+/-	19.0407	µg/mL	Stressed
29	4-Chloroaniline		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 106-47-8.SEC	(Lot 10171860)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
30	Hexachlorobutadiene		1,000.8	µg/mL	+/-	5.8323	µg/mL	Gravimetric
	CAS # 87-68-3.SEC	(Lot 3265500)			+/-	11.9705	µg/mL	Unstressed
	Purity 98%				+/-	19.0445	µg/mL	Stressed
31	2-Methylnaphthalene		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 91-57-6.SEC	(Lot 76023-1)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
32	4-Chloro-3-methylphenol		1,000.1	µg/mL	+/-	5.8282	µg/mL	Gravimetric
	CAS # 59-50-7.SEC	(Lot FDO02)			+/-	11.9621	µg/mL	Unstressed
	Purity 99%				+/-	19.0312	µg/mL	Stressed
33	1-Methylnaphthalene		1,000.9	µg/mL	+/-	5.8326	µg/mL	Gravimetric
	CAS # 90-12-0.SEC	(Lot UATSA)			+/-	11.9711	µg/mL	Unstressed
	Purity 99%				+/-	19.0455	µg/mL	Stressed
34	1,2,4,5-Tetrachlorobenzene		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 95-94-3.SEC	(Lot AF02)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
35	Hexachlorocyclopentadiene		1,001.1	µg/mL	+/-	5.8341	µg/mL	Gravimetric
	CAS # 77-47-4.SEC	(Lot 0012013)			+/-	11.9741	µg/mL	Unstressed
	Purity 99%				+/-	19.0502	µg/mL	Stressed
36	2,4,6-Trichlorophenol		1,000.9	µg/mL	+/-	5.8330	µg/mL	Gravimetric
	CAS # 88-06-2.SEC	(Lot UUMYM)			+/-	11.9719	µg/mL	Unstressed
	Purity 98%				+/-	19.0469	µg/mL	Stressed
37	2,4,5-Trichlorophenol		1,000.9	µg/mL	+/-	5.8329	µg/mL	Gravimetric
	CAS # 95-95-4.SEC	(Lot MKBQ9937V)			+/-	11.9716	µg/mL	Unstressed
	Purity 97%				+/-	19.0463	µg/mL	Stressed
38	2-Chloronaphthalene		1,000.3	µg/mL	+/-	5.8290	µg/mL	Gravimetric
	CAS # 91-58-7.SEC	(Lot LC03928V)			+/-	11.9636	µg/mL	Unstressed
	Purity 99%				+/-	19.0336	µg/mL	Stressed
39	Biphenyl		1,000.1	µg/mL	+/-	5.8282	µg/mL	Gravimetric
	CAS # 92-52-4.SEC	(Lot 330QE)			+/-	11.9621	µg/mL	Unstressed
	Purity 99%				+/-	19.0312	µg/mL	Stressed

40	4-Nitroaniline		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 100-01-6.SEC	(Lot 5ITRC)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
41	Acenaphthylene		1,000.1	µg/mL	+/-	5.8280	µg/mL	Gravimetric
	CAS # 208-96-8.SEC	(Lot 062013)			+/-	11.9617	µg/mL	Unstressed
	Purity 98%				+/-	19.0305	µg/mL	Stressed
42	1,3-Dinitrobenzene		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 99-65-0.SEC	(Lot 3XXLB)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
43	Dimethylphthalate		1,000.3	µg/mL	+/-	5.8290	µg/mL	Gravimetric
	CAS # 131-11-3.SEC	(Lot 483WC)			+/-	11.9636	µg/mL	Unstressed
	Purity 99%				+/-	19.0336	µg/mL	Stressed
44	2,6-Dinitrotoluene		1,000.1	µg/mL	+/-	5.8282	µg/mL	Gravimetric
	CAS # 606-20-2.SEC	(Lot GE01)			+/-	11.9621	µg/mL	Unstressed
	Purity 99%				+/-	19.0312	µg/mL	Stressed
45	Acenaphthene		1,000.6	µg/mL	+/-	5.8312	µg/mL	Gravimetric
	CAS # 83-32-9.SEC	(Lot BWZJE)			+/-	11.9681	µg/mL	Unstressed
	Purity 99%				+/-	19.0407	µg/mL	Stressed
46	2,4-Dinitrophenol		2,000.4	µg/mL	+/-	11.6304	µg/mL	Gravimetric
	CAS # 51-28-5.SEC	(Lot 2TXXH)			+/-	23.9126	µg/mL	Unstressed
	Purity 99%				+/-	38.0566	µg/mL	Stressed
47	Dibenzofuran		1,000.5	µg/mL	+/-	5.8304	µg/mL	Gravimetric
	CAS # 132-64-9.SEC	(Lot 27ZGC)			+/-	11.9666	µg/mL	Unstressed
	Purity 99%				+/-	19.0383	µg/mL	Stressed
48	3-Nitroaniline		1,000.1	µg/mL	+/-	5.8282	µg/mL	Gravimetric
	CAS # 99-09-2.SEC	(Lot FGN03)			+/-	11.9621	µg/mL	Unstressed
	Purity 99%				+/-	19.0312	µg/mL	Stressed
49	2,4-Dinitrotoluene		1,000.5	µg/mL	+/-	5.8304	µg/mL	Gravimetric
	CAS # 121-14-2.SEC	(Lot SHRSA)			+/-	11.9666	µg/mL	Unstressed
	Purity 99%				+/-	19.0383	µg/mL	Stressed
50	4-Nitrophenol		2,000.3	µg/mL	+/-	11.6296	µg/mL	Gravimetric
	CAS # 100-02-7.SEC	(Lot 2J5LB)			+/-	23.9111	µg/mL	Unstressed
	Purity 99%				+/-	38.0542	µg/mL	Stressed
51	2,3,4,6-Tetrachlorophenol		1,001.1	µg/mL	+/-	5.8338	µg/mL	Gravimetric
	CAS # 58-90-2.SEC	(Lot LC10202V)			+/-	11.9734	µg/mL	Unstressed
	Purity 98%				+/-	19.0492	µg/mL	Stressed
52	Fluorene		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 86-73-7.SEC	(Lot 1561600)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
53	4-Chlorophenyl phenyl ether		1,000.6	µg/mL	+/-	5.8312	µg/mL	Gravimetric
	CAS # 7005-72-3.SEC	(Lot P31G)			+/-	11.9681	µg/mL	Unstressed
	Purity 99%				+/-	19.0407	µg/mL	Stressed
54	n-Hexadecane (C16)		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 544-76-3.SEC	(Lot A0328141)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
55	Diethylphthalate		1,001.0	µg/mL	+/-	5.8333	µg/mL	Gravimetric
	CAS # 84-66-2.SEC	(Lot UMBJC)			+/-	11.9726	µg/mL	Unstressed
	Purity 99%				+/-	19.0478	µg/mL	Stressed

56	Azobenzene		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 103-33-3.SEC	(Lot JUWAG)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
57	Diphenylamine		850.5	µg/mL	+/-	4.9563	µg/mL	Gravimetric
	CAS # 122-39-4.SEC	(Lot 10164691)			+/-	10.1725	µg/mL	Unstressed
	Purity 99%				+/-	16.1840	µg/mL	Stressed
58	2-Nitroaniline		1,000.5	µg/mL	+/-	5.8304	µg/mL	Gravimetric
	CAS # 88-74-4.SEC	(Lot T6E7B)			+/-	11.9666	µg/mL	Unstressed
	Purity 99%				+/-	19.0383	µg/mL	Stressed
59	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)		2,000.8	µg/mL	+/-	11.6325	µg/mL	Gravimetric
	CAS # 534-52-1.SEC	(Lot 3256700)			+/-	23.9171	µg/mL	Unstressed
	Purity 99%				+/-	38.0637	µg/mL	Stressed
60	4-Bromophenyl phenyl ether		1,000.9	µg/mL	+/-	5.8326	µg/mL	Gravimetric
	CAS # 101-55-3.SEC	(Lot 84C6D)			+/-	11.9711	µg/mL	Unstressed
	Purity 99%				+/-	19.0455	µg/mL	Stressed
61	Hexachlorobenzene		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 118-74-1.SEC	(Lot 20622)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
62	Pentachlorophenol		2,001.1	µg/mL	+/-	11.6347	µg/mL	Gravimetric
	CAS # 87-86-5.SEC	(Lot 2357600)			+/-	23.9216	µg/mL	Unstressed
	Purity 99%				+/-	38.0708	µg/mL	Stressed
63	Phenanthrene		1,000.2	µg/mL	+/-	5.8288	µg/mL	Gravimetric
	CAS # 85-01-8.SEC	(Lot 1777100)			+/-	11.9631	µg/mL	Unstressed
	Purity 98%				+/-	19.0329	µg/mL	Stressed
64	n-Octadecane (C18)		1,000.9	µg/mL	+/-	5.8326	µg/mL	Gravimetric
	CAS # 593-45-3.SEC	(Lot G14U045)			+/-	11.9711	µg/mL	Unstressed
	Purity 99%				+/-	19.0455	µg/mL	Stressed
65	Anthracene		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 120-12-7.SEC	(Lot WDFNJ)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
66	Carbazole		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 86-74-8.SEC	(Lot LMIZB)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
67	Di-n-butylphthalate		1,000.1	µg/mL	+/-	5.8282	µg/mL	Gravimetric
	CAS # 84-74-2.SEC	(Lot 42FSG)			+/-	11.9621	µg/mL	Unstressed
	Purity 99%				+/-	19.0312	µg/mL	Stressed
68	Fluoranthene		1,000.6	µg/mL	+/-	5.8312	µg/mL	Gravimetric
	CAS # 206-44-0.SEC	(Lot FREGF)			+/-	11.9681	µg/mL	Unstressed
	Purity 99%				+/-	19.0407	µg/mL	Stressed
69	Pyrene		1,000.9	µg/mL	+/-	5.8326	µg/mL	Gravimetric
	CAS # 129-00-0.SEC	(Lot ROVJC)			+/-	11.9711	µg/mL	Unstressed
	Purity 99%				+/-	19.0455	µg/mL	Stressed
70	Benzyl butyl phthalate		1,001.6	µg/mL	+/-	5.8366	µg/mL	Gravimetric
	CAS # 85-68-7.SEC	(Lot GX3GL)			+/-	11.9793	µg/mL	Unstressed
	Purity 98%				+/-	19.0585	µg/mL	Stressed
71	Benz(a)anthracene		1,000.2	µg/mL	+/-	5.8286	µg/mL	Gravimetric
	CAS # 56-55-3.SEC	(Lot MTENF)			+/-	11.9629	µg/mL	Unstressed
	Purity 97%				+/-	19.0325	µg/mL	Stressed

72	chrysene		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 218-01-9.SEC	(Lot KQ4SE)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
73	Bis(2-ethylhexyl)phthalate		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 117-81-7.SEC	(Lot MT8AG)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
74	Di-n-octyl phthalate		1,000.9	µg/mL	+/-	5.8330	µg/mL	Gravimetric
	CAS # 117-84-0.SEC	(Lot O8DLD)			+/-	11.9719	µg/mL	Unstressed
	Purity 98%				+/-	19.0469	µg/mL	Stressed
75	Benzo(b)fluoranthene		1,000.4	µg/mL	+/-	5.8297	µg/mL	Gravimetric
	CAS # 205-99-2.SEC	(Lot 022011)			+/-	11.9651	µg/mL	Unstressed
	Purity 99%				+/-	19.0360	µg/mL	Stressed
76	Benzo(k)fluoranthene		1,000.9	µg/mL	+/-	5.8326	µg/mL	Gravimetric
	CAS # 207-08-9.SEC	(Lot ER061608-02)			+/-	11.9711	µg/mL	Unstressed
	Purity 99%				+/-	19.0455	µg/mL	Stressed
77	Benzo(a)pyrene		1,000.0	µg/mL	+/-	5.8275	µg/mL	Gravimetric
	CAS # 50-32-8.SEC	(Lot NPEZF)			+/-	11.9606	µg/mL	Unstressed
	Purity 99%				+/-	19.0288	µg/mL	Stressed
78	Indeno(1,2,3-cd)pyrene		1,000.1	µg/mL	+/-	5.8282	µg/mL	Gravimetric
	CAS # 193-39-5.SEC	(Lot 022013)			+/-	11.9621	µg/mL	Unstressed
	Purity 99%				+/-	19.0312	µg/mL	Stressed
79	Dibenz(a,h)anthracene		1,000.8	µg/mL	+/-	5.8319	µg/mL	Gravimetric
	CAS # 53-70-3.SEC	(Lot 0012012)			+/-	11.9696	µg/mL	Unstressed
	Purity 99%				+/-	19.0431	µg/mL	Stressed
80	Benzo(g,h,i)perylene		1,000.6	µg/mL	+/-	5.8308	µg/mL	Gravimetric
	CAS # 191-24-2.SEC	(Lot 0022012)			+/-	11.9673	µg/mL	Unstressed
	Purity 96%				+/-	19.0395	µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

*** Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.**

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.
N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.
N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

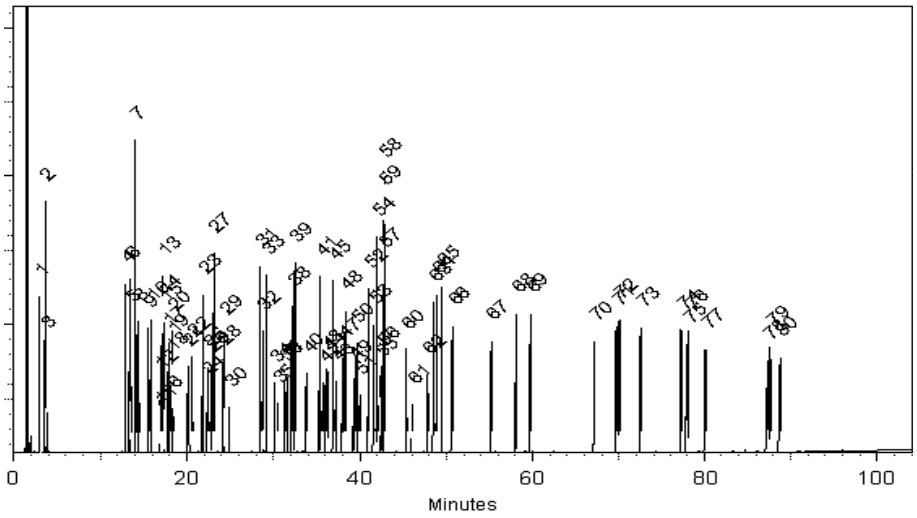
Carrier Gas:
hydrogen-constant pressure 10 psi

Temp. Program:
35°C (hold 3 min.) to 330°C
@ 3°C/min. (hold 3 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Date Mixed: 07-Dec-2015 **Balance:** 1128353505

Amanda Miller - QC Analyst

Date Passed: 17-Dec-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MSL1S9PS_00004

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569730 **Lot No.:** A0112567

Rec'd 1/22/16

Description : 8270 List 1 / Std #9

8270 List 1 / Std #9 2,000 ug/ml, Methylene Chloride, 5 ml/ampul

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2017 **Storage:** 10°C or colder

Handling: Contains carcinogen/reproductive toxin.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Benzidine	2,001.0 µg/mL	+/- 11.6337	µg/mL	Gravimetric
	CAS # 92-87-5 (Lot 150701JLMB)		+/- 21.9078	µg/mL	Unstressed
	Purity 99%		+/- 37.1592	µg/mL	Stressed
2	3,3'-Dichlorobenzidine	2,001.5 µg/mL	+/- 11.6369	µg/mL	Gravimetric
	CAS # 91-94-1 (Lot 150701JLMA)		+/- 21.9138	µg/mL	Unstressed
	Purity 99%		+/- 37.1694	µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

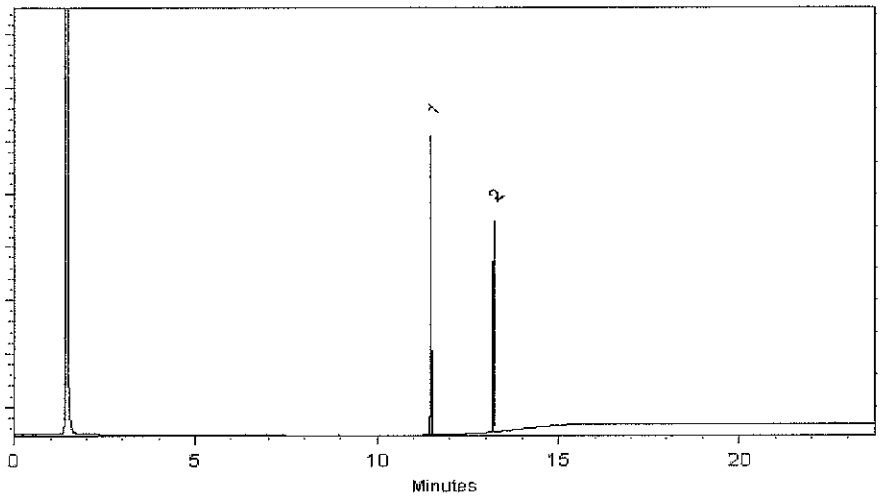
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kendra Swope - Mix Technician

Date Mixed: 15-Jul-2015 **Balance:** 1122030677

Jennifer L. Pollino - QC Analyst

Date Passed: 17-Jul-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

MSL1S9SS_00004

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569730.sec **Lot No.:** A0115364

Description : 8270 List 1 / Std #9

8270 List 1 / Std #9 2,000 ug/ml, Methylene Chloride, 5 ml/ampul

Rec'd 1/22/16

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : May 31, 2017 **Storage:** 10°C or colder

Handling: Contains carcinogen/reproductive toxin.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Benzidine	2,002.0 µg/mL	+/- 11.6398 µg/mL	Gravimetric
	CAS # 92-87-5.SEC (Lot 2715900)		+/- 23.9320 µg/mL	Unstressed
	Purity 99%		+/- 38.0875 µg/mL	Stressed
2	3,3'-Dichlorobenzidine	2,019.0 µg/mL	+/- 11.7386 µg/mL	Gravimetric
	CAS # 91-94-1.SEC (Lot 3426100)		+/- 24.1353 µg/mL	Unstressed
	Purity 99%		+/- 38.4109 µg/mL	Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

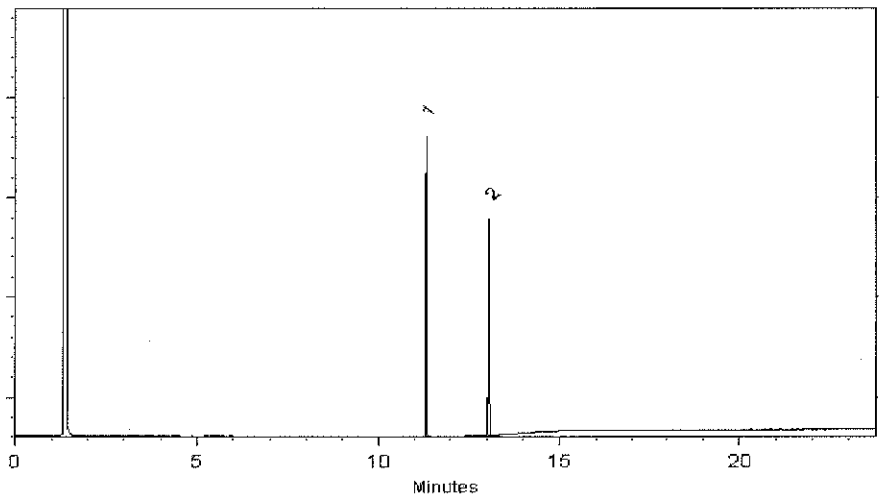
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Lane Kibe - Mix Technician

Date Mixed: 11-Nov-2015 **Balance:** B345965662

Tyler Brown - QA Analyst

Date Passed: 20-Nov-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

Reagent

MT6020LLSTD_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
Internet: www.inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.6799 - 540.961.3090
Fax: 540.961.3091
Email: inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 693.01
ACCREDITED Reference Material Producer Certificate 693.02

Rec. 9/2/2016
open 9/6/2016
exp. 9/6/2017

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020 LL STD
Lot Number:	K2-MEB651469
Matrix:	10% (v/v) HCl
Value / Analyte(s):	5 µg/mL ea:

Aluminum,	Boron,	Calcium,
Iron,	Potassium,	Magnesium,
Sodium,	Phosphorus,	
1 µg/mL ea:		
Lithium,	Tin,	Vanadium,
0.5 µg/mL ea:		
Gold,	Strontium,	Titanium,
Zinc,		
0.2 µg/mL ea:		
Arsenic,	Cerium,	Chromium+3,
Copper,	Molybdenum,	Nickel,
Antimony,	Selenium,	
0.1 µg/mL ea:		
Silver,	Barium,	Beryllium,
Cadmium,	Cobalt,	Gadolinium,
Manganese,	Lead,	Thallium,
Uranium		

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	5.001 ± 0.030 µg/mL	Antimony, Sb	0.2000 ± 0.0012 µg/mL
Arsenic, As	0.2001 ± 0.0015 µg/mL	Barium, Ba	0.1000 ± 0.0006 µg/mL
Beryllium, Be	0.1000 ± 0.0007 µg/mL	Boron, B	5.000 ± 0.034 µg/mL
Cadmium, Cd	0.0999 ± 0.0007 µg/mL	Calcium, Ca	5.000 ± 0.019 µg/mL
Cerium, Ce	0.2001 ± 0.0015 µg/mL	Chromium+3, Cr3	0.2002 ± 0.0012 µg/mL
Cobalt, Co	0.1000 ± 0.0008 µg/mL	Copper, Cu	0.2000 ± 0.0008 µg/mL
Gadolinium, Gd	0.1000 ± 0.0007 µg/mL	Gold, Au	0.5000 ± 0.0030 µg/mL
Iron, Fe	5.000 ± 0.026 µg/mL	Lead, Pb	0.1000 ± 0.0006 µg/mL
Lithium, Li	1.000 ± 0.006 µg/mL	Magnesium, Mg	5.000 ± 0.025 µg/mL
Manganese, Mn	0.1000 ± 0.0007 µg/mL	Molybdenum, Mo	0.2001 ± 0.0013 µg/mL
Nickel, Ni	0.2001 ± 0.0015 µg/mL	Phosphorus, P	5.001 ± 0.026 µg/mL
Potassium, K	5.001 ± 0.026 µg/mL	Selenium, Se	0.2001 ± 0.0018 µg/mL
Silver, Ag	0.1000 ± 0.0009 µg/mL	Sodium, Na	4.999 ± 0.025 µg/mL
Strontium, Sr	0.4999 ± 0.0031 µg/mL	Thallium, Tl	0.1000 ± 0.0006 µg/mL
Tin, Sn	1.001 ± 0.007 µg/mL	Titanium, Ti	0.5006 ± 0.0030 µg/mL
Uranium, U	0.1000 ± 0.0009 µg/mL	Vanadium, V	1.000 ± 0.006 µg/mL
Zinc, Zn	0.5001 ± 0.0029 µg/mL		

Certified Density: 1.025 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
Au	ICP Assay	3121	991806
Au	Calculated		See Sec. 4.2
B	ICP Assay	3107	110630
B	Calculated		See Sec. 4.2
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	00630
Co	EDTA	928	928
Cr3	ICP Assay	3112a	030730
Cr3	Calculated		See Sec. 4.2
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Gd	EDTA	928	928
Gd	ICP Assay	3118a	992004
K	ICP Assay	3141a	140813
K	Calculated		See Sec. 4.2
Li	ICP Assay	3129a	000505
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	000612
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Sb	ICP Assay	3102A	061229
Sb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2

Sn	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
Ti	ICP Assay	3162a	060808
Tl	ICP Assay	3158	993012
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.21 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 30, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 30, 2019

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 9/6/2016

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTCCV_00012

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O. Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

Rec/open 12/21/15
TP 12/21/15
~~Exp 12/21/16~~
Exp 12/16/16

Product Description:

Part Number: **C1-151207RH01-1L**
Solution A
Lot Number: **1534836**
Matrix: 2% HNO_3 + 1% HCl
Purity: 99.97% - 99.9999%

559114
ID: MTCCV_00012
Exp ~~12/21/16~~ Rpd:TTP Opn:12/21/15
6020 CCV Stock Solution-A
TP 12/21/15

Certified Values:

Element	(mg/L)			SRM ID	SRM Lot#	Element	(mg/L)			SRM ID	SRM Lot#
Al	500.0	±	2.5	3101a	140903	Gd	10.00	±	0.05	3118a	992004
As	10.0	±	0.1	3103a	100818	K	500.0	±	2.5	3141a	140813
Au	10.00	±	0.05	3121	991806	Li	10.00	±	0.06	3129a	100714
B	20.0	±	0.1	3107	110830	Mg	500.0	±	2.5	3131a	140110
Ba	10.00	±	0.06	*		Mn	10.0	±	0.1	3132	050429
Be	10.0	±	0.1	3105a	090514	Na	500.0	±	2.5	3152a	120715
Ca	500.0	±	2.5	3109a	130213	Ni	10.00	±	0.05	3136	120619
Cd	10.00	±	0.05	3108	130116	Se	10.0	±	0.1	3149	100901
Ce	10.00	±	0.05	3110	090504	Sr	10.00	±	0.05	3153a	990906
Co	10.00	±	0.05	3113	000630	U	10.00	±	0.05	3164	080521
Cr	10.00	±	0.05	3112a	030730	V	10.00	±	0.06	3165	992706
Cu	10.00	±	0.05	3114	121207	Zn	10.00	±	0.05	3168a	120629

The Certified values are based on gravimetric and volumetric preparation, and verified against SRM 3100 series via either inductively coupled plasma optical emission spectrometry (ICP-OES) or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.
* Refer to Traceability Information, Section d

Preparation Information:

The standard is generally manufactured from CRM single element solutions that were prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions. Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.
Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

Intended Use:

The CRM is intended for use as a calibration standard and QC control for instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards**
The Calibration Standards are traceable to SRM 3100 Series Spectrometric Standard Solutions or second sources.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for twelve months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**December 14, 2015**
Shipped Date:	**December 16, 2015**
Expiration Date:	**December 16, 2016**
Certificate Issue Date:	**December 15, 2015**

Quality Information:

ISO/IEC 17025:2005 Accreditation
Certificate Number AT-1529

ISO Guide 34:2009 (RMP) Accreditation
Certificate Number AR-1436

Angel Sellers
Quality Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

Reagent

MTCCV_00013

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O. Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

Product Description:

Part Number:	**C1-151207RH01-1L**
	Solution B
Lot Number:	**1534837**
Matrix:	2% HNO_3 + Tr HF
Purity:	99.98% - 99.9999%

559146
ID: MTCCV_00013
Exp 12/31/15 Prpd TTP Opn 12/21/15
6020 CCV Stock Solution
TP 12/21/15

Rec/opn 12/21/15
TP 12/21/15
~~Exp 12/21/16~~
Exp 12/16/16

Certified Values:

Element	(mg/L)	SRM ID	SRM Lot#
Ag	5.000 ± 0.025	3151	992212
Fe	500.0 ± 2.5	3126a	140812
Mo	20.00 ± 0.12	3134	130418
P	500 ± 3	3139a	060717
Pb	10.00 ± 0.06	3128	101026
Sb	5.00 ± 0.03	*	
Si	10.00 ± 0.06	3150	130912
Sn	10.00 ± 0.06	*	
Ti	20.00 ± 0.12	3162a	130925
Tl	5.000 ± 0.025	3158	993012

The Certified values are based on gravimetric and volumetric preparation, and verified against SRM 3100 series via either inductively coupled plasma optical emission spectrometry (ICP-OES) or inductively coupled plasma mass spectrometry (ICP-MS) using an internal laboratory developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.
* Refer to Traceability Information, Section d

Preparation Information:

The standard is generally manufactured from CRM single element solutions that were prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions. Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.
Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

Intended Use:

The CRM is intended for use as a calibration standard and QC control for instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards**
The Calibration Standards are traceable to SRM 3100 Series Spectrometric Standard Solutions or second sources.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for twelve months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**December 14, 2015**
Shipped Date:	**December 16, 2015**
Expiration Date:	**December 16, 2016**
Certificate Issue Date:	**December 15, 2015**

Quality Information:

ISO/IEC 17025:2005 Accreditation
Certificate Number AT-1529

ISO Guide 34:2009 (RMP) Accreditation
Certificate Number AR-1436

Angel Sellers
Quality Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

Reagent

MTICSAB_00014

INORGANIC VENTURES™

300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-37
Lot Number:	J2-MEB616027
Matrix:	4% (v/v) HNO3 1% (v/v) HCl
Value / Analyte(s):	1 000 mg/L ea: Aluminum, Calcium, Iron, Potassium, Magnesium, Sodium, Phosphorus, 20 mg/L ea: Molybdenum, Titanium

Open/Rec 1/14/16
Exp 1/14/17

567156
ID: MTICSAB_00014
Exp:01/14/17 Prpd:TTP Opn:01/14/16
6020 ICSA+ICSAB Stock Sol

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 000 ± 4 mg/L	Calcium, Ca	1 000 ± 4 mg/L
Iron, Fe	1 000 ± 4 mg/L	Magnesium, Mg	1 000 ± 4 mg/L
Molybdenum, Mo	20.00 ± 0.12 mg/L	Phosphorus, P	1 000 ± 5 mg/L
Potassium, K	1 000 ± 4 mg/L	Sodium, Na	1 000 ± 4 mg/L
Titanium, Ti	20.00 ± 0.12 mg/L		

Certified Density: 1.046 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mo	ICP Assay	3134	891307
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Ti	ICP Assay	3162a	060808

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000209	M	Eu	<	0.000105	n	Na	<		M	Se	<	0.004087	M	Zn		0.007116
s	Al	<		s	Fe	<		M	Nb	<	0.000209	O	Si	<	0.095349	M	Zr	<	0.000209
O	As	<	0.052300	M	Ga	<	0.000105	M	Nd	<	0.000105	M	Sm	<	0.000105				
M	Au	<	0.000838	M	Gd	<	0.000105	O	Ni	<	0.005230	M	Sn	<	0.000314				
M	B	<	0.003872	M	Ge	<	0.024070	M	Os	<	0.000105	O	Sr		0.007217				
M	Ba	<	0.000628	M	Hf	<	0.000105	s	P	<		M	Ta	<	0.000105				
M	Be	<	0.000105	O	Hg	<	0.008271	M	Pb		0.000628	M	Tb	<	0.000105				
M	Bi	<	0.000105	M	Ho	<	0.000105	M	Pd	<	0.000105	M	Te	<	0.001779				
s	Ca	<		M	In	<	0.000105	M	Pr	<	0.000105	M	Th	<	0.000105				
O	Cd	<	0.001570	M	Ir	<	0.000105	M	Pt	<	0.000105	n	Ti	<					
M	Ce	<	0.000419	s	K	<		i	Rb	<		M	Tl	<	0.000105				
M	Co	<	0.001256	M	La	<	0.000209	M	Re	<	0.000105	M	Tm	<	0.000105				
M	Cr		0.011616	O	Li		0.001213	M	Rh	<	0.000105	M	U	<	0.000105				
M	Cs	<	0.000209	M	Lu	<	0.000105	M	Ru	<	0.000105	O	V	<	0.007274				
O	Cu	<	0.004755	s	Mg	<		O	S	<	0.292373	M	W	<	0.002302				
M	Dy	<	0.000105	O	Mn		0.002179	M	Sb		0.000523	M	Y	<	0.000105				
M	Er	<	0.000105	s	Mo	<		M	Sc	<	0.000209	M	Yb	<	0.000105				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 06, 2016

11.2 Expiration Date

EXPIRES
02 FEB 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MTICV_00009

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Rec/open 11/19/15
Exp 11/19/16

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-67-REV2
Lot Number:	J2-MEB605103
Matrix:	10% (v/v) HCl tr. HF
Value / Analyte(s):	100 mg/L ea:

Aluminum,	Calcium,	Iron,
Potassium,	Magnesium,	Sodium,
Phosphorus,	Silicon,	

20 mg/L ea:
Boron,

10 mg/L ea:

Arsenic,	Gold,	Barium,
Beryllium,	Cadmium,	Cerium,
Cobalt,	Chromium+3,	Copper,
Lithium,	Manganese,	Molybdenum,
Nickel,	Lead,	Selenium,
Tin,	Strontium,	Titanium,
Uranium,	Vanadium,	Zinc,

5 mg/L ea:

Silver,	Antimony,	Thallium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.5 mg/L	Antimony, Sb	4.999 ± 0.038 mg/L
Arsenic, As	10.00 ± 0.06 mg/L	Barium, Ba	10.00 ± 0.06 mg/L
Beryllium, Be	10.00 ± 0.05 mg/L	Boron, B	20.00 ± 0.14 mg/L
Cadmium, Cd	10.00 ± 0.06 mg/L	Calcium, Ca	100.0 ± 0.4 mg/L
Cerium, Ce	10.00 ± 0.05 mg/L	Chromium+3, Cr3	10.00 ± 0.05 mg/L
Cobalt, Co	10.00 ± 0.04 mg/L	Copper, Cu	10.00 ± 0.06 mg/L
Gold, Au	10.00 ± 0.06 mg/L	Iron, Fe	100.0 ± 0.4 mg/L
Lead, Pb	10.00 ± 0.06 mg/L	Lithium, Li	10.00 ± 0.05 mg/L
Magnesium, Mg	100.0 ± 0.4 mg/L	Manganese, Mn	10.00 ± 0.05 mg/L
Molybdenum, Mo	10.00 ± 0.06 mg/L	Nickel, Ni	10.00 ± 0.06 mg/L
Phosphorus, P	100.0 ± 0.5 mg/L	Potassium, K	100.0 ± 0.4 mg/L
Selenium, Se	10.00 ± 0.05 mg/L	Silicon, Si	100.0 ± 0.6 mg/L
Silver, Ag	5.000 ± 0.034 mg/L	Sodium, Na	100.0 ± 0.4 mg/L
Strontium, Sr	10.00 ± 0.06 mg/L	Thallium, Tl	5.001 ± 0.036 mg/L
Tin, Sn	10.00 ± 0.07 mg/L	Titanium, Ti	10.00 ± 0.06 mg/L
Uranium, U	10.00 ± 0.05 mg/L	Vanadium, V	10.00 ± 0.06 mg/L
Zinc, Zn	10.00 ± 0.06 mg/L		

Certified Density: 1.029 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
Al	ICP Assay	3101a	060502
Al	Calculated		See Sec. 4.2
As	ICP Assay	3103a	100818
As	EDTA		See Sec. 4.2
Au	ICP Assay	3121	991806
Au	Calculated		See Sec. 4.2
B	ICP Assay	3107	110830
B	Calculated		See Sec. 4.2
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	ICP Assay	3112a	030730
Cr3	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Mo	ICP Assay	3134	891307
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Calculated		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Sb	ICP Assay	3102A	061229
Sb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901

Se	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Si	Calculated		See Sec. 4.2
Sn	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
Ti	ICP Assay	3162a	060808
Tl	ICP Assay	3158	993012
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

HF Note: This standard should not be prepared or stored in glass.

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 04, 2015

11.2 Expiration Date

EXPIRES
01 DEC 2016

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

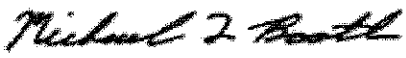
12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

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CERTIFIED REFERENCE MATERIAL

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ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

Certificate of Analysis

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569720.sec **Lot No.:** A0108163

Description : 8260 List 1 / Std #1 MegaMix (2015)

8260 List 1 / Std #1 MegaMix (2015) 1250-62500 µg/ml, P&T Methanol, 1 ml/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2017 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Diethyl ether (ethyl ether) **CAS #** 60-29-7.SEC (Lot F23X068) **Purity** 99%	2,501.1 µg/mL	+/- 14.5418 µg/mL +/- 133.1044 µg/mL +/- 133.2511 µg/mL	Gravimetric Unstressed Stressed
2	1,1,2-Trichlorotrifluoroethane (CFC-113) **CAS #** 76-13-1.SEC (Lot 18342) **Purity** 99%	2,501.1 µg/mL	+/- 14.5418 µg/mL +/- 133.1044 µg/mL +/- 133.2511 µg/mL	Gravimetric Unstressed Stressed
3	1,1-Dichloroethene **CAS #** 75-35-4.SEC (Lot 903000) **Purity** 99%	2,502.8 µg/mL	+/- 14.5512 µg/mL +/- 133.1908 µg/mL +/- 133.3377 µg/mL	Gravimetric Unstressed Stressed
4	tert-Butanol (TBA) **CAS #** 75-65-0.SEC (Lot XYXDO) **Purity** 98%	25,000.5 µg/mL	+/- 145.3477 µg/mL +/- 1,330.4725 µg/mL +/- 1,331.9397 µg/mL	Gravimetric Unstressed Stressed
5	Iodomethane (methyl iodide) **CAS #** 74-88-4.SEC (Lot A13Y016) **Purity** 97%	2,500.5 µg/mL	+/- 14.5383 µg/mL +/- 133.0732 µg/mL +/- 133.2199 µg/mL	Gravimetric Unstressed Stressed
6	Methyl acetate **CAS #** 79-20-9.SEC (Lot YDGVD) **Purity** 99%	12,500.6 µg/mL	+/- 72.6759 µg/mL +/- 665.2553 µg/mL +/- 665.9889 µg/mL	Gravimetric Unstressed Stressed
7	Allyl chloride (3-chloropropene) **CAS #** 107-05-1.SEC (Lot 5MNOA-DQ) **Purity** 99%	2,501.3 µg/mL	+/- 14.5425 µg/mL +/- 133.1110 µg/mL +/- 133.2578 µg/mL	Gravimetric Unstressed Stressed

8	Methylene chloride (dichloromethane)		2,501.4	µg/mL	+/-	14.5432	µg/mL	Gravimetric
	CAS # 75-09-2.SEC	(Lot FGM02)			+/-	133.1177	µg/mL	Unstressed
	Purity 99%				+/-	133.2645	µg/mL	Stressed
9	Carbon disulfide		2,501.2	µg/mL	+/-	14.5422	µg/mL	Gravimetric
	CAS # 75-15-0.SEC	(Lot MKBL1376V)			+/-	133.1086	µg/mL	Unstressed
	Purity 98%				+/-	133.2554	µg/mL	Stressed
10	Acrylonitrile		25,002.1	µg/mL	+/-	145.3569	µg/mL	Gravimetric
	CAS # 107-13-1.SEC	(Lot CCFKL)			+/-	1,330.5571	µg/mL	Unstressed
	Purity 99%				+/-	1,332.0244	µg/mL	Stressed
11	cis-1,2-Dichloroethene		2,500.3	µg/mL	+/-	14.5367	µg/mL	Gravimetric
	CAS # 156-59-2.SEC	(Lot HGC01-BLKT)			+/-	133.0578	µg/mL	Unstressed
	Purity 99%				+/-	133.2045	µg/mL	Stressed
12	n-Hexane (C6)		2,500.1	µg/mL	+/-	14.5358	µg/mL	Gravimetric
	CAS # 110-54-3.SEC	(Lot K24W001)			+/-	133.0499	µg/mL	Unstressed
	Purity 98%				+/-	133.1967	µg/mL	Stressed
13	1,1-Dichloroethane		2,503.0	µg/mL	+/-	14.5527	µg/mL	Gravimetric
	CAS # 75-34-3.SEC	(Lot 2663100)			+/-	133.2041	µg/mL	Unstressed
	Purity 99%				+/-	133.3510	µg/mL	Stressed
14	2,2-Dichloropropane		2,500.8	µg/mL	+/-	14.5396	µg/mL	Gravimetric
	CAS # 594-20-7.SEC	(Lot GI01)			+/-	133.0844	µg/mL	Unstressed
	Purity 99%				+/-	133.2312	µg/mL	Stressed
15	trans-1,2-Dichloroethene		2,500.2	µg/mL	+/-	14.5362	µg/mL	Gravimetric
	CAS # 156-60-5.SEC	(Lot TS5UB)			+/-	133.0538	µg/mL	Unstressed
	Purity 97%				+/-	133.2005	µg/mL	Stressed
16	Isobutanol (2-Methyl-1-propanol)		62,501.3	µg/mL	+/-	363.3687	µg/mL	Gravimetric
	CAS # 78-83-1.SEC	(Lot PH2XK)			+/-	3,326.1766	µg/mL	Unstressed
	Purity 99%				+/-	3,329.8447	µg/mL	Stressed
17	Methyl-tert-butyl ether (MTBE)		2,500.5	µg/mL	+/-	14.5381	µg/mL	Gravimetric
	CAS # 1634-04-4.SEC	(Lot ZAQTA-MS)			+/-	133.0711	µg/mL	Unstressed
	Purity 99%				+/-	133.2178	µg/mL	Stressed
18	Bromochloromethane		2,500.6	µg/mL	+/-	14.5388	µg/mL	Gravimetric
	CAS # 74-97-5.SEC	(Lot 345600)			+/-	133.0777	µg/mL	Unstressed
	Purity 99%				+/-	133.2245	µg/mL	Stressed
19	Tetrahydrofuran		5,002.3	µg/mL	+/-	29.0835	µg/mL	Gravimetric
	CAS # 109-99-9.SEC	(Lot XWFLA)			+/-	266.2087	µg/mL	Unstressed
	Purity 99%				+/-	266.5023	µg/mL	Stressed
20	1,1,1-Trichloroethane		2,501.9	µg/mL	+/-	14.5461	µg/mL	Gravimetric
	CAS # 71-55-6.SEC	(Lot 1103200)			+/-	133.1443	µg/mL	Unstressed
	Purity 99%				+/-	133.2911	µg/mL	Stressed
21	Cyclohexane		2,501.5	µg/mL	+/-	14.5439	µg/mL	Gravimetric
	CAS # 110-82-7.SEC	(Lot YADRA)			+/-	133.1243	µg/mL	Unstressed
	Purity 99%				+/-	133.2711	µg/mL	Stressed
22	1,1-Dichloropropene		2,501.1	µg/mL	+/-	14.5419	µg/mL	Gravimetric
	CAS # 563-58-6.SEC	(Lot 2028500)			+/-	133.1054	µg/mL	Unstressed
	Purity 97%				+/-	133.2522	µg/mL	Stressed
23	Carbon tetrachloride		2,501.9	µg/mL	+/-	14.5465	µg/mL	Gravimetric
	CAS # 56-23-5.SEC	(Lot 11466)			+/-	133.1477	µg/mL	Unstressed
	Purity 98%				+/-	133.2946	µg/mL	Stressed

24	n-Heptane (C7)		2,500.4	µg/mL	+/-	14.5374	µg/mL	Gravimetric
	CAS # 142-82-5.SEC	(Lot OGM01)			+/-	133.0644	µg/mL	Unstressed
	Purity 99%				+/-	133.2112	µg/mL	Stressed
25	1,2-Dichloroethane		2,501.9	µg/mL	+/-	14.5461	µg/mL	Gravimetric
	CAS # 107-06-2.SEC	(Lot FO6PK)			+/-	133.1443	µg/mL	Unstressed
	Purity 99%				+/-	133.2911	µg/mL	Stressed
26	Benzene		2,500.9	µg/mL	+/-	14.5403	µg/mL	Gravimetric
	CAS # 71-43-2.SEC	(Lot B28Y008)			+/-	133.0911	µg/mL	Unstressed
	Purity 99%				+/-	133.2378	µg/mL	Stressed
27	Trichloroethene		2,500.6	µg/mL	+/-	14.5387	µg/mL	Gravimetric
	CAS # 79-01-6.SEC	(Lot H04X050)			+/-	133.0760	µg/mL	Unstressed
	Purity 98%				+/-	133.2228	µg/mL	Stressed
28	Methylcyclohexane		2,500.5	µg/mL	+/-	14.5381	µg/mL	Gravimetric
	CAS # 108-87-2.SEC	(Lot 24MSD-CD)			+/-	133.0711	µg/mL	Unstressed
	Purity 99%				+/-	133.2178	µg/mL	Stressed
29	1,2-Dichloropropane		2,500.0	µg/mL	+/-	14.5352	µg/mL	Gravimetric
	CAS # 78-87-5.SEC	(Lot OGG01)			+/-	133.0445	µg/mL	Unstressed
	Purity 99%				+/-	133.1912	µg/mL	Stressed
30	Bromodichloromethane		2,501.5	µg/mL	+/-	14.5439	µg/mL	Gravimetric
	CAS # 75-27-4.SEC	(Lot 10171168)			+/-	133.1243	µg/mL	Unstressed
	Purity 99%				+/-	133.2711	µg/mL	Stressed
31	1,4-Dioxane		50,000.8	µg/mL	+/-	290.6935	µg/mL	Gravimetric
	CAS # 123-91-1.SEC	(Lot CHA4A)			+/-	2,660.9280	µg/mL	Unstressed
	Purity 99%				+/-	2,663.8624	µg/mL	Stressed
32	Dibromomethane		2,500.6	µg/mL	+/-	14.5388	µg/mL	Gravimetric
	CAS # 74-95-3.SEC	(Lot FGI01-OICH)			+/-	133.0777	µg/mL	Unstressed
	Purity 99%				+/-	133.2245	µg/mL	Stressed
33	cis-1,3-Dichloropropene		2,501.0	µg/mL	+/-	14.5410	µg/mL	Gravimetric
	CAS # 10061-01-5.SEC	(Lot 7ZLXJ-TJ)			+/-	133.0977	µg/mL	Unstressed
	Purity 99%				+/-	133.2445	µg/mL	Stressed
34	Toluene		2,500.1	µg/mL	+/-	14.5359	µg/mL	Gravimetric
	CAS # 108-88-3.SEC	(Lot YND2B-BD)			+/-	133.0511	µg/mL	Unstressed
	Purity 99%				+/-	133.1979	µg/mL	Stressed
35	Ethyl methacrylate		2,500.8	µg/mL	+/-	14.5396	µg/mL	Gravimetric
	CAS # 97-63-2.SEC	(Lot MLWYK-LS)			+/-	133.0844	µg/mL	Unstressed
	Purity 99%				+/-	133.2312	µg/mL	Stressed
36	trans-1,3-Dichloropropene		2,501.6	µg/mL	+/-	14.5444	µg/mL	Gravimetric
	CAS # 10061-02-6.SEC	(Lot 2ECIC-NM)			+/-	133.1282	µg/mL	Unstressed
	Purity 98%				+/-	133.2750	µg/mL	Stressed
37	1,1,2-Trichloroethane		2,501.0	µg/mL	+/-	14.5410	µg/mL	Gravimetric
	CAS # 79-00-5.SEC	(Lot 732700)			+/-	133.0977	µg/mL	Unstressed
	Purity 99%				+/-	133.2445	µg/mL	Stressed
38	1,3-Dichloropropane		2,500.8	µg/mL	+/-	14.5396	µg/mL	Gravimetric
	CAS # 142-28-9.SEC	(Lot AGN01-EFPC)			+/-	133.0844	µg/mL	Unstressed
	Purity 99%				+/-	133.2312	µg/mL	Stressed
39	Tetrachloroethene		2,500.0	µg/mL	+/-	14.5352	µg/mL	Gravimetric
	CAS # 127-18-4.SEC	(Lot F09W014)			+/-	133.0445	µg/mL	Unstressed
	Purity 99%				+/-	133.1912	µg/mL	Stressed

40	Dibromochloromethane **CAS #** 124-48-1.SEC **Purity** 97%	(Lot I13W021)	2,501.8	µg/mL	+/- 14.5454 +/- 133.1377 +/- 133.2845	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	1,2-Dibromoethane (EDB) **CAS #** 106-93-4.SEC **Purity** 98%	(Lot 1368400)	2,502.1	µg/mL	+/- 14.5472 +/- 133.1542 +/- 133.3011	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	Chlorobenzene **CAS #** 108-90-7.SEC **Purity** 99%	(Lot 1161936)	2,501.6	µg/mL	+/- 14.5447 +/- 133.1310 +/- 133.2778	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	1,1,1,2-Tetrachloroethane **CAS #** 630-20-6.SEC **Purity** 99%	(Lot GC01-QSHR)	2,500.8	µg/mL	+/- 14.5396 +/- 133.0844 +/- 133.2312	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	Ethylbenzene **CAS #** 100-41-4.SEC **Purity** 99%	(Lot PI4SE-GR)	2,500.3	µg/mL	+/- 14.5367 +/- 133.0578 +/- 133.2045	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	m-Xylene **CAS #** 108-38-3.SEC **Purity** 99%	(Lot OUKMG-GB)	1,250.4	µg/mL	+/- 7.2698 +/- 66.5422 +/- 66.6156	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	o-Xylene **CAS #** 95-47-6.SEC **Purity** 99%	(Lot FGL01-KTPK)	2,501.3	µg/mL	+/- 14.5425 +/- 133.1110 +/- 133.2578	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	p-Xylene **CAS #** 106-42-3.SEC **Purity** 99%	(Lot GM01)	1,251.6	µg/mL	+/- 7.2771 +/- 66.6087 +/- 66.6822	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Styrene **CAS #** 100-42-5.SEC **Purity** 99%	(Lot OFIOL-IA)	2,500.9	µg/mL	+/- 14.5403 +/- 133.0911 +/- 133.2378	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	Isopropylbenzene (cumene) **CAS #** 98-82-8.SEC **Purity** 99%	(Lot 2PHXG-IH)	2,501.3	µg/mL	+/- 14.5425 +/- 133.1110 +/- 133.2578	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	Bromoform **CAS #** 75-25-2.SEC **Purity** 99%	(Lot 1039300)	2,501.5	µg/mL	+/- 14.5439 +/- 133.1243 +/- 133.2711	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	1,1,2,2-Tetrachloroethane **CAS #** 79-34-5.SEC **Purity** 99%	(Lot CFA4D-AQ)	2,502.9	µg/mL	+/- 14.5519 +/- 133.1975 +/- 133.3444	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Chloroform **CAS #** 67-66-3.SEC **Purity** 99%	(Lot 1297547)	2,501.6	µg/mL	+/- 14.5447 +/- 133.1310 +/- 133.2778	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	1,2,3-Trichloropropane **CAS #** 96-18-4.SEC **Purity** 98%	(Lot OGI01)	2,501.9	µg/mL	+/- 14.5465 +/- 133.1477 +/- 133.2946	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	trans-1,4-Dichloro-2-butene **CAS #** 110-57-6.SEC **Purity** 97%	(Lot 100700-2)	2,502.7	µg/mL	+/- 14.5510 +/- 133.1893 +/- 133.3362	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	n-Propylbenzene **CAS #** 103-65-1.SEC **Purity** 99%	(Lot T2HFC-IT)	2,500.0	µg/mL	+/- 14.5352 +/- 133.0445 +/- 133.1912	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

56	Bromobenzene		2,501.6	µg/mL	+/-	14.5447	µg/mL	Gravimetric
	CAS # 108-86-1.SEC	(Lot 2FUHG-EM)			+/-	133.1310	µg/mL	Unstressed
	Purity 99%				+/-	133.2778	µg/mL	Stressed
57	1,2,4-Trimethylbenzene		2,502.4	µg/mL	+/-	14.5490	µg/mL	Gravimetric
	CAS # 95-63-6.SEC	(Lot SC7LO-QA)			+/-	133.1709	µg/mL	Unstressed
	Purity 99%				+/-	133.3177	µg/mL	Stressed
58	2-Chlorotoluene		2,500.5	µg/mL	+/-	14.5381	µg/mL	Gravimetric
	CAS # 95-49-8.SEC	(Lot SW8QG-AO)			+/-	133.0711	µg/mL	Unstressed
	Purity 99%				+/-	133.2178	µg/mL	Stressed
59	4-Chlorotoluene		2,500.3	µg/mL	+/-	14.5367	µg/mL	Gravimetric
	CAS # 106-43-4.SEC	(Lot P4XHJ-AO)			+/-	133.0578	µg/mL	Unstressed
	Purity 99%				+/-	133.2045	µg/mL	Stressed
60	tert-Butylbenzene		2,501.6	µg/mL	+/-	14.5447	µg/mL	Gravimetric
	CAS # 98-06-6.SEC	(Lot OGN01)			+/-	133.1310	µg/mL	Unstressed
	Purity 99%				+/-	133.2778	µg/mL	Stressed
61	1,3,5-Trimethylbenzene		2,500.3	µg/mL	+/-	14.5367	µg/mL	Gravimetric
	CAS # 108-67-8.SEC	(Lot FGH02-CMLN)			+/-	133.0578	µg/mL	Unstressed
	Purity 99%				+/-	133.2045	µg/mL	Stressed
62	sec-Butylbenzene		2,500.1	µg/mL	+/-	14.5359	µg/mL	Gravimetric
	CAS # 135-98-8.SEC	(Lot OGN01)			+/-	133.0511	µg/mL	Unstressed
	Purity 99%				+/-	133.1979	µg/mL	Stressed
63	4-Isopropyltoluene (p-cymene)		2,501.6	µg/mL	+/-	14.5447	µg/mL	Gravimetric
	CAS # 99-87-6.SEC	(Lot 1721700)			+/-	133.1310	µg/mL	Unstressed
	Purity 99%				+/-	133.2778	µg/mL	Stressed
64	1,3-Dichlorobenzene		2,501.5	µg/mL	+/-	14.5439	µg/mL	Gravimetric
	CAS # 541-73-1.SEC	(Lot FMDFD-KA)			+/-	133.1243	µg/mL	Unstressed
	Purity 99%				+/-	133.2711	µg/mL	Stressed
65	1,4-Dichlorobenzene		2,500.3	µg/mL	+/-	14.5367	µg/mL	Gravimetric
	CAS # 106-46-7.SEC	(Lot YWKDC-MK)			+/-	133.0578	µg/mL	Unstressed
	Purity 99%				+/-	133.2045	µg/mL	Stressed
66	n-Butylbenzene		2,500.6	µg/mL	+/-	14.5388	µg/mL	Gravimetric
	CAS # 104-51-8.SEC	(Lot OGN01)			+/-	133.0777	µg/mL	Unstressed
	Purity 99%				+/-	133.2245	µg/mL	Stressed
67	1,2-Dichlorobenzene		2,500.0	µg/mL	+/-	14.5352	µg/mL	Gravimetric
	CAS # 95-50-1.SEC	(Lot 4NRGF-OT)			+/-	133.0445	µg/mL	Unstressed
	Purity 99%				+/-	133.1912	µg/mL	Stressed
68	1,2-Dibromo-3-chloropropane		2,500.5	µg/mL	+/-	14.5383	µg/mL	Gravimetric
	CAS # 96-12-8.SEC	(Lot LC00408V)			+/-	133.0732	µg/mL	Unstressed
	Purity 97%				+/-	133.2199	µg/mL	Stressed
69	1,2,4-Trichlorobenzene		2,501.0	µg/mL	+/-	14.5410	µg/mL	Gravimetric
	CAS # 120-82-1.SEC	(Lot OGO01)			+/-	133.0977	µg/mL	Unstressed
	Purity 99%				+/-	133.2445	µg/mL	Stressed
70	Hexachlorobutadiene		2,501.0	µg/mL	+/-	14.5412	µg/mL	Gravimetric
	CAS # 87-68-3.SEC	(Lot 2009400)			+/-	133.0990	µg/mL	Unstressed
	Purity 97%				+/-	133.2458	µg/mL	Stressed
71	Naphthalene		2,500.5	µg/mL	+/-	14.5381	µg/mL	Gravimetric
	CAS # 91-20-3.SEC	(Lot 4KW3H-OO)			+/-	133.0711	µg/mL	Unstressed
	Purity 99%				+/-	133.2178	µg/mL	Stressed

72	1,2,3-Trichlorobenzene		2,502.4	µg/mL	+/-	14.5490	µg/mL	Gravimetric
	CAS # 87-61-6.SEC	(Lot A0043055)			+/-	133.1709	µg/mL	Unstressed
	Purity 99%				+/-	133.3177	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

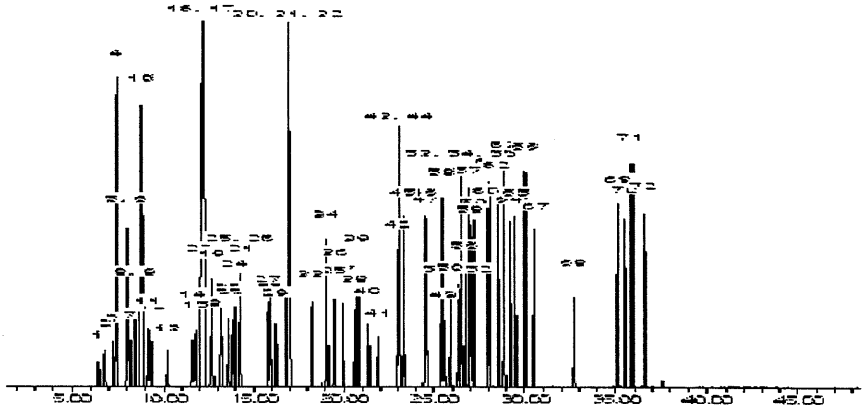
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Michael J Maye

Tyler Brown - QA Analyst

Date Mixed: 07-Jan-2015 **Balance:** 1127510105

Date Passed: 14-Jan-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MV8260MM_00080

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569720 **Lot No.:** A0108166

Description : 8260 List 1 / Std #1 MegaMix (2015)

8260 List 1 / Std #1 MegaMix (2015) 1250-62500 µg/ml, P&T Methanol, 1 ml/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2017 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Diethyl ether (ethyl ether)	2,521.3 µg/mL	+/- 14.6588 µg/mL	Gravimetric
	CAS # 60-29-7 (Lot SHBF3466V)		+/- 134.1754 µg/mL	Unstressed
	Purity 99%		+/- 134.3233 µg/mL	Stressed
2	1,1,2-Trichlorotrifluoroethane (CFC-113)	2,522.5 µg/mL	+/- 14.6660 µg/mL	Gravimetric
	CAS # 76-13-1 (Lot 00001135)		+/- 134.2419 µg/mL	Unstressed
	Purity 99%		+/- 134.3899 µg/mL	Stressed
3	1,1-Dichloroethane	2,499.5 µg/mL	+/- 14.5323 µg/mL	Gravimetric
	CAS # 75-34-3 (Lot Q179-33)		+/- 133.0173 µg/mL	Unstressed
	Purity 98%		+/- 133.1640 µg/mL	Stressed
4	tert-Butanol (TBA)	25,002.4 µg/mL	+/- 145.3584 µg/mL	Gravimetric
	CAS # 75-65-0 (Lot SHBC6893V)		+/- 1,330.5704 µg/mL	Unstressed
	Purity 99%		+/- 1,332.0378 µg/mL	Stressed
5	Iodomethane (methyl iodide)	2,510.0 µg/mL	+/- 14.5934 µg/mL	Gravimetric
	CAS # 74-88-4 (Lot SHBC7288V)		+/- 133.5767 µg/mL	Unstressed
	Purity 99%		+/- 133.7240 µg/mL	Stressed
6	Methyl acetate	12,505.4 µg/mL	+/- 72.7037 µg/mL	Gravimetric
	CAS # 79-20-9 (Lot SHBD7134V)		+/- 665.5101 µg/mL	Unstressed
	Purity 98%		+/- 666.2440 µg/mL	Stressed
7	Allyl chloride (3-chloropropene)	2,500.0 µg/mL	+/- 19.2743 µg/mL	Gravimetric
	CAS # 107-05-1 (Lot MKBG5777V)		+/- 133.6453 µg/mL	Unstressed
	Purity 99%		+/- 133.7914 µg/mL	Stressed

8	Methylene chloride (dichloromethane)		2,511.3	µg/mL	+/-	14.6006	µg/mL	Gravimetric
	CAS # 75-09-2	(Lot SHBD4974V)			+/-	133.6432	µg/mL	Unstressed
	Purity 99%				+/-	133.7906	µg/mL	Stressed
9	Carbon disulfide		2,511.7	µg/mL	+/-	14.6035	µg/mL	Gravimetric
	CAS # 75-15-0	(Lot C30Y997)			+/-	133.6693	µg/mL	Unstressed
	Purity 98%				+/-	133.8167	µg/mL	Stressed
10	Acrylonitrile		25,017.1	µg/mL	+/-	145.4441	µg/mL	Gravimetric
	CAS # 107-13-1	(Lot 10172706)			+/-	1,331.3554	µg/mL	Unstressed
	Purity 99%				+/-	1,332.8236	µg/mL	Stressed
11	cis-1,2-Dichloroethene		2,503.9	µg/mL	+/-	14.5577	µg/mL	Gravimetric
	CAS # 156-59-2	(Lot MKBG8424V)			+/-	133.2507	µg/mL	Unstressed
	Purity 99%				+/-	133.3977	µg/mL	Stressed
12	n-Hexane (C6)		2,511.9	µg/mL	+/-	14.6043	µg/mL	Gravimetric
	CAS # 110-54-3	(Lot SHBF0293V)			+/-	133.6764	µg/mL	Unstressed
	Purity 99%				+/-	133.8239	µg/mL	Stressed
13	1,1-dichloroethene		2,521.3	µg/mL	+/-	14.6588	µg/mL	Gravimetric
	CAS # 75-35-4	(Lot SHBD6170V)			+/-	134.1754	µg/mL	Unstressed
	Purity 99%				+/-	134.3233	µg/mL	Stressed
14	2,2-Dichloropropane		2,500.0	µg/mL	+/-	14.5351	µg/mL	Gravimetric
	CAS # 594-20-7	(Lot BCBH9246V)			+/-	133.0434	µg/mL	Unstressed
	Purity 98%				+/-	133.1901	µg/mL	Stressed
15	trans-1,2-Dichloroethene		2,505.0	µg/mL	+/-	14.5643	µg/mL	Gravimetric
	CAS # 156-60-5	(Lot MKBH9850V)			+/-	133.3106	µg/mL	Unstressed
	Purity 99%				+/-	133.4576	µg/mL	Stressed
16	Isobutanol (2-Methyl-1-propanol)		62,553.8	µg/mL	+/-	363.6739	µg/mL	Gravimetric
	CAS # 78-83-1	(Lot SHBF2852V)			+/-	3,328.9705	µg/mL	Unstressed
	Purity 99%				+/-	3,332.6417	µg/mL	Stressed
17	Methyl-tert-butyl ether (MTBE)		2,504.6	µg/mL	+/-	14.5621	µg/mL	Gravimetric
	CAS # 1634-04-4	(Lot SHBF1193V)			+/-	133.2906	µg/mL	Unstressed
	Purity 99%				+/-	133.4376	µg/mL	Stressed
18	Bromochloromethane		2,505.1	µg/mL	+/-	14.5650	µg/mL	Gravimetric
	CAS # 74-97-5	(Lot 00004559)			+/-	133.3172	µg/mL	Unstressed
	Purity 99%				+/-	133.4642	µg/mL	Stressed
19	Tetrahydrofuran		5,000.7	µg/mL	+/-	29.0746	µg/mL	Gravimetric
	CAS # 109-99-9	(Lot SHBF2660V)			+/-	266.1270	µg/mL	Unstressed
	Purity 97%				+/-	266.4204	µg/mL	Stressed
20	1,1,1-trichloroethane		2,508.1	µg/mL	+/-	14.5825	µg/mL	Gravimetric
	CAS # 71-55-6	(Lot B14Z1114)			+/-	133.4769	µg/mL	Unstressed
	Purity 99%				+/-	133.6241	µg/mL	Stressed
21	Cyclohexane		2,504.0	µg/mL	+/-	14.5585	µg/mL	Gravimetric
	CAS # 110-82-7	(Lot SHBD7873V)			+/-	133.2574	µg/mL	Unstressed
	Purity 99%				+/-	133.4043	µg/mL	Stressed
22	1,1-Dichloropropene		2,502.4	µg/mL	+/-	14.5493	µg/mL	Gravimetric
	CAS # 563-58-6	(Lot PR09161302)			+/-	133.1738	µg/mL	Unstressed
	Purity 98%				+/-	133.3207	µg/mL	Stressed
23	carbon tetrachloride		2,505.3	µg/mL	+/-	14.5657	µg/mL	Gravimetric
	CAS # 56-23-5	(Lot SHBC1410V)			+/-	133.3239	µg/mL	Unstressed
	Purity 99%				+/-	133.4709	µg/mL	Stressed

24	n-Heptane (C7)		2,501.4	µg/mL	+/-	14.5432	µg/mL	Gravimetric
	CAS # 142-82-5	(Lot SHBF2321V)			+/-	133.1177	µg/mL	Unstressed
	Purity 99%				+/-	133.2645	µg/mL	Stressed
25	1,2-Dichloroethane		2,501.6	µg/mL	+/-	14.5447	µg/mL	Gravimetric
	CAS # 107-06-2	(Lot SHBC6595V)			+/-	133.1310	µg/mL	Unstressed
	Purity 99%				+/-	133.2778	µg/mL	Stressed
26	Benzene		2,509.1	µg/mL	+/-	14.5883	µg/mL	Gravimetric
	CAS # 71-43-2	(Lot SHBD4617V)			+/-	133.5301	µg/mL	Unstressed
	Purity 99%				+/-	133.6774	µg/mL	Stressed
27	Trichloroethene		2,504.8	µg/mL	+/-	14.5628	µg/mL	Gravimetric
	CAS # 79-01-6	(Lot SHBF0943V)			+/-	133.2973	µg/mL	Unstressed
	Purity 99%				+/-	133.4443	µg/mL	Stressed
28	Methylcyclohexane		2,502.5	µg/mL	+/-	14.5498	µg/mL	Gravimetric
	CAS # 108-87-2	(Lot 50996APV)			+/-	133.1775	µg/mL	Unstressed
	Purity 99%				+/-	133.3244	µg/mL	Stressed
29	1,2-Dichloropropane		2,502.4	µg/mL	+/-	14.5490	µg/mL	Gravimetric
	CAS # 78-87-5	(Lot 01113D0V)			+/-	133.1709	µg/mL	Unstressed
	Purity 99%				+/-	133.3177	µg/mL	Stressed
30	bromodichloromethane		2,507.9	µg/mL	+/-	14.5814	µg/mL	Gravimetric
	CAS # 75-27-4	(Lot MKBL1617V)			+/-	133.4672	µg/mL	Unstressed
	Purity 98%				+/-	133.6144	µg/mL	Stressed
31	1,4-Dioxane		50,001.4	µg/mL	+/-	290.6971	µg/mL	Gravimetric
	CAS # 123-91-1	(Lot SHBF2002V)			+/-	2,660.9612	µg/mL	Unstressed
	Purity 99%				+/-	2,663.8957	µg/mL	Stressed
32	Dibromomethane		2,508.1	µg/mL	+/-	14.5825	µg/mL	Gravimetric
	CAS # 74-95-3	(Lot 10169264)			+/-	133.4769	µg/mL	Unstressed
	Purity 99%				+/-	133.6241	µg/mL	Stressed
33	cis-1,3-Dichloropropene		2,507.0	µg/mL	+/-	14.5759	µg/mL	Gravimetric
	CAS # 10061-01-5	(Lot 20936)			+/-	133.4170	µg/mL	Unstressed
	Purity 99%				+/-	133.5641	µg/mL	Stressed
34	Toluene		2,502.4	µg/mL	+/-	14.5490	µg/mL	Gravimetric
	CAS # 108-88-3	(Lot SHBF2730V)			+/-	133.1709	µg/mL	Unstressed
	Purity 99%				+/-	133.3177	µg/mL	Stressed
35	Ethyl methacrylate		2,500.9	µg/mL	+/-	14.5403	µg/mL	Gravimetric
	CAS # 97-63-2	(Lot 69796APV)			+/-	133.0911	µg/mL	Unstressed
	Purity 99%				+/-	133.2378	µg/mL	Stressed
36	trans-1,3-Dichloropropene		2,502.1	µg/mL	+/-	14.5476	µg/mL	Gravimetric
	CAS # 10061-02-6	(Lot C363110)			+/-	133.1576	µg/mL	Unstressed
	Purity 99%				+/-	133.3044	µg/mL	Stressed
37	1,1,2-Trichloroethane		2,507.5	µg/mL	+/-	14.5788	µg/mL	Gravimetric
	CAS # 79-00-5	(Lot FGB01)			+/-	133.4436	µg/mL	Unstressed
	Purity 99%				+/-	133.5908	µg/mL	Stressed
38	1,3-Dichloropropane		2,505.3	µg/mL	+/-	14.5657	µg/mL	Gravimetric
	CAS # 142-28-9	(Lot BCBG2162V)			+/-	133.3239	µg/mL	Unstressed
	Purity 99%				+/-	133.4709	µg/mL	Stressed
39	Tetrachloroethene		2,506.5	µg/mL	+/-	14.5730	µg/mL	Gravimetric
	CAS # 127-18-4	(Lot SHBD2073V)			+/-	133.3904	µg/mL	Unstressed
	Purity 99%				+/-	133.5375	µg/mL	Stressed

40	dibromochloromethane **CAS #** 124-48-1 **Purity** 98%	(Lot MKBP0459V)	2,503.2	µg/mL	+/- 14.5536 +/- 133.2129 +/- 133.3598	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	1,2-Dibromoethane (EDB) **CAS #** 106-93-4 **Purity** 99%	(Lot BCBH3877V)	2,504.3	µg/mL	+/- 14.5599 +/- 133.2707 +/- 133.4176	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	Chlorobenzene **CAS #** 108-90-7 **Purity** 99%	(Lot SHBD3200V)	2,510.8	µg/mL	+/- 14.5977 +/- 133.6166 +/- 133.7639	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	1,1,2,2-Tetrachloroethane **CAS #** 79-34-5 **Purity** 99%	(Lot CFA4D)	2,502.9	µg/mL	+/- 14.5519 +/- 133.1975 +/- 133.3444	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	Ethylbenzene **CAS #** 100-41-4 **Purity** 99%	(Lot SHBC9001V)	2,509.6	µg/mL	+/- 14.5912 +/- 133.5567 +/- 133.7040	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	m-Xylene **CAS #** 108-38-3 **Purity** 99%	(Lot SHBF1720V)	1,252.6	µg/mL	+/- 7.2829 +/- 66.6619 +/- 66.7355	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	o-Xylene **CAS #** 95-47-6 **Purity** 98%	(Lot SHBC8668V)	2,503.7	µg/mL	+/- 14.5565 +/- 133.2390 +/- 133.3859	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	p-Xylene **CAS #** 106-42-3 **Purity** 99%	(Lot SHBF3427V)	1,253.3	µg/mL	+/- 7.2865 +/- 66.6952 +/- 66.7688	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Styrene **CAS #** 100-42-5 **Purity** 99%	(Lot 10182421)	2,503.5	µg/mL	+/- 14.5556 +/- 133.2307 +/- 133.3777	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	Isopropylbenzene (cumene) **CAS #** 98-82-8 **Purity** 99%	(Lot 10169400)	2,502.5	µg/mL	+/- 14.5498 +/- 133.1775 +/- 133.3244	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	bromoform **CAS #** 75-25-2 **Purity** 99%	(Lot SHBC3410V)	2,507.8	µg/mL	+/- 14.5803 +/- 133.4569 +/- 133.6041	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	1,1,1,2-Tetrachloroethane **CAS #** 630-20-6 **Purity** 99%	(Lot MKBS3769V)	2,510.3	µg/mL	+/- 14.5948 +/- 133.5900 +/- 133.7373	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	chloroform **CAS #** 67-66-3 **Purity** 99%	(Lot SHBB7498V)	2,501.3	µg/mL	+/- 14.5425 +/- 133.1110 +/- 133.2578	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	1,2,3-Trichloropropane **CAS #** 96-18-4 **Purity** 99%	(Lot 1428739V)	2,502.5	µg/mL	+/- 14.5498 +/- 133.1775 +/- 133.3244	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	trans-1,4-dichloro-2-butene **CAS #** 110-57-6 **Purity** 96%	(Lot MKBP5371V)	2,499.5	µg/mL	+/- 14.5322 +/- 133.0168 +/- 133.1635	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	n-Propylbenzene **CAS #** 103-65-1 **Purity** 99%	(Lot MKBQ8049V)	2,500.3	µg/mL	+/- 14.5367 +/- 133.0578 +/- 133.2045	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

56	Bromobenzene		2,501.1	µg/mL	+/-	14.5418	µg/mL	Gravimetric
	CAS # 108-86-1	(Lot MKBD4032V)			+/-	133.1044	µg/mL	Unstressed
	Purity 99%				+/-	133.2511	µg/mL	Stressed
57	1,2,4-Trimethylbenzene		2,501.6	µg/mL	+/-	14.5444	µg/mL	Gravimetric
	CAS # 95-63-6	(Lot MKBJ1732V)			+/-	133.1282	µg/mL	Unstressed
	Purity 98%				+/-	133.2750	µg/mL	Stressed
58	2-Chlorotoluene		2,500.3	µg/mL	+/-	14.5367	µg/mL	Gravimetric
	CAS # 95-49-8	(Lot MKBH8892V)			+/-	133.0578	µg/mL	Unstressed
	Purity 99%				+/-	133.2045	µg/mL	Stressed
59	4-Chlorotoluene		2,506.4	µg/mL	+/-	14.5723	µg/mL	Gravimetric
	CAS # 106-43-4	(Lot MKBB7205V)			+/-	133.3837	µg/mL	Unstressed
	Purity 99%				+/-	133.5308	µg/mL	Stressed
60	tert-Butylbenzene		2,500.1	µg/mL	+/-	14.5359	µg/mL	Gravimetric
	CAS # 98-06-6	(Lot S52237V)			+/-	133.0511	µg/mL	Unstressed
	Purity 99%				+/-	133.1979	µg/mL	Stressed
61	1,3,5-Trimethylbenzene		2,503.1	µg/mL	+/-	14.5534	µg/mL	Gravimetric
	CAS # 108-67-8	(Lot BCBJ3305V)			+/-	133.2108	µg/mL	Unstressed
	Purity 99%				+/-	133.3577	µg/mL	Stressed
62	sec-Butylbenzene		2,504.0	µg/mL	+/-	14.5585	µg/mL	Gravimetric
	CAS # 135-98-8	(Lot MKBK3151V)			+/-	133.2574	µg/mL	Unstressed
	Purity 99%				+/-	133.4043	µg/mL	Stressed
63	p-Isopropyltoluene (p-Cymene)		2,501.1	µg/mL	+/-	14.5418	µg/mL	Gravimetric
	CAS # 99-87-6	(Lot MKBK4439V)			+/-	133.1044	µg/mL	Unstressed
	Purity 99%				+/-	133.2511	µg/mL	Stressed
64	1,3-Dichlorobenzene		2,506.1	µg/mL	+/-	14.5708	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBC1891V)			+/-	133.3704	µg/mL	Unstressed
	Purity 99%				+/-	133.5175	µg/mL	Stressed
65	1,4-Dichlorobenzene		2,507.0	µg/mL	+/-	14.5759	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBL3891V)			+/-	133.4170	µg/mL	Unstressed
	Purity 99%				+/-	133.5641	µg/mL	Stressed
66	n-Butylbenzene		2,502.6	µg/mL	+/-	14.5505	µg/mL	Gravimetric
	CAS # 104-51-8	(Lot 09418JJV)			+/-	133.1842	µg/mL	Unstressed
	Purity 99%				+/-	133.3311	µg/mL	Stressed
67	1,2-Dichlorobenzene		2,501.6	µg/mL	+/-	14.5447	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot 68996CMV)			+/-	133.1310	µg/mL	Unstressed
	Purity 99%				+/-	133.2778	µg/mL	Stressed
68	1,2-Dibromo-3-chloropropane		2,505.9	µg/mL	+/-	14.5694	µg/mL	Gravimetric
	CAS # 96-12-8	(Lot FBL01)			+/-	133.3571	µg/mL	Unstressed
	Purity 99%				+/-	133.5042	µg/mL	Stressed
69	1,2,4-Trichlorobenzene		2,501.5	µg/mL	+/-	14.5439	µg/mL	Gravimetric
	CAS # 120-82-1	(Lot 26896BM)			+/-	133.1243	µg/mL	Unstressed
	Purity 99%				+/-	133.2711	µg/mL	Stressed
70	Hexachlorobutadiene		2,501.6	µg/mL	+/-	14.5444	µg/mL	Gravimetric
	CAS # 87-68-3	(Lot K22W009)			+/-	133.1282	µg/mL	Unstressed
	Purity 98%				+/-	133.2750	µg/mL	Stressed
71	Naphthalene		2,502.6	µg/mL	+/-	14.5505	µg/mL	Gravimetric
	CAS # 91-20-3	(Lot MKBH4351V)			+/-	133.1842	µg/mL	Unstressed
	Purity 99%				+/-	133.3311	µg/mL	Stressed

72	1,2,3-Trichlorobenzene		2,503.4	µg/mL	+/-	14.5548	µg/mL	Gravimetric
	CAS # 87-61-6	(Lot 12912PFV)			+/-	133.2241	µg/mL	Unstressed
	Purity 99%				+/-	133.3710	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

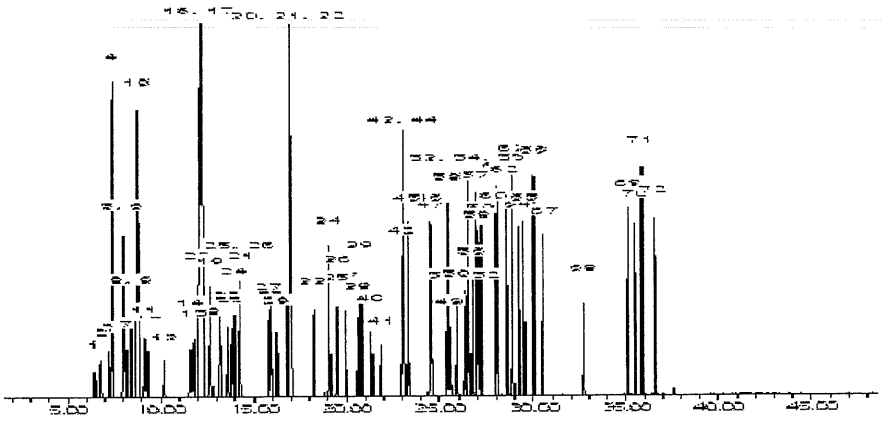
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kendra Swope - Mix Technician

Date Mixed: 07-Jan-2015 **Balance:** 1125113331

Tyler Brown - QA Analyst

Date Passed: 14-Jan-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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Certificate of Analysis

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567650 **Lot No.:** A0114901

Description : 8260 Surrogate Standard

8260 Surrogate Standard 2,500 ug/ml, P&T Methanol, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : October 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Dibromofluoromethane		2,509.4 µg/mL	+/- 14.5899	µg/mL	Gravimetric
	CAS # 1868-53-7	(Lot 022012)		+/- 140.6996	µg/mL	Unstressed
	Purity 99%			+/- 143.9918	µg/mL	Stressed
2	1,2-Dichloroethane-d4		2,509.0 µg/mL	+/- 14.5875	µg/mL	Gravimetric
	CAS # 17060-07-0	(Lot PR-25433)		+/- 140.6769	µg/mL	Unstressed
	Purity 98%			+/- 143.9686	µg/mL	Stressed
3	Toluene-d8		2,507.0 µg/mL	+/- 14.5759	µg/mL	Gravimetric
	CAS # 2037-26-5	(Lot PR-26282)		+/- 140.5650	µg/mL	Unstressed
	Purity 99%			+/- 143.8540	µg/mL	Stressed
4	1-Bromo-4-fluorobenzene (BFB)		2,503.6 µg/mL	+/- 14.5561	µg/mL	Gravimetric
	CAS # 460-00-4	(Lot 20401KOV)		+/- 140.3744	µg/mL	Unstressed
	Purity 99%			+/- 143.6590	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

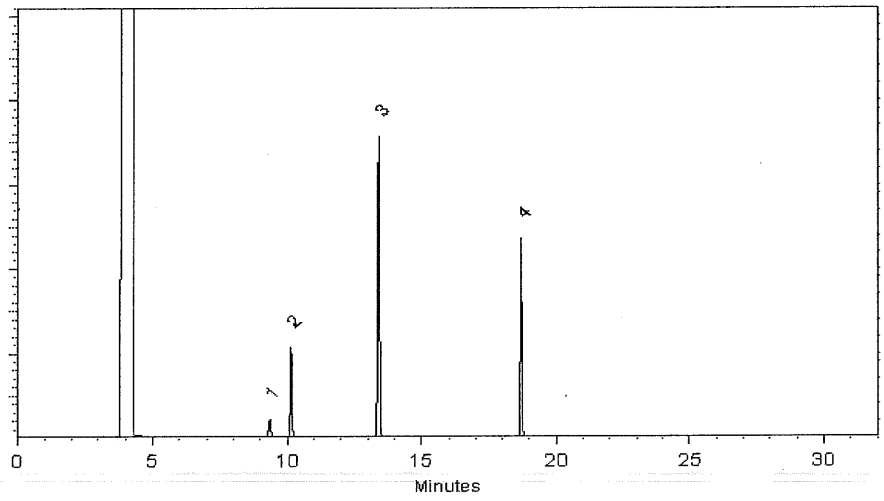
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham

Cheryl Graham - Mix Technician

Date Mixed: 22-Oct-2015 **Balance:** 1125113331

Jennifer L Pollino

Jennifer L. Pollino - QC Analyst

Date Passed: 26-Oct-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567650 **Lot No.:** A0114901

Description : 8260 Surrogate Standard

8260 Surrogate Standard 2,500 ug/ml, P&T Methanol, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : October 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Dibromofluoromethane **CAS #** 1868-53-7 (Lot 022012) **Purity** 99%	2,509.4 µg/mL	+/- 14.5899 µg/mL +/- 140.6996 µg/mL +/- 143.9918 µg/mL	Gravimetric Unstressed Stressed
2	1,2-Dichloroethane-d4 **CAS #** 17060-07-0 (Lot PR-25433) **Purity** 98%	2,509.0 µg/mL	+/- 14.5875 µg/mL +/- 140.6769 µg/mL +/- 143.9686 µg/mL	Gravimetric Unstressed Stressed
3	Toluene-d8 **CAS #** 2037-26-5 (Lot PR-26282) **Purity** 99%	2,507.0 µg/mL	+/- 14.5759 µg/mL +/- 140.5650 µg/mL +/- 143.8540 µg/mL	Gravimetric Unstressed Stressed
4	1-Bromo-4-fluorobenzene (BFB) **CAS #** 460-00-4 (Lot 20401KOV) **Purity** 99%	2,503.6 µg/mL	+/- 14.5561 µg/mL +/- 140.3744 µg/mL +/- 143.6590 µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

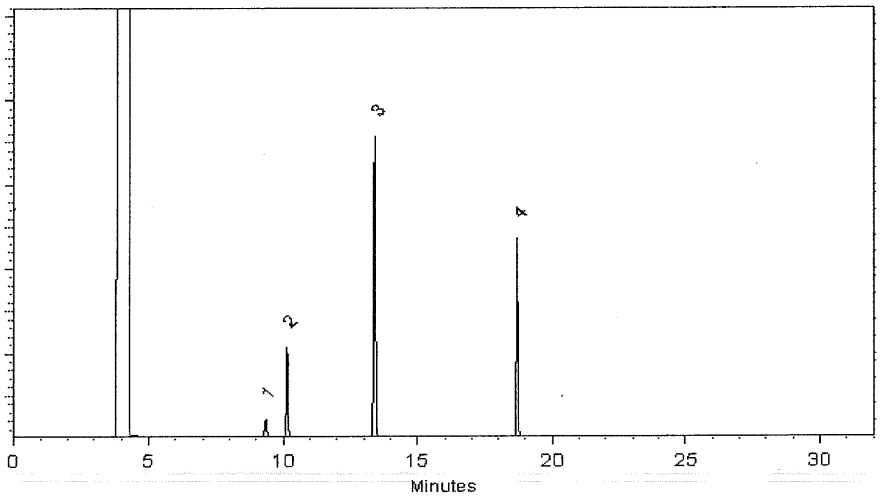
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham

Cheryl Graham - Mix Technician

Date Mixed: 22-Oct-2015 **Balance:** 1125113331

Jennifer L Pollino

Jennifer L. Pollino - QC Analyst

Date Passed: 26-Oct-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567650 **Lot No.:** A0114901

Description : 8260 Surrogate Standard

8260 Surrogate Standard 2,500 ug/ml, P&T Methanol, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : October 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Dibromofluoromethane **CAS #** 1868-53-7 **Purity** 99%	(Lot 022012)	2,509.4 µg/mL	+/- 14.5899 µg/mL +/- 140.6996 µg/mL +/- 143.9918 µg/mL	Gravimetric Unstressed Stressed
2	1,2-Dichloroethane-d4 **CAS #** 17060-07-0 **Purity** 98%	(Lot PR-25433)	2,509.0 µg/mL	+/- 14.5875 µg/mL +/- 140.6769 µg/mL +/- 143.9686 µg/mL	Gravimetric Unstressed Stressed
3	Toluene-d8 **CAS #** 2037-26-5 **Purity** 99%	(Lot PR-26282)	2,507.0 µg/mL	+/- 14.5759 µg/mL +/- 140.5650 µg/mL +/- 143.8540 µg/mL	Gravimetric Unstressed Stressed
4	1-Bromo-4-fluorobenzene (BFB) **CAS #** 460-00-4 **Purity** 99%	(Lot 20401KOV)	2,503.6 µg/mL	+/- 14.5561 µg/mL +/- 140.3744 µg/mL +/- 143.6590 µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

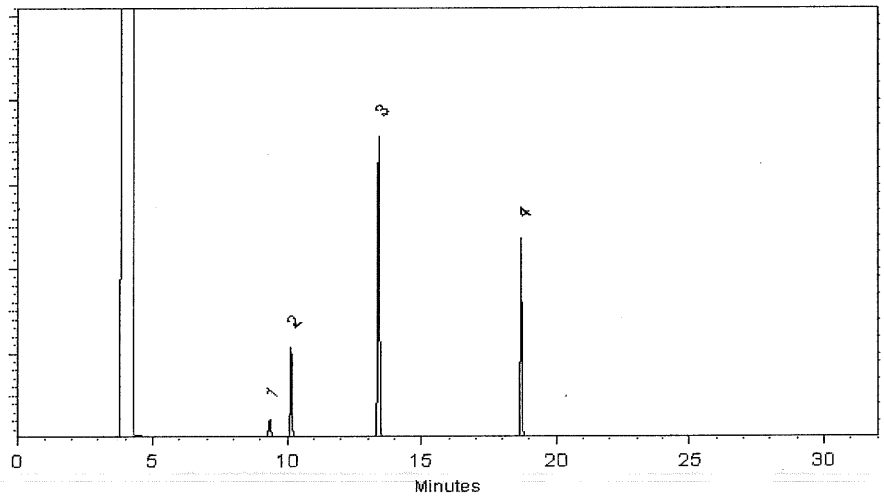
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham

Cheryl Graham - Mix Technician

Date Mixed: 22-Oct-2015 **Balance:** 1125113331

Jennifer L Pollino

Jennifer L. Pollino - QC Analyst

Date Passed: 26-Oct-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569722 **Lot No.:** A0115012

Description : 8260 List 1 / Std #3 Gases (2015)

8260 List 1 / Std #3 Gases (2015) 2,500 ug/ml, P&T Methanol, 1 ml/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2018 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Dichlorodifluoromethane (CFC-12) **CAS #** 75-71-8 **Purity** 99% (Lot Q167-08)	2,502.3 µg/mL	+/- 17.1236 µg/mL +/- 140.5935 µg/mL +/- 143.8698 µg/mL	Gravimetric Unstressed Stressed
2	Chloromethane (methyl chloride) **CAS #** 74-87-3 **Purity** 99% (Lot SHBF7067V)	2,506.2 µg/mL	+/- 15.8909 µg/mL +/- 140.6631 µg/mL +/- 143.9478 µg/mL	Gravimetric Unstressed Stressed
3	Vinyl chloride **CAS #** 75-01-4 **Purity** 99% (Lot 25LPST)	2,507.2 µg/mL	+/- 16.0743 µg/mL +/- 140.7405 µg/mL +/- 144.0261 µg/mL	Gravimetric Unstressed Stressed
4	1,3-Butadiene **CAS #** 106-99-0 **Purity** 99% (Lot SHBF3387V)	2,517.0 µg/mL	+/- 17.1894 µg/mL +/- 141.4157 µg/mL +/- 144.7114 µg/mL	Gravimetric Unstressed Stressed
5	Bromomethane (methyl bromide) **CAS #** 74-83-9 **Purity** 99% (Lot 101604)	2,511.3 µg/mL	+/- 17.3826 µg/mL +/- 141.1222 µg/mL +/- 144.4097 µg/mL	Gravimetric Unstressed Stressed
6	Chloroethane (ethyl chloride) **CAS #** 75-00-3 **Purity** 99% (Lot SHBD1717V)	2,497.4 µg/mL	+/- 16.0992 µg/mL +/- 140.2015 µg/mL +/- 143.4741 µg/mL	Gravimetric Unstressed Stressed
7	Dichlorofluoromethane (CFC-21) **CAS #** 75-43-4 **Purity** 99% (Lot Q9B-58)	2,516.3 µg/mL	+/- 19.2032 µg/mL +/- 141.6354 µg/mL +/- 144.9242 µg/mL	Gravimetric Unstressed Stressed

8	Trichlorofluoromethane (CFC-11) **CAS #** 75-69-4 **Purity** 99%	(Lot SHBF6387V)	2,512.2 µg/mL	+/- 18.6489 +/- 141.3341 +/- 144.6191	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

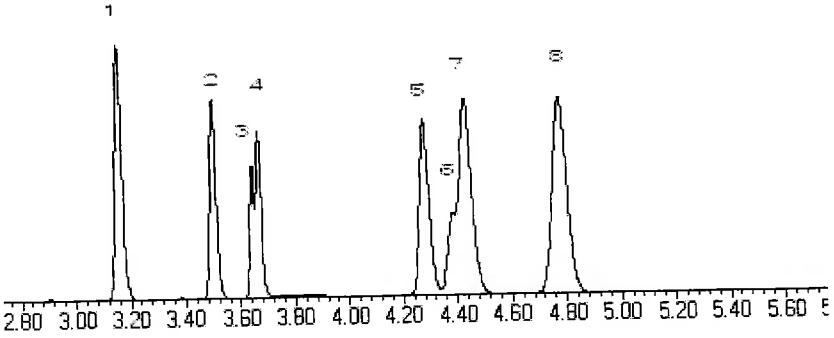
Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kendra Swope - Mix Technician **Date Mixed:** 29-Oct-2015 **Balance:** 1125113331

Jennifer L. Pollino - QC Analyst **Date Passed:** 02-Nov-2015

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568718 **Lot No.:** A0113246

Description : 8260 Internal Standard 2014

8260 Internal Standard 2014 250-5,000 ug/ml, P&T Methanol, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	tert-Butyl-d9-alcohol **CAS #** 25725-11-5 **Purity** 99% (Lot I201P18)	5,000.4 µg/mL	+/- 29.0712 µg/mL +/- 106.0450 µg/mL +/- 106.5155 µg/mL	Gravimetric Unstressed Stressed
2	2-Butanone-d5 **CAS #** 24313-50-6 **Purity** 99% (Lot M276P24)	1,250.2 µg/mL	+/- 7.2688 µg/mL +/- 26.5135 µg/mL +/- 26.6311 µg/mL	Gravimetric Unstressed Stressed
3	Fluorobenzene **CAS #** 462-06-6 **Purity** 99% (Lot BCBK8171V)	250.2 µg/mL	+/- 1.4580 µg/mL +/- 5.3070 µg/mL +/- 5.3305 µg/mL	Gravimetric Unstressed Stressed
4	1,4-Dioxane-d8 **CAS #** 17647-74-4 **Purity** 98% (Lot I-19073)	5,000.6 µg/mL	+/- 29.0727 µg/mL +/- 106.0502 µg/mL +/- 106.5208 µg/mL	Gravimetric Unstressed Stressed
5	Chlorobenzene-d5 **CAS #** 3114-55-4 **Purity** 99% (Lot PR-23926)	250.4 µg/mL	+/- 1.4592 µg/mL +/- 5.3113 µg/mL +/- 5.3348 µg/mL	Gravimetric Unstressed Stressed
6	1,4-Dichlorobenzene-d4 **CAS #** 3855-82-1 **Purity** 99% (Lot PR-18488)	250.0 µg/mL	+/- 1.4569 µg/mL +/- 5.3028 µg/mL +/- 5.3263 µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

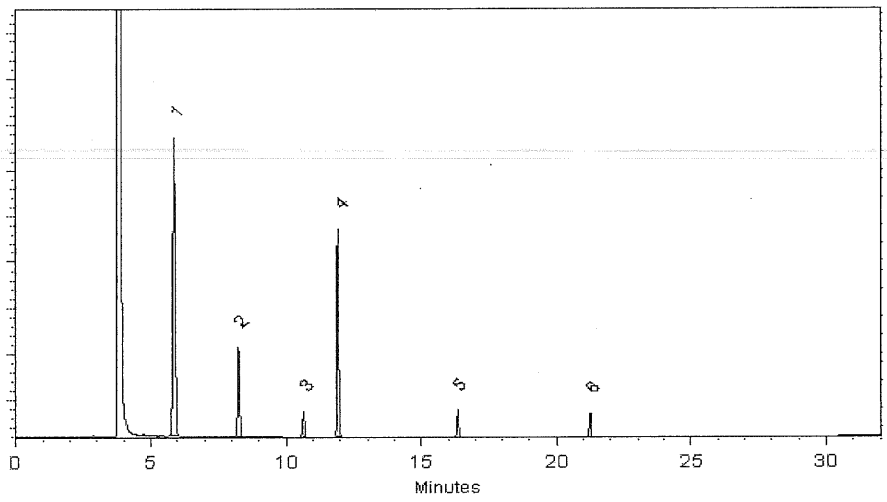
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

F. Joseph Tallon - Mix Technician

Date Mixed: 12-Aug-2015 **Balance:** B251644995

Jennifer L. Pollino - QC Analyst

Date Passed: 14-Aug-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568718 **Lot No.:** A0118105

Description : 8260 Internal Standard 2014

8260 Internal Standard 2014 250-5,000 ug/ml, P&T Methanol, 5 ml/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : March 31, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)		
1	tert-Butyl-d9-alcohol **CAS #** 25725-11-5 **Purity** 99%	(Lot I201P6)	5,023.8	µg/mL	+/- 29.2073 +/- 107.5597 +/- 110.6867	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	2-Butanone-d5 **CAS #** 24313-50-6 **Purity** 99%	(Lot M276)	1,251.1	µg/mL	+/- 7.2740 +/- 26.7862 +/- 27.5649	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Fluorobenzene **CAS #** 462-06-6 **Purity** 99%	(Lot BCBK8171V)	250.2	µg/mL	+/- 1.4578 +/- 5.3567 +/- 5.5123	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	1,4-Dioxane-d8 **CAS #** 17647-74-4 **Purity** 99%	(Lot I-19239)	5,005.7	µg/mL	+/- 29.1020 +/- 107.1722 +/- 110.2879	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Chlorobenzene-d5 **CAS #** 3114-55-4 **Purity** 99%	(Lot PR-23926)	250.1	µg/mL	+/- 1.4575 +/- 5.3556 +/- 5.5112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	1,4-Dichlorobenzene-d4 **CAS #** 3855-82-1 **Purity** 99%	(Lot PR-18488)	250.0	µg/mL	+/- 1.4566 +/- 5.3524 +/- 5.5079	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

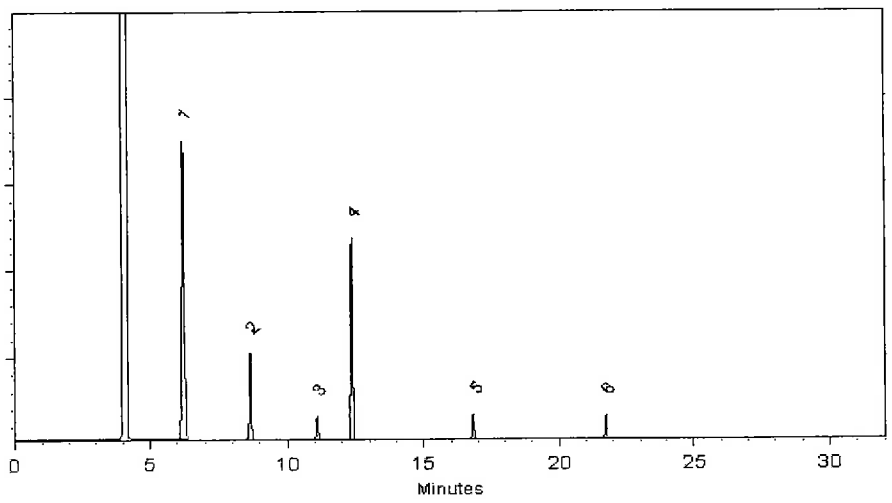
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Cook - Mix Technician

Date Mixed: 16-Mar-2016 **Balance:** 1125113331

Jennifer L. Pollino - QC Analyst

Date Passed: 18-Mar-2016

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569721 **Lot No.:** A0113194

Description : 8260 List 1/ Std #2 Ketones (2015)

8260 List 1/ Std #2 Ketones (2015) 12,500 µg/ml, P&T Methanol/Water (90:10), 1 ml/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2018 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Acetone		12,510.0 µg/mL	+/- 73.2488 µg/mL	Gravimetric
	CAS # 67-64-1	(Lot 07196AK)		+/- 665.8110 µg/mL	Unstressed
	Purity 99%			+/- 666.5452 µg/mL	Stressed
2	2-Butanone (MEK)		12,527.5 µg/mL	+/- 73.3513 µg/mL	Gravimetric
	CAS # 78-93-3	(Lot BCBK4358V)		+/- 666.7424 µg/mL	Unstressed
	Purity 99%			+/- 667.4776 µg/mL	Stressed
3	4-Methyl-2-pentanone (MIBK)		12,503.0 µg/mL	+/- 73.2078 µg/mL	Gravimetric
	CAS # 108-10-1	(Lot SHBF5332V)		+/- 665.4385 µg/mL	Unstressed
	Purity 99%			+/- 666.1722 µg/mL	Stressed
4	2-Hexanone		12,509.0 µg/mL	+/- 73.2429 µg/mL	Gravimetric
	CAS # 591-78-6	(Lot MKBN7380V)		+/- 665.7578 µg/mL	Unstressed
	Purity 99%			+/- 666.4919 µg/mL	Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

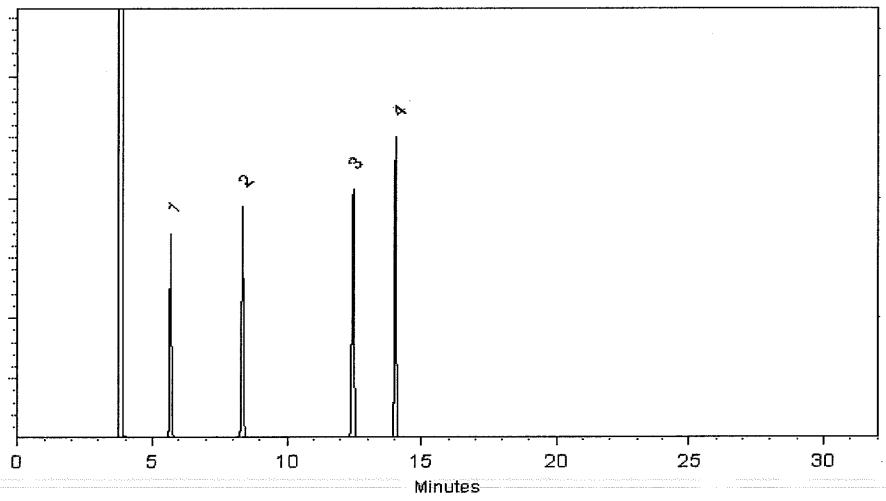
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kendra Swope - Mix Technician

Date Mixed: 11-Aug-2015 **Balance:** 1125113331

Jennifer L. Pollino - QC Analyst

Date Passed: 13-Aug-2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MVVA_00106

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569724 **Lot No.:** A0118759

Description : 8260 List 1 / Std #6 Vinyl Acetate (2015)

8260 List 1 / Std #6 Vinyl Acetate (2015) 5000 ug/ml, P&T Methanol, 1 ml/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2016 **Storage:** 0°C or colder

Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Vinyl acetate	5,002.0 µg/mL	+/- 29.3545	µg/mL	Gravimetric
	CAS # 108-05-4 (Lot STBD7333V)		+/- 301.8192	µg/mL	Unstressed
	Purity 99%		+/- 302.5356	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

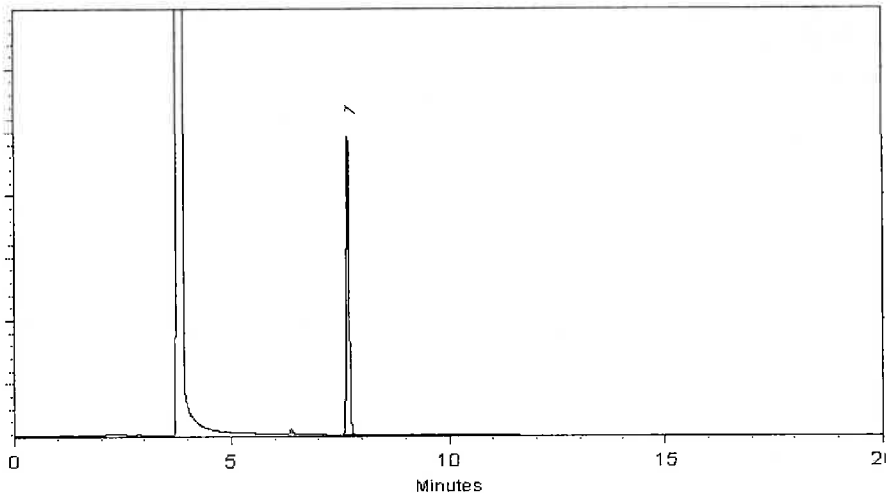
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

F. Joseph Talton - Mix Technician

Date Mixed: 18-Apr-2016 **Balance:** B251644995

Jodi E. Breon - QA Analyst

Date Passed: 20-Apr-2016

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

TACA 1_00006

INORGANIC™ VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com
tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

Roc' 5/6/16

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 843.01 ACCREDITED Reference Material Producer Certificate 853.02

open 5/8/16

EXP. 5/8/2017

TACA1-0006

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TACA-1-REV2
Lot Number:	K2-MEB627068
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	500 mg/L ea:

Aluminum,	Boron,	Calcium,
Iron,	Potassium,	Magnesium,
Sodium,	Phosphorus,	
100 mg/L ea:		
Arsenic,	Barium,	Beryllium,
Cadmium,	Cerium,	Cobalt,
Chromium+3,	Copper,	Gadolinium,
Lithium,	Manganese,	Nickel,
Lead,	Selenium,	Strontium,
Uranium,	Vanadium,	Zinc,
25 mg/L ea:		
Silver,	Thallium	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	499.9 ± 2.3 mg/L	Arsenic, As	100.0 ± 0.8 mg/L
Barium, Ba	100.0 ± 0.4 mg/L	Beryllium, Be	100.0 ± 0.6 mg/L
Boron, B	500.0 ± 4.0 mg/L	Cadmium, Cd	100.0 ± 0.4 mg/L
Calcium, Ca	500.0 ± 2.8 mg/L	Cerium, Ce	100.0 ± 0.4 mg/L
Chromium+3, Cr3	100.0 ± 0.5 mg/L	Cobalt, Co	100.0 ± 0.5 mg/L
Copper, Cu	100.0 ± 0.5 mg/L	Gadolinium, Gd	100.0 ± 0.6 mg/L
Iron, Fe	499.9 ± 2.0 mg/L	Lead, Pb	100.0 ± 0.5 mg/L
Lithium, Li	100.0 ± 0.4 mg/L	Magnesium, Mg	500.0 ± 2.8 mg/L
Manganese, Mn	100.0 ± 0.5 mg/L	Nickel, Ni	100.0 ± 0.5 mg/L
Phosphorus, P	500.0 ± 2.2 mg/L	Potassium, K	500.0 ± 2.7 mg/L
Selenium, Se	100.0 ± 0.6 mg/L	Silver, Ag	25.00 ± 0.15 mg/L
Sodium, Na	500.0 ± 2.7 mg/L	Strontium, Sr	100.0 ± 0.5 mg/L
Thallium, Tl	25.00 ± 0.18 mg/L	Uranium, U	100.0 ± 0.5 mg/L
Vanadium, V	100.0 ± 0.5 mg/L	Zinc, Zn	100.0 ± 0.5 mg/L

Certified Density: 1.045 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	ICP Assay	3112a	030730Cr3
Cr3	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	011017
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Gd	EDTA	928	928
Gd	ICP Assay	3118a	992004
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	000505
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric		traceable to 84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
Tl	ICP Assay	3158	993012
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2

V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.6 ± 0.1
Uranium 235U	0.37 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 29, 2016

- The certification is valid within the measurement uncertainly specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 29, 2019

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/8/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

TACA 1_00007

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

Rec'd 8/9/16
open 8/9/16
exp 8/9/17

700348
ID: TACA 1_00007
Exp: 08/09/17 Prpd: CV1
6020 TACA-1 Multi Metal

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TACA-1-REV2
Lot Number:	K2-MEB650788
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	500 mg/L ea:

Aluminum,	Boron,	Calcium,
Iron,	Potassium,	Magnesium,
Sodium,	Phosphorus,	
100 mg/L ea:		
Arsenic,	Barium,	Beryllium,
Cadmium,	Cerium,	Cobalt,
Chromium+3,	Copper,	Gadolinium,
Lithium,	Manganese,	Nickel,
Lead,	Selenium,	Strontium,
Uranium,	Vanadium,	Zinc,
25 mg/L ea:		
Silver,	Thallium	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	499.9 ± 2.3 mg/L	Arsenic, As	100.0 ± 0.9 mg/L
Barium, Ba	100.0 ± 0.4 mg/L	Beryllium, Be	100.0 ± 0.6 mg/L
Boron, B	500.0 ± 2.9 mg/L	Cadmium, Cd	100.0 ± 0.6 mg/L
Calcium, Ca	500.0 ± 1.9 mg/L	Cerium, Ce	100.0 ± 0.4 mg/L
Chromium+3, Cr3	100.0 ± 0.5 mg/L	Cobalt, Co	100.0 ± 0.5 mg/L
Copper, Cu	100.0 ± 0.5 mg/L	Gadolinium, Gd	100.0 ± 0.6 mg/L
Iron, Fe	500.0 ± 2.0 mg/L	Lead, Pb	100.0 ± 0.5 mg/L
Lithium, Li	100.0 ± 0.4 mg/L	Magnesium, Mg	500.0 ± 2.0 mg/L
Manganese, Mn	100.0 ± 0.5 mg/L	Nickel, Ni	100.0 ± 0.5 mg/L
Phosphorus, P	500.0 ± 2.2 mg/L	Potassium, K	500.0 ± 1.8 mg/L
Selenium, Se	100.0 ± 0.7 mg/L	Silver, Ag	25.00 ± 0.11 mg/L
Sodium, Na	500.0 ± 1.8 mg/L	Strontium, Sr	100.0 ± 0.4 mg/L
Thallium, Tl	25.00 ± 0.18 mg/L	Uranium, U	100.0 ± 0.6 mg/L
Vanadium, V	100.0 ± 0.5 mg/L	Zinc, Zn	100.0 ± 0.5 mg/L

Certified Density: 1.045 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	ICP Assay	3112a	030730
Cr3	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Gd	EDTA	928	928
Gd	ICP Assay	3118a	992004
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	000505
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
Tl	ICP Assay	3158	993012
U	ICP Assay	3164	080521
V	EDTA	928	928
V	ICP Assay	3165	992706

Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.7 ± 0.1
Uranium 235U	0.28 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 29, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 29, 2019

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Reagent

TACA 2_00007

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

[illegible]
[illegible]
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 583.01 — ACCREDITED Reference Material Producer Certificate 583.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TACA-2-REV1
Lot Number:	K2-MEB650789
Matrix:	10% (v/v) HCl tr. HF
Value / Analyte(s):	100 mg/L ea: Gold, Molybdenum, Antimony, Tin, Titanium

Rec'd 8/9/16 open 8/9/16 Exp. 8/9/17

700349
ID TACA 2_00007
Exp. 08/09/17 Prod. CV1
6020 TACA-2 Multi Metal

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.7 mg/L	Gold, Au	100.0 ± 0.5 mg/L
Molybdenum, Mo	100.0 ± 0.5 mg/L	Tin, Sn	100.0 ± 0.6 mg/L
Titanium, Ti	100.0 ± 0.6 mg/L		

Certified Density: 1.019 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Au	ICP Assay	3121	991806
Au	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102A	061229
Sn	ICP Assay	3161a	070330
Ti	ICP Assay	3162a	060808

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

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$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

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CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

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N/A

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- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

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- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 29, 2016

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11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Reagent

8151 LCS_00082

Preliminary Report

TestAmerica Denver

LCS, Lab Control Sample Report

Sample Path: \\ChromNA\Denver\ChromData\SGC_M\20160923-51183.b\M0923017.D
Lims ID: 8151 LCS_00082 Inj. Date: 23-Sep-2016 15:52:35
Worklist ID: 280-0051183-017 Instrument: SGC_M
Method: 8151_615

* NOT VALID FOR DINOSEB

Soils only 9-30-16

Detector 1: GC ECD1A

Compound	Amount Added	Amount Recovered	%Rec	Limits 1 8151A_AP	Limits 2 8151A_AP	Limits 3 8151A_AP
2 Dalapon	0.5000	0.4269	85.4	52-119	19-139	
4 Dicamba	0.5000	0.3844	76.9	50-128	50-141	
5 MCPP	50.0	46.4	92.7	45-121	33-157	
6 MCPA	50.0	40.5	80.9	43-118	35-144	
7 Dichlorprop	0.5000	0.3951	79.0	44-121	46-159	
8 2,4-D	0.5000	0.3998	80.0	46-126	45-152	13-115
9 Silvex (2,4,5-TP)	0.5000	0.4347	86.9	48-127	51-134	10-158
10 2,4,5-T	0.5000	0.4442	88.8	45-135	42-147	10-122
11 Dinoseb	0.5000	0.2561	51.2	25-132	10-142	*
12 2,4-DB	0.5000	0.4715	94.3	18-135	35-153	
13 Picloram	0.5000	0.3090	61.8	20-111		

Detector 2: GC ECD2B

Compound	Amount Added	Amount Recovered	%Rec	Limits 1 8151A_AP	Limits 2 8151A_AP	Limits 3 8151A_AP
2 Dalapon	0.5000	0.4184	83.7	52-119	19-139	
4 Dicamba	0.5000	0.3802	76.0	50-128	50-141	
5 MCPP	50.0	40.8	81.6	45-121	33-157	
6 MCPA	50.0	38.6	77.2	43-118	35-144	
7 Dichlorprop	0.5000	0.3869	77.4	44-121	46-159	
8 2,4-D	0.5000	0.4027	80.5	46-126	45-152	13-115
9 Silvex (2,4,5-TP)	0.5000	0.4257	85.1	48-127	51-134	10-158
10 2,4,5-T	0.5000	0.4485	89.7	45-135	42-147	10-122
11 Dinoseb	0.5000	0.2226	44.5	25-132	10-142	*
12 2,4-DB	0.5000	0.5556	111.1	18-135	35-153	
13 Picloram	0.5000	0.2799	56.0	20-111		

FAILS CRITERIA HAS TO BE ≥ 50%

Samples for Limit Group: 1, Lims Prep Method: 8151A_AP

280-87724-G-3-A
280-88043-D-3-A
280-88027-C-3-A
280-88027-C-6-A
280-88097-D-1-A
280-88043-J-1-A
280-88043-J-4-A
280-88027-A-4-A
280-88027-C-7-A
280-88043-E-2-A
280-88027-A-1-A
280-88027-C-5-A
280-88141-D-1-A

Samples for Limit Group: 2, Lims Prep Method: 8151A_AP

320-21502-J-2-A
320-21502-H-3-A
320-21502-G-4-A

Samples for Limit Group: 3, Lims Prep Method: 8151A_AP

280-88022-C-1-H
280-88022-C-2-J
280-88115-A-2-G

Report Date: 30-Sep-2016 13:24:05 Chrom Revision: 2.2 08-Sep-2016 14:45:52

Preliminary Report

TestAmerica Denver

LCS, Lab Control Sample Report

Sample Path: \\ChromNA\Denver\ChromData\SGC_M\20160923-51183.b\M0923017.D
Lims ID: 8151 LCS_00082 Inj. Date: 23-Sep-2016 15:52:35
Worklist ID: 280-0051183-017 Instrument: SGC_M
Method: 8151_615

* NOT VALID FOR DINOSEB - Calc 11/9/16 Incorrect - Pattern Soils only 9-30-16 11/9/16 with + Soils

Detector 1: GC ECD1A

Compound	Amount Added	Amount Recovered	%Rec	Limits 1 8151A_AP	Limits 2 8151A_AP	Limits 3 8151A_AP
2 Dalapon	0.5000	0.4269	85.4	52-119	19-139	
4 Dicamba	0.5000	0.3844	76.9	50-128	50-141	
5 MCPP	50.0	46.4	92.7	45-121	33-157	
6 MCPA	50.0	40.5	80.9	43-118	35-144	
7 Dichlorprop	0.5000	0.3951	79.0	44-121	46-159	
8 2,4-D	0.5000	0.3998	80.0	46-126	45-152	13-115
9 Silvex (2,4,5-TP)	0.5000	0.4347	86.9	48-127	51-134	10-158
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11 Dinoseb	0.5000	0.2561	51.2	25-132	10-142	*
12 2,4-DB	0.5000	0.4715	94.3	18-135	35-153	
13 Picloram	0.5000	0.3090	61.8	20-111		

Detector 2: GC ECD2B

Compound	Amount Added	Amount Recovered	%Rec	Limits 1 8151A_AP	Limits 2 8151A_AP	Limits 3 8151A_AP
2 Dalapon	0.5000	0.4184	83.7	52-119	19-139	
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11 Dinoseb	0.5000	0.2226	44.5	25-132	10-142	*
12 2,4-DB	0.5000	0.5556	111.1	18-135	35-153	
13 Picloram	0.5000	0.2799	56.0	20-111		

FAILS Criteria has to be ≥ 50% 11/9/16 Cdl

Samples for Limit Group: 1, Lims Prep Method: 8151A_AP

280-87724-G-3-A
280-88043-D-3-A
280-88027-C-3-A
280-88027-C-6-A
280-88097-D-1-A
280-88043-J-1-A
280-88043-J-4-A
280-88027-A-4-A
280-88027-C-7-A
280-88043-E-2-A
280-88027-A-1-A
280-88027-C-5-A
280-88141-D-1-A

Samples for Limit Group: 2, Lims Prep Method: 8151A_AP

320-21502-J-2-A
320-21502-H-3-A
320-21502-G-4-A

Samples for Limit Group: 3, Lims Prep Method: 8151A_AP

280-88022-C-1-H
280-88022-C-2-J
280-88115-A-2-G

Reagent

8151-SurStock_00061

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567804 **Lot No.:** A0115599

Description : DCAA Standard

DCAA Standard 1,000 µg/ml, Methanol, 1 ml/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2017 **Storage:** 10°C or colder

Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2,4-dichlorophenylacetic acid CAS # 19719-28-9 (Lot S30618V) Purity 99%	1,004.7 µg/mL	+/- 5.9674 µg/mL +/- 53.4489 µg/mL +/- 53.5384 µg/mL		Gravimetric Unstressed Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

[60-61]

Reagent

8151_LCS_Stck_00013

AccuStandard, Inc.
125 Market Street • New Haven, CT 06513 • USA
Tel (203) 786-5290 • Fax (203) 786-5287
Website www.accustandard.com

Order No:
539235

Sold to TestAmerica
4101 Shuffel ST NW
North Canton, OH 44720

11/14/2016

Customer No. 02207

FOB	Terms:	Order Date	Shipped Via:	Purchase Order	NO. PKGS: 1	LBS: 2
New Haven, CT	Net 30	5/10/16 8:56 AM	Fed Ex P-1	2647142		

Ln	Qty	Canc.	Ship	Bo	Catalog No.	Lot NO.	Description	Unit Size	Storage
1	10		10		S-66380	216051191	Custom Herbicide Standard	1 mL	REFRIG (0-5 °
2	10		10		S-66380-R1	216051154	Custom Herbicide Standard	1 mL	REFRIG (0-5 °

Page 382 of 1575

6-16-16

Line Items 2
Pieces: 20 Michael Ellum

Processed By: JD
Checked By:

Packing List 6/1/2016

QR-OFF-015
Rev. 01/16

AccuStandard, Inc.
125 Market Street • New Haven, CT 06513 • USA
Tel (203) 786-5290 • Fax (203) 786-5287
Website www.accustandard.com

Order No:
540230

Sold to TestAmerica
4101 Shuffel ST NW
North Canton, OH 44720

Customer No. 02207

FOB	Terms:	Order Date	Shipped Via:	Purchase Order	NO. PKGS:	LBS: 1
New Haven, CT	Net 30	5/26/16 4:33 PM	UPS Ground	2649020		

Ln	Qty	Canc.	Ship	Bo	Catalog No.	Lot NO.	Description	Unit Size	Storage
1	4		4		CLP-BNS-3-2X	215051398	4-Terphenyl-d14	1 mL	AMBIENT (>5

6-6-16

Line Items 1
Pieces: 4 Susan Cavalier

Processed By: N.O.
Checked By:

Packing List 5/27/2016

QR-OFF-015
Rev. 01/16

11/14/2016

Reagent

8151ResMix#1_00005

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED ISO Guide 34 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32055 **Lot No.:** A0118257

Description : Herbicide Mix #1/ME (Methyl Ester)

Herbicide Mix #1/ME (Methyl Ester) 200 µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2023 **Storage:** 10°C or colder

Handling: This product is photosensitive.

4163207
ID: 8151ResMix#1_00005
Exp: 03/31/23 Prpd: SAT
32055 Herb Mix #1-MethylE

4163208
ID: 8151ResMix#1_00006
Exp: 03/31/23 Prpd: SAT
32055 Herb Mix #1-MethylE

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Dicamba methyl ester **CAS #** 6597-78-0 (Lot 1813500) **Purity** 99%	200.2 µg/mL	+/- 1.4196 +/- 6.7574 +/- 6.7574	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Dichlorprop methyl ester **CAS #** 57153-17-0 (Lot 3917300) **Purity** 99%	201.8 µg/mL	+/- 1.4309 +/- 6.8114 +/- 6.8114	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	2,4-D methyl ester **CAS #** 1928-38-7 (Lot 2403400) **Purity** 99%	200.0 µg/mL	+/- 1.4182 +/- 6.7507 +/- 6.7507	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	2,4,5-TP (silvex) methyl ester **CAS #** 4841-20-7 (Lot 504400) **Purity** 99%	201.4 µg/mL	+/- 1.4281 +/- 6.7979 +/- 6.7979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	2,4,5-T methyl ester **CAS #** 1928-37-6 (Lot 777400) **Purity** 99%	201.0 µg/mL	+/- 1.4253 +/- 6.7844 +/- 6.7844	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	Dinoseb methyl ether **CAS #** 6099-79-2 (Lot 4362100) **Purity** 99%	201.0 µg/mL	+/- 1.4253 +/- 6.7844 +/- 6.7844	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
7	2,4-DB methyl ester **CAS #** 18625-12-2 (Lot 476-39C) **Purity** 99%	201.0 µg/mL	+/- 1.4253 +/- 6.7844 +/- 6.7844	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Reagent

8151ResMix#2_00004

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED ISO Guide 34 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32057 **Lot No.:** A0114340

Description : Herbicide Mix #2/ME (Methyl Ester)

Herbicide Mix #2/ME (Methyl Ester) 2,000 µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2022 **Storage:** 10°C or colder

Handling: This product is photosensitive.

4163185
ID: 8151ResMix#2_00004
Exp: 09/30/22 Prpd: SAT
32057 Herb Mix#2 Dalapon

4163186
ID: 8151ResMix#2_00005
Exp: 09/30/22 Prpd: SAT
32057 Herb Mix#2 Dalapon

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Dalapon methyl ester	2,015.7 µg/mL	+/- 11.9724	µg/mL	Gravimetric
	CAS # 17640-02-7 (Lot 3903800)		+/- 64.8367	µg/mL	Unstressed
	Purity 97%		+/- 64.8367	µg/mL	Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Reagent

8151ResMix#3_00008

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32059 **Lot No.:** A0117540

Description : Herbicide Mix #3/ME (Methyl Ester)

Herbicide Mix #3/ME (Methyl Ester) 20,000 µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2023 **Storage:** 10°C or colder

Handling: This product is photosensitive.

4163187
ID: 8151ResMix#3_00007
Exp: 02/28/23 Prpd: SAT
32059 Herb Mix#3 MCPP/MCP

4163201
ID: 8151ResMix#3_00008
Exp: 02/28/23 Prpd: SAT
32059 Herb Mix#3 MCPP/MCP

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	MCPP (Mecoprop) methyl ester **CAS #** 2786-19-8 (Lot 3817000) **Purity** 99%	20,064.0 µg/mL	+/- 185.6760 µg/mL +/- 687.6550 µg/mL +/- 687.6550 µg/mL	Gravimetric Unstressed Stressed
2	MCPA methyl ester **CAS #** 2436-73-9 (Lot 35091-88) **Purity** 99%	20,048.0 µg/mL	+/- 185.5280 µg/mL +/- 687.1066 µg/mL +/- 687.1066 µg/mL	Gravimetric Unstressed Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Reagent

8151SSStk_00024

Certificate of Analysis

Chlorinated Methylated Herbicides Mixture

Product Number HBM-8151M **Page:** 1 of 1

Lot Number: CM-3162 **Lot Issue Date:** 12-Jun-2015 **Expiration Date:** 31-Jul-2017

This certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
acifluorfen methyl ester	050594-67-7	RM03058	100.4 ± 0.5 µg/mL
bentazon methyl derivative	061592-45-8	RM03069	100.2 ± 0.5 µg/mL
chloramben methyl ester	007286-84-2	RM03055	100.4 ± 0.5 µg/mL
2,4-D methyl ester	001928-38-7	RM03040	100.2 ± 0.5 µg/mL
dalapon methyl ester	017640-02-7	RM05303	100.3 ± 0.5 µg/mL
2,4-DB methyl ester	018625-12-2	RM03029	100.3 ± 0.5 µg/mL
DCPA	001861-32-1	RM00201	100.1 ± 0.5 µg/mL
dicamba methyl ester	006597-78-0	RM03946	100.0 ± 0.5 µg/mL
methyl-3,5-dichlorobenzoate	002905-67-1	RM03048	100.1 ± 0.5 µg/mL
dichlorprop methyl ester	057153-17-0	RM00002	100.4 ± 0.5 µg/mL
dinoseb methyl ether	006099-79-2	RM03051	100.2 ± 0.5 µg/mL
MCPA methyl ester	002436-73-9	RM04438	10025 ± 50 µg/mL
MCPP methyl ester	002786-19-8	RM03034	10018 ± 50 µg/mL
4-nitroanisole	000100-17-4	RM02398	100.3 ± 0.5 µg/mL
pentachloroanisole	001825-21-4	RM02457	100.3 ± 0.5 µg/mL
picloram methyl ester	014143-55-6	RM03045	100.1 ± 0.5 µg/mL
silvex methyl ester	004841-20-7	RM03035	100.3 ± 0.5 µg/mL
2,4,5-T methyl ester	001928-37-6	RM03033	100.1 ± 0.5 µg/mL

Matrix: methanol (methyl alcohol)

Storage: Store at Room Temperature (15-30°C).

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

ISO 9001
Registered
TUV USA, Inc.

William J. Leahy
Quality Assurance Manager

250 SMITH STREET ▪ NORTH KINGSTOWN, RHODE ISLAND 02852 ▪ WWW.ULTRASCI.COM

Reagent

8151StkSurr_00049

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: M-515-SS
Description: 2,4-Dichlorophenylacetic methyl ester
Lot: 215041203-01
Solvent: Methyl tert-butyl ether (MtBE)
Hazards: **HIGHLY FLAMMABLE** - *Refer to SDS for safety info*

Danger 2

Date Certified: Apr 27, 2016
Expiration: Apr 27, 2018
Sample Size: 1 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (GC/MS)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
Methyl-2,4-Dichlorophenylacetate	55954-23-9	98.8	100.3	99.1

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By: Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

OR-ORG/INO-001
Rev. 7/11

Reagent

8151StkSurr_00050

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: M-515-SS
Description: 2,4-Dichlorophenylacetic methyl ester
Lot: 215041203-01
Solvent: Methyl tert-butyl ether (MtBE)
Hazards: HIGHLY FLAMMABLE - *Refer to SDS for safety info*

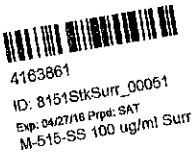
Danger 2

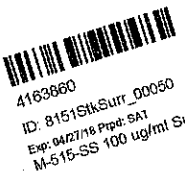
Date Certified: Apr 27, 2016
Expiration: Apr 27, 2018
Sample Size: 1 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (GC/MS)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
Methyl-2,4-Dichlorophenylacetate	55954-23-9	98.8	100.3	99.1





A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.21%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By: Larry Decker, Organic QC Manager

Page 1 of 1

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

QR-ORG/INO-001
Rev. 7/11

Reagent

8151Surrogate_00126

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8151Surrogate_00126

Reagent ID: 8151Surrogate_00126

Description:	5 ug/mL 8151 Surrogate	Expiration Date:	12/13/2016
No. of Bottles:	1	Laboratory:	TestAmerica Denver
Storage Location:	North Prep	Prepared By:	Bourgery, David F
Reagent Volume:	200.000 mL	Solvent:	P&T Methanol
Creation Date:	10/13/2016	Solvent Lot:	MethanolP&T_00150
Open Date:			
Container(s):	4166265		
Comment:	Take 1mL of 8151 SurStock (2,4 Dichlorophenylacetic Acid, M-8150B-SS-10X) and dilute to 200mL in P&T MeOH. Must be esterified prior to submission for verification. Expires after 2 months.		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
2,4-Dichlorophenylacetic acid	8151-SurStock_00061	05/31/2017	1000.00000	ug/mL	5.00000	ug/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
8151-SurStock_00061	DCAA 1000ug/mL	ASTD	05/31/17	Restek	A0115599	567804	1.00000	mL

Preliminary Report

TestAmerica Denver

Recovery Report

Data File:	\\ChromNA\Denver\ChromData\SGC_M\20161021-52141.b\10210009.D				
Lims ID:	8151Surr00126				
Client ID:					
Sample Type:	Client				
Inject. Date:	21-Oct-2016 15:44:57	ALS Bottle#:	4	Worklist Smp#:	9
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	8151Surr00126				
Misc. Info.:	280-0052141-009				
Operator ID:	DAW	Instrument ID:	SGC_M		
Method:	\\ChromNA\Denver\ChromData\SGC_M\20161021-52141.b\8151_615.m				
Limit Group:	GCSV - 8151				
Method Label:	8151A: Herbicides: DV-GC-0022				
Last Update:	23-Oct-2016 10:33:15	Calib Date:	13-Oct-2016 22:27:19		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\SGC_M\20161013-51866.b\10130014.D				
Column 1 :	Rti-35 sil MS (0.32 mm)		Det: GC ECD1A		
Column 2 :	Rti-XLB (0.32 mm)		Det: GC ECD2B		
Process Host:	XAWRK015				

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.2500	0.2487	99.50

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.2500	0.2431	97.22

Reagent

CN CAL Std_00052

RICCA CHEMICAL COMPANY®

Arlington, TX 76012
Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Cyanide Standard, 1000 ppm CN

Lot Number: 2609C92 **Product Number:** 2543

Manufacture Date: SEP 22, 2016
Expiration Date: MAR 2017

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certified traceable to NIST Standard Reference Material 999. The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is the combined uncertainty based on the stability of the assayed Potassium Cyanide, and the uncertainty in the mass and volume measurements.
Use 0.16% (w/v) (0.04 N) Sodium Hydroxide or 0.225 % (w/v) (0.04 N) Potassium Hydroxide to make dilutions of this standard. Restandardize weekly if extreme accuracy is required.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Cyanide	151-50-8	ACS
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Colorless liquid	Passed
Cyanide (CN)	995-1005 ppm	1000 ppm

Specification	Reference
Stock Standard Cyanide Solution	APHA (4500-CN- F)
Stock Cyanide Solution	APHA (4500-CN- E)
Stock Cyanide Solution	APHA (4500-CN- K)
Stock Cyanide Solution	APHA (4500-CN- H)
Cyanide Reference Solution (1000 mg/L)	EPA (SW-846) (7.3.3.2)
Cyanide Calibration Stock Solution (1,000 mg/L CN-)	EPA (SW-846) (9213)
Stock Cyanide Solution	EPA (335.3)
Stock Cyanide Solution	EPA (335.2)
Cyanide Solution Stock	ASTM (D 4282)
Simple Cyanide Solution, Stock (1.0 g/L CN)	ASTM (D 4374)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
2543-4	120 mL amber poly	6 months

Recommended Storage: 2°C - 8°C (36°F - 46°F)

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Reagent

CN ICV Std_00038

USA

5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe

P.O. Box 2704 P: +31 20 638 05 97
1000 CS Amsterdam F: +31 20 420 28 36
The Netherlands

Certificate of Analysis

Rev 0

Comment:

Catalog No:	Lot No:	Expiration Date:	Matrix:	Description:
Z-G34-4400-IC9M	1097445	16-Apr-2018	0.179% NaOH	ISO Guide 34 - Cyanide, 100 mL 1,000 mg/L in H_2O

Additional Information:

Date Received: _____

Container: 4 oz (125 mL) Narrow Mouth, HDPE

Certified Values:

The certified value is based on gravimetric and volumetric preparation of this CRM. This CRM has been confirmed by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internally developed method against an independent source which is directly traceable to the NIST SRM's listed below.
The uncertainty value is calculated for a 95% confidence interval with a *k* value of 2.

Element	Symbol	CAS No	SRM No	NIST Lot No	Source Lot No	Purity %	Concentration mg/L	Uncertainty ± mg/L
Cyanide	CN	151-50-8	N/A	N/A	363.24.3S	98	1000	3.5

CPI INTERNATIONAL

USA

5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe

P.O. Box 2704 P: +31 20 638 05 97
1000 CS Amsterdam F: +31 20 420 28 36
The Netherlands

Certificate of Analysis

Rev 0

Comment:

Catalog No:	Lot No:	Expiration Date:	Matrix:	Description:
Z-G34-4400-IC9M	1097445	16-Apr-2018	0.179% NaOH	ISO Guide 34 - Cyanide, 100 mL 1,000 mg/L in H_2O

Calculation of Uncertainty

The following equations are used to calculate the value of the expanded uncertainty:
$U=ku_c$ U=Expanded Uncertainty, k= the coverage factor at the 95% confidence level, k=2, u_c = the combined uncertainty
$u_c=\sqrt{\sum u_i^2}$ where u_i are the individual uncertainty components for raw material, transportation, homogeneity, and shelf life.

Expiration Information:

The Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. These tests include the effect of temperature and packaging on the product. This standard is guaranteed until the expiration date listed above.

Accreditation:

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) and ISO Guide 34 Reference Material Producer (RMP) Certificate number 3031.02 accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Manufactured By:

Carrie Bibbins
Chemist
Manufacture Date: 10/13/2016

Certified By:

Christy Lane
Chemist
Certified Date: 10/13/2016

Released By:

Mark Filla
Chemist
Original Issue Date: 10/13/2016

Reagent

MCPA&MCPP_00012

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: S-66380-R1
Description: Custom Herbicide Standard
Lot: 216051154
Solvent: Methanol
Hazards: **HIGHLY FLAMMABLE** - *Refer to SDS for safety info*

Danger 2

Date Certified: May 17, 2016
Expiration: May 17, 2018
Sample Size: 1 mL
Components: 2
Storage Condition: Refrig (0-5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (HPLC)	Prepared Concentration[1] (mg/mL)	Certified Analyte Concentration[2] (mg/mL)
MCPA acid	94-74-6	98.9	90.02	89.03
MCPP acid	7085-19-0	99.9	90.03	89.94

6-6-16

Sample

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By: _____
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

Reagent

SFD CAL STK_00003

Fisher Scientific

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

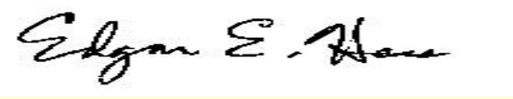
Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by DNV Certificate number CERT-08052-2006-AQ-HOU-ANAB

This is to certify that units of the above mentioned lot number were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained:

Catalog Number	**S425**	**Mfg. Date**	**12/14/2012**
Lot Number	**127305**		
Description	**SODIUM SULFIDE, NONAHYDRATE, CERTIFIED ACS**		
Country of Origin	**United States**	**Recommended Retest Date**	**Dec-2017**
Chemical Origin	**Inorganic-non animal**		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	Colorless crystals
AMMONIUM	%	<= 0.01	0.0030
ASSAY	%	>= 98.0	101.2
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	PASS/FAIL	= PASS TEST	PASS TEST
SULFITE OR THIOSULFATE	%	<= 0.1	<0.01



Lab Manager Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-6701.

Method 8260B

Volatile Organic Compounds (GC/MS) by Method 8260B

FORM II
GC/MS VOA SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-624 ID: 0.18(mm)

Client Sample ID	Lab Sample ID	DBFM #	DCA #	TOL #	BFB #
JBER-WW001	320-22881-1	101	110	96	99
	MB 320-134567/10	99	109	96	102
	LCS 320-134567/5	98	105	95	99
	LCSD 320-134567/6	100	109	99	102

	QC LIMITS
DBFM = Dibromofluoromethane (Surr)	80-119
DCA = 1,2-Dichloroethane-d4 (Surr)	81-118
TOL = Toluene-d8 (Surr)	89-112
BFB = 4-Bromofluorobenzene (Surr)	85-114

Column to be used to flag recovery values

FORM II 8260B

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: HSL102602.D

Lab ID: LCS 320-134567/5 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Benzene	20.0	18.7	94	79-120	
1,1,1,2-Tetrachloroethane	20.0	19.0	95	78-124	
1,1,1-Trichloroethane	20.0	17.5	87	74-131	
1,1,2,2-Tetrachloroethane	20.0	21.2	106	71-121	
1,1,2-Trichloroethane	20.0	20.2	101	80-119	
1,1-Dichloroethane	20.0	19.3	97	77-125	
1,1-Dichloroethene	20.0	17.3	86	71-131	
1,1-Dichloropropene	20.0	17.8	89	79-125	
1,2,3-Trichlorobenzene	20.0	19.3	97	69-129	
1,2,3-Trichloropropane	20.0	19.9	100	73-122	
1,2,4-Trichlorobenzene	20.0	19.5	98	69-130	
1,2,4-Trimethylbenzene	20.0	18.9	95	76-124	
1,2-Dibromo-3-Chloropropane	20.0	19.8	99	62-128	
1,2-Dibromoethane (EDB)	20.0	19.9	100	77-121	
1,2-Dichlorobenzene	20.0	19.1	96	80-119	
1,2-Dichloroethane	20.0	19.6	98	73-128	
1,2-Dichloropropane	20.0	19.4	97	78-122	
1,3,5-Trimethylbenzene	20.0	19.0	95	75-124	
1,3-Dichlorobenzene	20.0	18.9	95	80-119	
1,3-Dichloropropane	20.0	19.5	97	80-119	
1,4-Dichlorobenzene	20.0	19.2	96	79-118	
2,2-Dichloropropane	20.0	17.9	89	60-139	
2-Chlorotoluene	20.0	18.9	94	79-122	
4-Chlorotoluene	20.0	19.0	95	78-122	
Bromobenzene	20.0	19.4	97	80-120	
Bromochloromethane	20.0	19.7	99	78-123	
Bromodichloromethane	20.0	19.4	97	79-125	
Bromoform	20.0	18.8	94	66-130	
Bromomethane	20.0	17.8	89	53-141	
Carbon tetrachloride	20.0	16.8	84	72-136	
Chlorobenzene	20.0	18.7	93	82-118	
Chloroethane	20.0	18.3	91	60-138	
Chloroform	20.0	19.1	96	79-124	
Chloromethane	20.0	18.7	93	50-139	
cis-1,2-Dichloroethene	20.0	18.1	90	78-123	
cis-1,3-Dichloropropene	20.0	19.9	100	75-124	
Dibromomethane	20.0	19.8	99	79-123	
Dichlorodifluoromethane	20.0	16.1	80	32-152	
Ethylbenzene	20.0	18.8	94	79-121	
Hexachlorobutadiene	20.0	18.9	95	66-134	
Isopropylbenzene	20.0	18.4	92	72-131	
Methylene Chloride	20.0	18.8	94	74-124	

Column to be used to flag recovery and RPD values

FORM III 8260B

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: HSL102602.D

Lab ID: LCS 320-134567/5 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
m-Xylene & p-Xylene	20.0	18.4	92	80-121	
Naphthalene	20.0	19.5	98	61-128	
n-Butylbenzene	20.0	19.4	97	75-128	
N-Propylbenzene	20.0	19.1	96	76-126	
o-Xylene	20.0	18.8	94	78-122	
p-Isopropyltoluene	20.0	18.9	95	77-127	
sec-Butylbenzene	20.0	18.6	93	77-126	
Styrene	20.0	18.7	93	78-123	
tert-Butylbenzene	20.0	18.4	92	78-124	
Tetrachloroethene	20.0	18.3	91	74-129	
Toluene	20.0	18.8	94	80-121	
trans-1,2-Dichloroethene	20.0	17.9	90	75-124	
trans-1,3-Dichloropropene	20.0	19.7	98	73-127	
Trichloroethene	20.0	17.7	89	79-123	
Trichlorofluoromethane	20.0	19.4	97	65-141	
Vinyl chloride	20.0	19.2	96	58-137	

Column to be used to flag recovery and RPD values

FORM III 8260B

FORM III
GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: HSL102603.D

Lab ID: LCSD 320-134567/6 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Benzene	20.0	19.1	95	2	20	79-120	
1,1,1,2-Tetrachloroethane	20.0	18.9	94	0	20	78-124	
1,1,1-Trichloroethane	20.0	18.2	91	4	20	74-131	
1,1,2,2-Tetrachloroethane	20.0	20.5	103	3	20	71-121	
1,1,2-Trichloroethane	20.0	20.8	104	3	20	80-119	
1,1-Dichloroethane	20.0	19.8	99	2	20	77-125	
1,1-Dichloroethene	20.0	17.7	88	2	20	71-131	
1,1-Dichloropropene	20.0	18.6	93	4	20	79-125	
1,2,3-Trichlorobenzene	20.0	19.8	99	3	20	69-129	
1,2,3-Trichloropropane	20.0	20.2	101	1	20	73-122	
1,2,4-Trichlorobenzene	20.0	20.4	102	5	20	69-130	
1,2,4-Trimethylbenzene	20.0	19.1	96	1	20	76-124	
1,2-Dibromo-3-Chloropropane	20.0	20.2	101	2	20	62-128	
1,2-Dibromoethane (EDB)	20.0	20.3	102	2	20	77-121	
1,2-Dichlorobenzene	20.0	19.7	98	3	20	80-119	
1,2-Dichloroethane	20.0	19.9	99	1	20	73-128	
1,2-Dichloropropane	20.0	20.1	100	3	20	78-122	
1,3,5-Trimethylbenzene	20.0	19.1	96	1	20	75-124	
1,3-Dichlorobenzene	20.0	18.9	94	0	20	80-119	
1,3-Dichloropropane	20.0	19.8	99	2	20	80-119	
1,4-Dichlorobenzene	20.0	19.7	99	3	20	79-118	
2,2-Dichloropropane	20.0	18.3	92	2	20	60-139	
2-Chlorotoluene	20.0	18.8	94	0	20	79-122	
4-Chlorotoluene	20.0	19.2	96	1	20	78-122	
Bromobenzene	20.0	19.4	97	0	20	80-120	
Bromochloromethane	20.0	20.6	103	4	20	78-123	
Bromodichloromethane	20.0	19.6	98	1	20	79-125	
Bromoform	20.0	19.3	96	3	20	66-130	
Bromomethane	20.0	18.3	92	3	20	53-141	
Carbon tetrachloride	20.0	18.0	90	7	20	72-136	
Chlorobenzene	20.0	19.0	95	2	20	82-118	
Chloroethane	20.0	18.5	92	1	20	60-138	
Chloroform	20.0	20.0	100	5	20	79-124	
Chloromethane	20.0	19.4	97	4	20	50-139	
cis-1,2-Dichloroethene	20.0	18.8	94	4	20	78-123	
cis-1,3-Dichloropropene	20.0	20.8	104	4	20	75-124	
Dibromomethane	20.0	20.4	102	3	20	79-123	
Dichlorodifluoromethane	20.0	15.8	79	2	20	32-152	
Ethylbenzene	20.0	18.9	95	1	20	79-121	
Hexachlorobutadiene	20.0	20.2	101	6	20	66-134	
Isopropylbenzene	20.0	18.8	94	2	20	72-131	
Methylene Chloride	20.0	19.6	98	4	20	74-124	

Column to be used to flag recovery and RPD values

FORM III 8260B

FORM III
GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: HSL102603.D

Lab ID: LCSD 320-134567/6 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
m-Xylene & p-Xylene	20.0	18.7	94	2	20	80-121	
Naphthalene	20.0	19.9	99	2	20	61-128	
n-Butylbenzene	20.0	20.0	100	3	20	75-128	
N-Propylbenzene	20.0	19.3	96	1	20	76-126	
o-Xylene	20.0	19.4	97	4	20	78-122	
p-Isopropyltoluene	20.0	19.4	97	2	20	77-127	
sec-Butylbenzene	20.0	19.0	95	2	20	77-126	
Styrene	20.0	19.1	95	2	20	78-123	
tert-Butylbenzene	20.0	18.8	94	2	20	78-124	
Tetrachloroethene	20.0	18.8	94	3	20	74-129	
Toluene	20.0	19.0	95	1	20	80-121	
trans-1,2-Dichloroethene	20.0	18.5	93	3	20	75-124	
trans-1,3-Dichloropropene	20.0	20.5	102	4	20	73-127	
Trichloroethene	20.0	18.1	91	2	20	79-123	
Trichlorofluoromethane	20.0	19.8	99	2	20	65-141	
Vinyl chloride	20.0	19.3	96	0	20	58-137	

Column to be used to flag recovery and RPD values

FORM III 8260B

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab File ID: MB102601.D Lab Sample ID: MB 320-134567/10

Matrix: Water Heated Purge:(Y/N) Y

Instrument ID: HP12 Date Analyzed: 10/26/2016 13:30

GC Column: DB-624 ID: 0.18(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-134567/5	HSL102602.D	10/26/2016 11:39
	LCSD 320-134567/6	HSL102603.D	10/26/2016 12:01
JBER-WW001	320-22881-1	SA102617.D	10/26/2016 19:48

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab File ID: BFB101705.D BFB Injection Date: 10/17/2016

Instrument ID: HP12 BFB Injection Time: 14:22

Analysis Batch No.: 132993

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	22.8	
75	30.0 - 60.0 % of mass 95	49.6	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.4	
173	Less than 2.0 % of mass 174	0.8	(1.1) 1
174	50.0 - 120.00 % of mass 95	72.7	
175	5.0 - 9.0 % of mass 174	5.5	(7.5) 1
176	95.0 - 101.0 % of mass 174	70.4	(96.8) 1
177	5.0 - 9.0 % of mass 176	4.7	(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:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 320-132993/4	H1017IC1.D	10/17/2016	20:59
	IC 320-132993/5	H1017IC2.D	10/17/2016	21:22
	IC 320-132993/6	H1017IC3.D	10/17/2016	21:44
	IC 320-132993/7	H1017IC4.D	10/17/2016	22:07
	ICIS 320-132993/8	H1017IC5.D	10/17/2016	22:29
	IC 320-132993/9	H1017IC6.D	10/17/2016	22:51
	IC 320-132993/10	H1017IC7.D	10/17/2016	23:13
	IC 320-132993/11	H1017IC8.D	10/17/2016	23:36
	ICV 320-132993/14	H1017ICV01.D	10/18/2016	00:42

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab File ID: BFB1026.D BFB Injection Date: 10/26/2016

Instrument ID: HP12 BFB Injection Time: 10:34

Analysis Batch No.: 134567

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	23.1	
75	30.0 - 60.0 % of mass 95	49.9	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.4	
173	Less than 2.0 % of mass 174	0.6	(0.7) 1
174	50.0 - 120.00 % of mass 95	81.3	
175	5.0 - 9.0 % of mass 174	6.0	(7.4) 1
176	95.0 - 101.0 % of mass 174	77.4	(95.2) 1
177	5.0 - 9.0 % of mass 176	4.9	(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:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCV 320-134567/4	HSL102601.D	10/26/2016	11:16
	LCS 320-134567/5	HSL102602.D	10/26/2016	11:39
	LCSD 320-134567/6	HSL102603.D	10/26/2016	12:01
	MB 320-134567/10	MB102601.D	10/26/2016	13:30
JBER-WW001	320-22881-1	SA102617.D	10/26/2016	19:48
	CCVC 320-134567/31	SA102621.D	10/26/2016	21:17

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Sample No.: ICIS 320-132993/8 Date Analyzed: 10/17/2016 22:29

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm)

Lab File ID (Standard): H1017IC5.D Heated Purge: (Y/N) Y

Calibration ID: 26011

		TBAd9		BUT		FB	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		496024	2.95	468150	3.99	236995	5.01
UPPER LIMIT		992048	3.45	936300	4.49	473990	5.51
LOWER LIMIT		248012	2.45	234075	3.49	118498	4.51
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-132993/14		451805	2.95	471983	3.99	236888	5.01
CCV 320-134567/4		499447	2.96	486629	3.99	230856	5.01
LCS 320-134567/5		491240	2.95	477518	3.99	237834	5.01
LCSD 320-134567/6		494568	2.95	500363	3.99	230312	5.01
MB 320-134567/10		427809	2.95	456677	3.99	232201	5.01
320-22881-1	JBER-WW001	469672	2.95	457325	3.99	218555	5.01
CCVC 320-134567/31		130852Q	3.05	204776Q	4.00	221666	5.01

TBAd9 = TBA-d9 (IS)
BUT = 2-Butanone-d5
FB = Fluorobenzene (IS)

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260B

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Sample No.: ICIS 320-132993/8 Date Analyzed: 10/17/2016 22:29

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm)

Lab File ID (Standard): H1017IC5.D Heated Purge: (Y/N) Y

Calibration ID: 26011

		14DD8		CBNZd5		DCBd4	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		19204	5.59	172047	7.67	90503	9.87
UPPER LIMIT		38408	6.09	344094	8.17	181006	10.37
LOWER LIMIT		9602	5.09	86024	7.17	45252	9.37
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-132993/14		16221	5.59	174433	7.67	89192	9.87
CCV 320-134567/4		21235	5.59	170926	7.67	85448	9.87
LCS 320-134567/5		20440	5.59	173423	7.67	87866	9.87
LCSD 320-134567/6		17635	5.59	170717	7.67	88202	9.87
MB 320-134567/10		13497	5.59	169642	7.67	85342	9.87
320-22881-1	JBER-WW001	18142	5.59	160949	7.67	80668	9.87
CCVC 320-134567/31		3084Q	5.65	161953	7.67	83197	9.87

14DD8 = Dioxane-d8 (IS)
CBNZd5 = Chlorobenzene-d5
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260B

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: JBER-WW001 | Lab Sample ID: 320-22881-1

Matrix: Water | Lab File ID: SA102617.D

Analysis Method: 8260B | Date Collected: 10/20/2016 10:40

Sample wt/vol: 50(mL) | Date Analyzed: 10/26/2016 19:48

Soil Aliquot Vol: | Dilution Factor: 10

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 134567 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-43-2	Benzene	4.0	U	10	4.0	1.3
630-20-6	1,1,1,2-Tetrachloroethane	4.0	U	10	4.0	1.0
71-55-6	1,1,1-Trichloroethane	4.0	U	10	4.0	1.9
79-34-5	1,1,2,2-Tetrachloroethane	2.8	J D	10	4.0	1.5
79-00-5	1,1,2-Trichloroethane	8.0	U	10	8.0	3.1
75-34-3	1,1-Dichloroethane	4.0	U	10	4.0	1.5
75-35-4	1,1-Dichloroethene	4.0	U	10	4.0	1.4
563-58-6	1,1-Dichloropropene	4.0	U	10	4.0	1.4
87-61-6	1,2,3-Trichlorobenzene	4.0	U	10	4.0	1.4
96-18-4	1,2,3-Trichloropropane	4.0	U	10	4.0	1.3
120-82-1	1,2,4-Trichlorobenzene	4.0	U	10	4.0	1.0
95-63-6	1,2,4-Trimethylbenzene	4.0	U	10	4.0	1.2
96-12-8	1,2-Dibromo-3-Chloropropane	8.0	U	20	8.0	3.2
106-93-4	1,2-Dibromoethane (EDB)	8.0	U	20	8.0	2.2
95-50-1	1,2-Dichlorobenzene	4.0	U	10	4.0	1.4
107-06-2	1,2-Dichloroethane	5.0	U	10	5.0	2.2
78-87-5	1,2-Dichloropropane	4.0	U	10	4.0	1.5
108-67-8	1,3,5-Trimethylbenzene	4.0	U	10	4.0	1.4
541-73-1	1,3-Dichlorobenzene	4.0	U	10	4.0	1.1
142-28-9	1,3-Dichloropropane	4.0	U	10	4.0	1.5
106-46-7	1,4-Dichlorobenzene	4.0	U	10	4.0	1.3
594-20-7	2,2-Dichloropropane	4.0	U	10	4.0	1.3
95-49-8	2-Chlorotoluene	4.0	U	10	4.0	1.5
106-43-4	4-Chlorotoluene	4.0	U	10	4.0	1.5
108-86-1	Bromobenzene	4.0	U	10	4.0	1.8
74-97-5	Bromochloromethane	4.0	U	10	4.0	1.4
75-27-4	Bromodichloromethane	4.0	U	10	4.0	1.4
75-25-2	Bromoform	4.0	U	10	4.0	1.0
74-83-9	Bromomethane	8.0	U	10	8.0	2.9
56-23-5	Carbon tetrachloride	4.0	U	10	4.0	1.5
108-90-7	Chlorobenzene	4.0	U	10	4.0	1.2
75-00-3	Chloroethane	8.0	U	10	8.0	3.4
67-66-3	Chloroform	4.0	U	10	4.0	1.2
74-87-3	Chloromethane	8.0	U	10	8.0	2.5
156-59-2	cis-1,2-Dichloroethene	39	D	10	4.0	1.0
10061-01-5	cis-1,3-Dichloropropene	8.0	U	10	8.0	2.2

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: JBER-WW001 | Lab Sample ID: 320-22881-1

Matrix: Water | Lab File ID: SA102617.D

Analysis Method: 8260B | Date Collected: 10/20/2016 10:40

Sample wt/vol: 50(mL) | Date Analyzed: 10/26/2016 19:48

Soil Aliquot Vol: | Dilution Factor: 10

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 134567 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
74-95-3	Dibromomethane	8.0	U	10	8.0	2.1
75-71-8	Dichlorodifluoromethane	4.0	U	10	4.0	1.6
100-41-4	Ethylbenzene	4.0	U	10	4.0	1.5
87-68-3	Hexachlorobutadiene	8.0	U	10	8.0	2.2
98-82-8	Isopropylbenzene	4.0	U	10	4.0	1.2
75-09-2	Methylene Chloride	8.0	U	10	8.0	3.5
179601-23-1	m-Xylene & p-Xylene	4.0	U	10	4.0	1.8
91-20-3	Naphthalene	4.0	U	10	4.0	1.5
104-51-8	n-Butylbenzene	4.0	U	10	4.0	1.2
103-65-1	N-Propylbenzene	4.0	U	10	4.0	1.5
95-47-6	o-Xylene	4.0	U	10	4.0	1.0
99-87-6	p-Isopropyltoluene	4.0	U	10	4.0	1.3
135-98-8	sec-Butylbenzene	4.0	U	10	4.0	1.2
100-42-5	Styrene	4.0	U	10	4.0	1.5
98-06-6	tert-Butylbenzene	4.0	U	10	4.0	1.4
127-18-4	Tetrachloroethene	4.0	U	10	4.0	1.5
108-88-3	Toluene	8.0	U	10	8.0	2.5
156-60-5	trans-1,2-Dichloroethene	4.0	U	10	4.0	1.1
10061-02-6	trans-1,3-Dichloropropene	4.0	U	10	4.0	1.5
79-01-6	Trichloroethene	7.3	J D	10	4.0	1.3
75-69-4	Trichlorofluoromethane	8.0	U	10	8.0	2.3
75-01-4	Vinyl chloride	8.0	U	10	8.0	2.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	110		81-118
460-00-4	4-Bromofluorobenzene (Surr)	99		85-114
1868-53-7	Dibromofluoromethane (Surr)	101		80-119
2037-26-5	Toluene-d8 (Surr)	96		89-112

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102617.D
Lims ID: 320-22881-A-1
Client ID: JBER-WW001
Sample Type: Client
Inject. Date: 26-Oct-2016 19:48:30 ALS Bottle#: 26 Worklist Smp#: 27
Purge Vol: 5.000 mL Dil. Factor: 10.0000
Sample Info: 320-22881-a-1
Misc. Info.: 10X FOAM
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 11:17:06 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: sawatthaweekuls Date: 27-Oct-2016 11:14:15

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
*	1 TBA-d9 (IS)	65	2.952	2.958	-0.006	0	469672	200.0	
*	2 2-Butanone-d5	46	3.989	3.989	0.000	0	457325	50.0	
*	3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	218555	10.0	
*	6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	18142	200.0	
*	4 Chlorobenzene-d5	117	7.665	7.665	0.000	90	160949	10.0	
*	5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	98	80668	10.0	
$	7 BFB	95	4.013	3.141	0.872	0	541	NC	
$	8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	95	116813	20.3	
$	9 1,2-Dichloroethane-d4 (Sur	65	4.720	4.714	0.006	0	166272	22.0	
$	10 Trifluorotoluene (Surr)	146		5.574				ND	
$	11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	97	410791	19.3	
$	12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	89	127150	19.9	
	13 Dichlorodifluoromethane	85		1.142				ND	
	14 Chloromethane	50		1.276				ND	
	15 Vinyl chloride	62		1.373				ND	
	17 Butadiene	54		1.410				ND	
	18 Bromomethane	94		1.648				ND	
	19 Chloroethane	64		1.745				ND	
	20 Trichlorofluoromethane	101		1.971				ND	
	22 Acrolein	56		2.355				ND	
	23 1,1-Dichloroethene	96		2.440				ND	
	24 1,1,2-Trichloro-1,2,2-trif	101		2.465				ND	
	25 Acetone	43	2.513	2.501	0.012	81	9449	1.96	7
	26 Iodomethane	142		2.568				ND	
	27 Ethyl bromide	108		2.593				ND	
	28 Carbon disulfide	76		2.617				ND	
	29 Isopropyl alcohol	45	2.660	2.666	-0.006	98	40624	43.5	
	30 3-Chloro-1-propene	76		2.775				ND	
	31 Methylene Chloride	84		2.891				ND	
	33 2-Methyl-2-propanol	59		3.031				ND	
	34 Acrylonitrile	53		3.117				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
35 trans-1,2-Dichloroethene	96		3.135				ND	
36 Methyl tert-butyl ether	73		3.147				ND	
37 Hexane	57		3.391				ND	
38 1,1-Dichloroethane	63		3.507				ND	
39 Vinyl acetate	43		3.574				ND	
41 2-Chloro-1,3-butadiene	53		3.592				ND	
40 Isopropyl ether	45		3.592				ND	
42 Tert-butyl ethyl ether	59		3.909				ND	
43 2,2-Dichloropropane	79		4.013				ND	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	27867	3.95	
45 2-Butanone (MEK)	43		4.043				ND	
46 Propionitrile	54		4.092				ND	
48 Chlorobromomethane	128		4.220				ND	
49 Tetrahydrofuran	42		4.263				ND	
47 Methacrylonitrile	41		4.293				ND	
50 Chloroform	83		4.300				ND	
51 1,1,1-Trichloroethane	97		4.446				ND	
52 Cyclohexane	56		4.489				ND	
54 1,1-Dichloropropene	75		4.586				ND	
53 Carbon tetrachloride	117		4.586				ND	
55 Isobutyl alcohol	43		4.720				ND	
56 Benzene	78		4.763				ND	
57 1,2-Dichloroethane	62		4.781				ND	
59 Tert-amyl methyl ether	73		4.873				ND	
60 n-Heptane	43		5.007				ND	
61 Trichloroethene	95	5.318	5.318	0.000	94	5220	0.7254	
62 1,2-Dichloropropane	63		5.507				ND	
63 Dibromomethane	93		5.610				ND	
64 Methyl methacrylate	41		5.622				ND	
65 1,4-Dioxane	88		5.629				ND	
66 Dichlorobromomethane	83		5.750				ND	
67 2-Chloroethyl vinyl ether	63		6.019				ND	
68 cis-1,3-Dichloropropene	75		6.141				ND	
69 4-Methyl-2-pentanone (MIBK	43		6.281				ND	
70 Toluene	92		6.433				ND	
72 trans-1,3-Dichloropropene	75		6.628				ND	
73 Ethyl methacrylate	69		6.720				ND	
74 1,1,2-Trichloroethane	97		6.793				ND	
75 Tetrachloroethene	166	6.915	6.915	0.000	93	996	0.1436	
76 1,3-Dichloropropane	76		6.939				ND	
77 2-Hexanone	43		7.025				ND	
78 Chlorodibromomethane	129		7.140				ND	
79 Ethylene Dibromide	107		7.238				ND	
80 1-Chlorohexane	91		7.677				ND	
81 Chlorobenzene	112		7.689				ND	
82 1,1,1,2-Tetrachloroethane	131		7.768				ND	
83 Ethylbenzene	91		7.799				ND	
84 m-Xylene & p-Xylene	91		7.909				ND	
86 o-Xylene	91		8.274				ND	
87 Styrene	104		8.287				ND	
88 Bromoform	173		8.451				ND	
89 Isopropylbenzene	105		8.628				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
90 Bromobenzene	156		8.902				ND	
91 1,1,2,2-Tetrachloroethane	83	8.915	8.908	0.007	94	2110	0.2762	
92 1,2,3-Trichloropropane	110		8.945				ND	
93 trans-1,4-Dichloro-2-buten	89		8.969				ND	
94 N-Propylbenzene	91		9.018				ND	
95 2-Chlorotoluene	91		9.091				ND	
96 1,3,5-Trimethylbenzene	105		9.189				ND	
98 4-Chlorotoluene	91		9.195				ND	
99 tert-Butylbenzene	119		9.500				ND	
100 1,2,4-Trimethylbenzene	105		9.549				ND	
101 sec-Butylbenzene	105		9.713				ND	
102 1,3-Dichlorobenzene	146		9.805				ND	
103 4-Isopropyltoluene	119		9.859				ND	
104 1,4-Dichlorobenzene	146		9.896				ND	
106 1,2-Dichlorobenzene	146		10.256				ND	
105 n-Butylbenzene	91		10.256				ND	
108 1,2-Dibromo-3-Chloropropan	75		11.012				ND	
110 1,2,4-Trichlorobenzene	180		11.829				ND	
111 Hexachlorobutadiene	225		12.011				ND	
112 Naphthalene	128		12.072				ND	
113 1,2,3-Trichlorobenzene	180		12.310				ND	
115 n-Butanol	56		0.000				ND	
122 Acetonitrile	40		0.000				ND	
126 n-Butyl acetate	43		0.000				ND	
116 Methylcyclohexane	83		0.000				ND	
130 t-Amyl alcohol	1		0.000				ND	
131 Ethyl acetate	43		0.000				ND	
119 Methyl Acetate TIC	1		0.000				ND	
123 Benzyl chloride	126		0.000				ND	
129 2-Nitropropane	43		0.000				ND	
125 Ethanol	45		0.000				ND	
128 Methyl acetate	43		0.000				ND	
127 Pentachloroethane	167		0.000				ND	
124 2-Methylnaphthalene	142		0.000				ND	
120 Ethyl ether	59		0.000				ND	
121 Ethyl acrylate	55		0.000				ND	
A 132 C6-C10 AK	1	6.211	(3.273-9.057)		0	427809	NC	
A 133 GRO	1	6.189	(2.773-9.606)		0	522316	NC	
A 134 C6-C10	1	6.305	(3.273-9.277)		0	440275	NC	
A 135 C4-C12	1	6.366	(1.237-11.496)		0	1016334	NC	
A 136 C5-C12	1	6.695	(1.969-11.496)		0	800150	NC	
A 137 C6-C12	1	7.421	(3.273-11.496)		0	602054	NC	
A 138 C7-C12	1	8.189	(4.980-11.496)		0	472890	NC	
S 140 1,2-Dichloroethene, Total	96				0		3.95	
S 139 Xylenes, Total	106		0.000				ND	
T 147 Chloroacetonitrile TIC	75		6.000				ND	
T 148 Methyl acrylate TIC	55		6.000				ND	
T 145 Methyl cyclohexane TIC	83		6.000				ND	
T 143 Pentafluorobenzene TIC	168		6.000				ND	
T 142 1-Chlorobutane TIC	56		6.000				ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

7 - Failed Limit of Detection

Reagents:

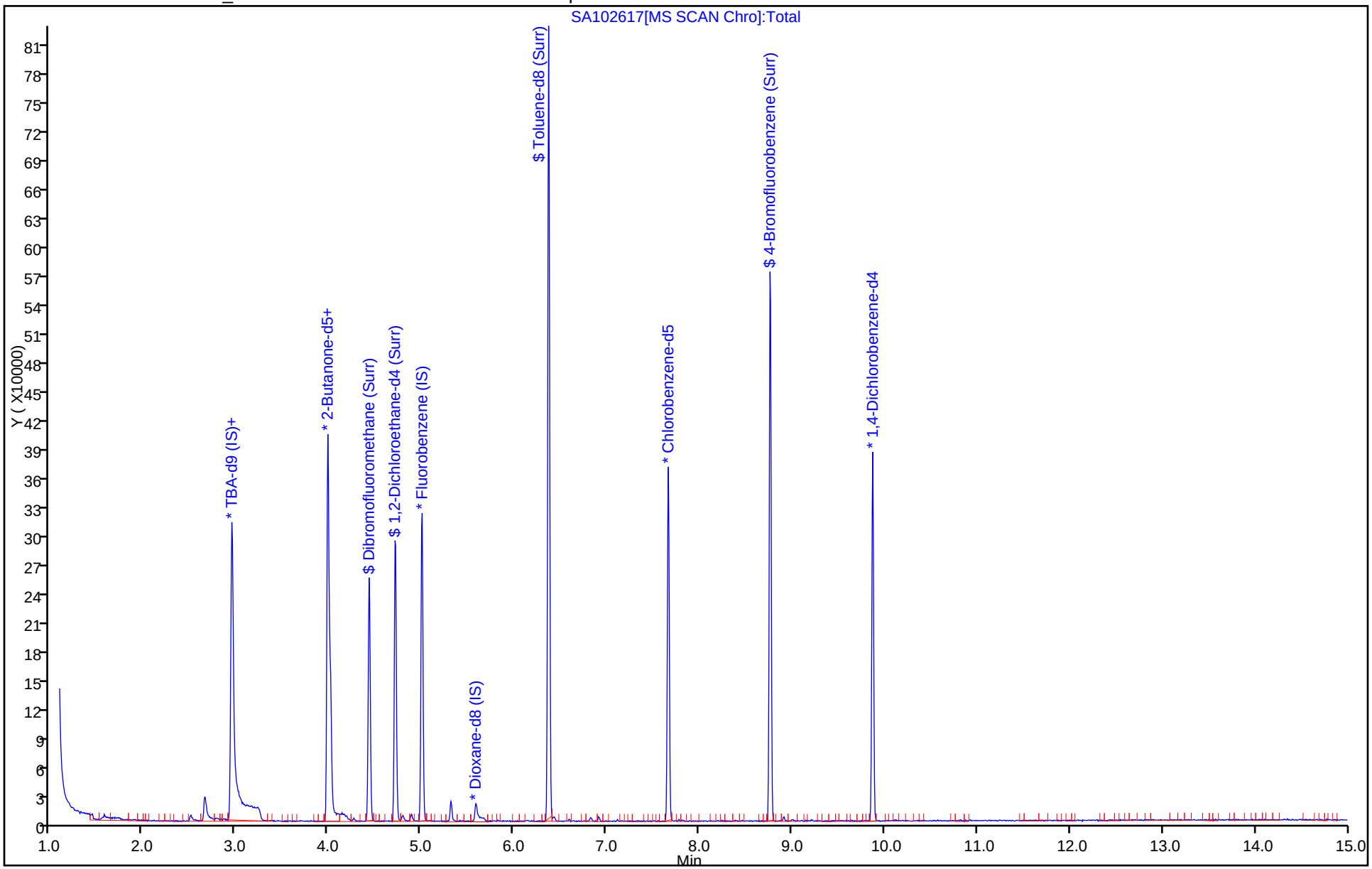
MVISIM_00055	Amount Added:	5.00	Units: uL	Run Reagent
MV8260SUIM_00090	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 27-Oct-2016 11:17:42 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102617.D

Injection Date:	26-Oct-2016 19:48:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	320-22881-A-1	Lab Sample ID:	320-22881-1	Worklist Smp#:	27
Client ID:	JBER-WW001				
Purge Vol:	5.000 mL	Dil. Factor:	10.0000	ALS Bottle#:	26
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102617.D
Lims ID: 320-22881-A-1
Client ID: JBER-WW001
Sample Type: Client
Inject. Date: 26-Oct-2016 19:48:30 ALS Bottle#: 26 Worklist Smp#: 27
Purge Vol: 5.000 mL Dil. Factor: 10.0000
Sample Info: 320-22881-a-1
Misc. Info.: 10X FOAM
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 11:17:06 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK026

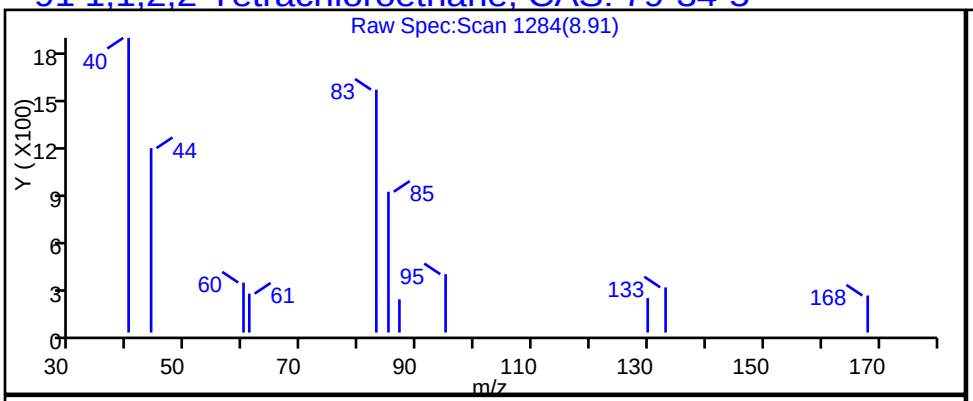
First Level Reviewer: sawatthaweekuls Date: 27-Oct-2016 11:14:15

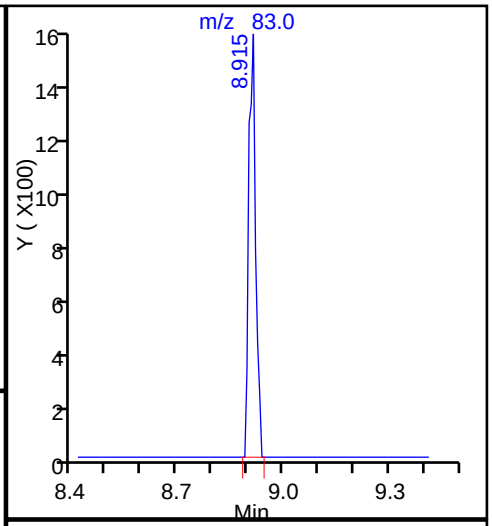
Compound	Amount Added	Amount Recovered	% Rec.
$ 8 Dibromofluoromethane (Surr)	20.0	20.3	101.42
$ 9 1,2-Dichloroethane-d4 (Surr)	20.0	22.0	109.88
$ 11 Toluene-d8 (Surr)	20.0	19.3	96.48
$ 12 4-Bromofluorobenzene (Surr)	20.0	19.9	99.35

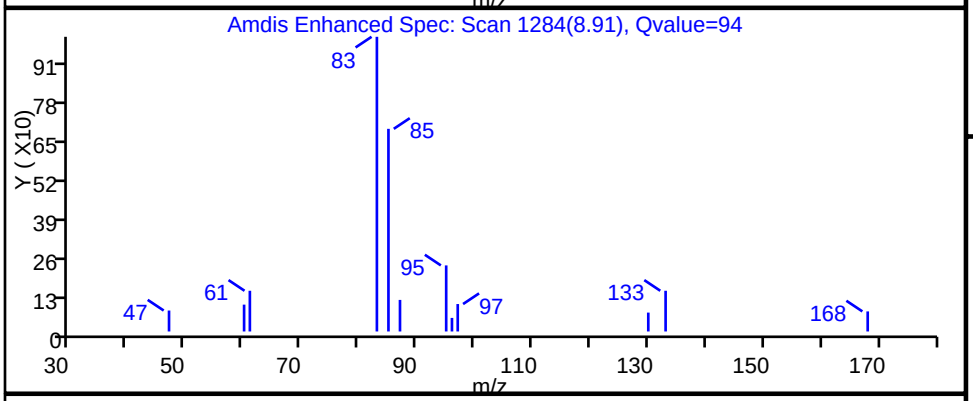
TestAmerica Sacramento

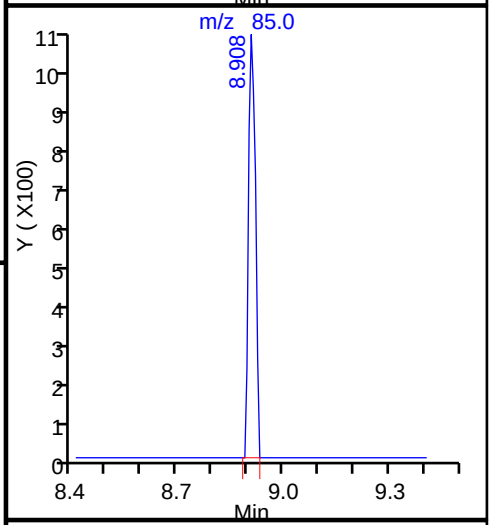
Data File:	\\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102617.D		
Injection Date:	26-Oct-2016 19:48:30	Instrument ID:	HP12
Lims ID:	320-22881-A-1	Lab Sample ID:	320-22881-1
Client ID:	JBER-WW001		
Operator ID:	KG	ALS Bottle#:	26 Worklist Smp#: 27
Purge Vol:	5.000 mL	Dil. Factor:	10.0000
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL
Column:		Detector	MS SCAN

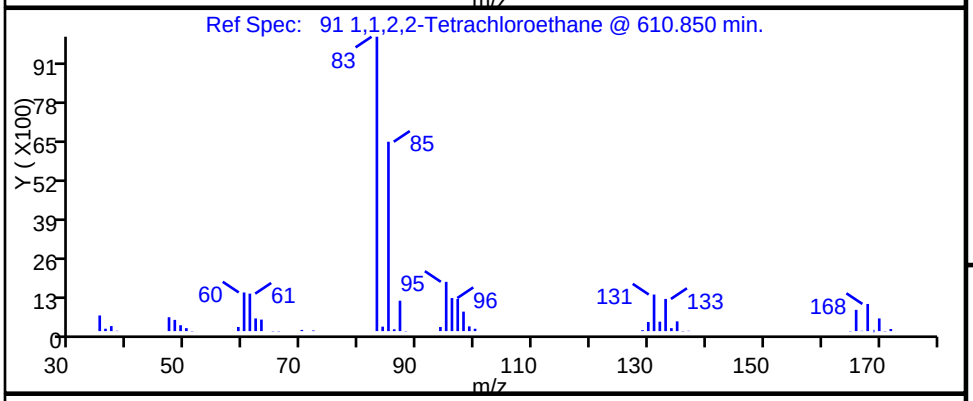
91 1,1,2,2-Tetrachloroethane, CAS: 79-34-5

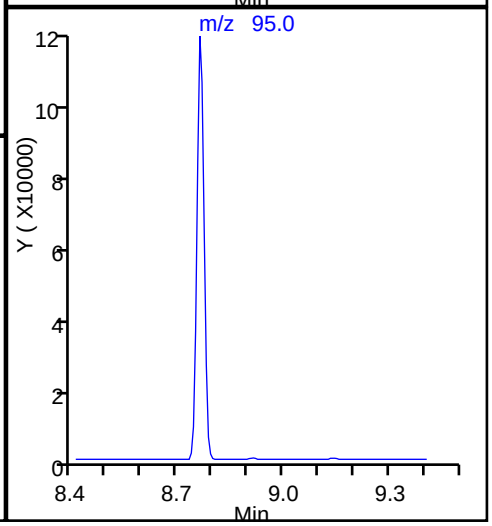


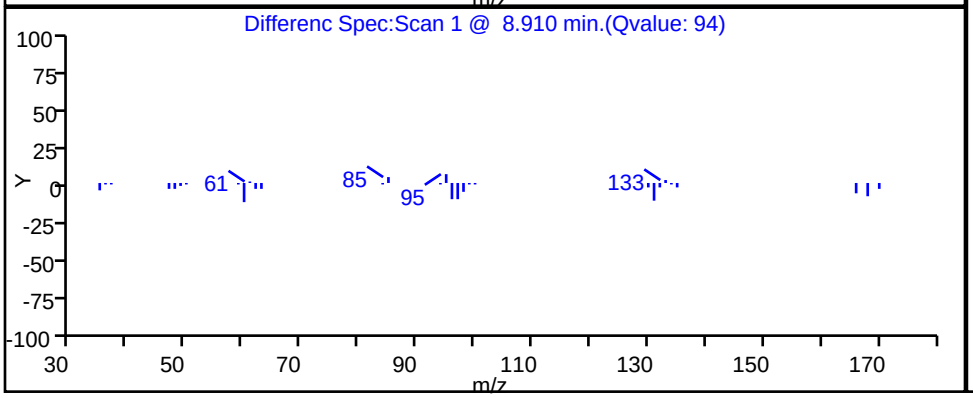








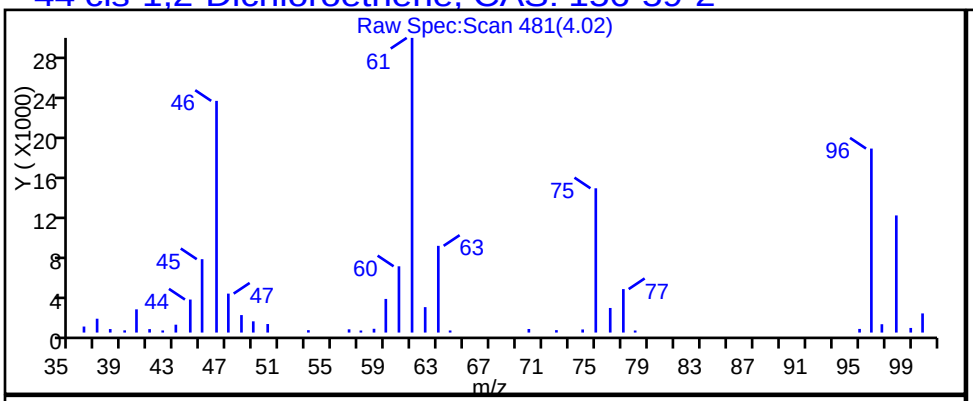


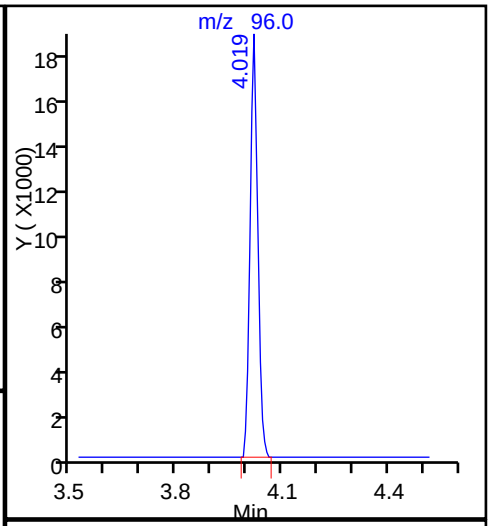


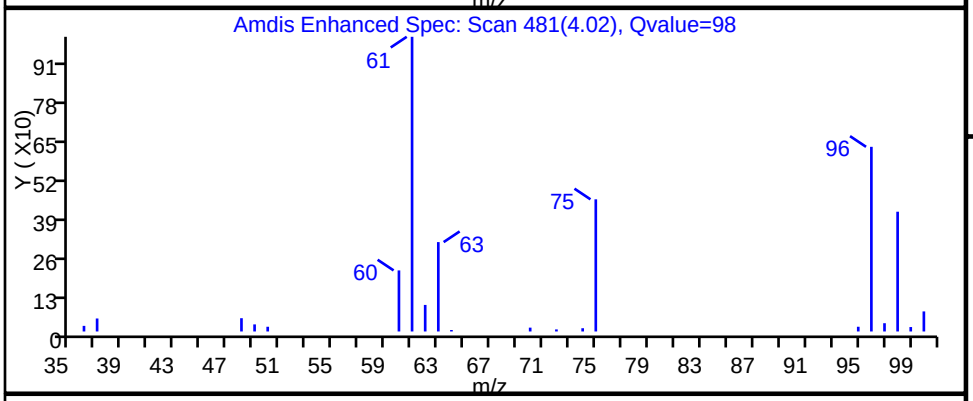
TestAmerica Sacramento

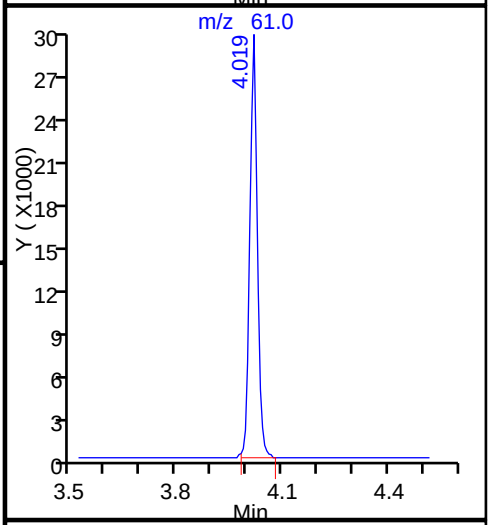
Data File:	\\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102617.D		
Injection Date:	26-Oct-2016 19:48:30	Instrument ID:	HP12
Lims ID:	320-22881-A-1	Lab Sample ID:	320-22881-1
Client ID:	JBER-WW001		
Operator ID:	KG	ALS Bottle#:	26 Worklist Smp#: 27
Purge Vol:	5.000 mL	Dil. Factor:	10.0000
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL
Column:		Detector	MS SCAN

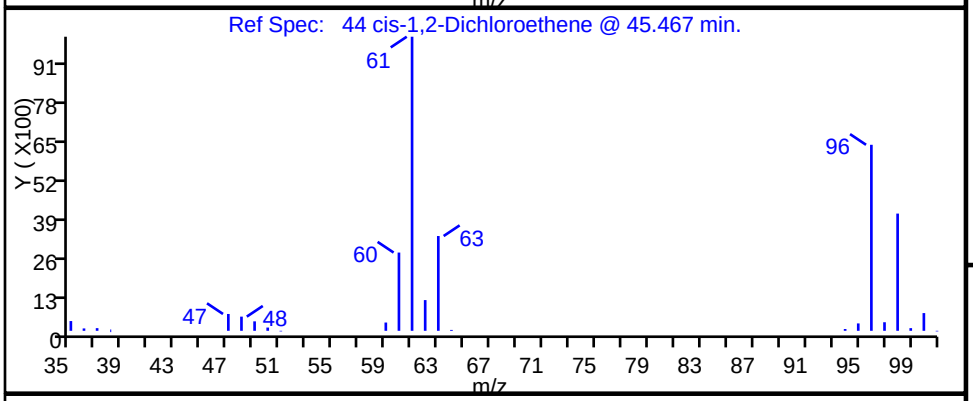
44 cis-1,2-Dichloroethene, CAS: 156-59-2

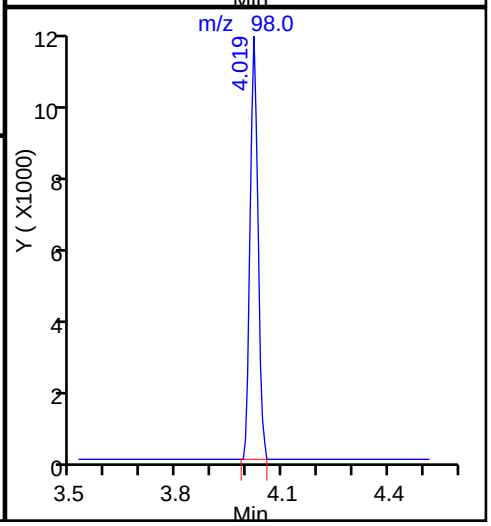


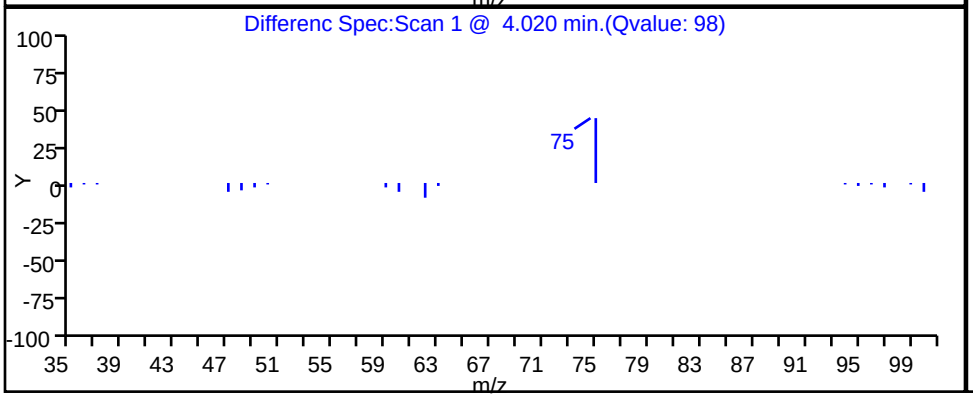










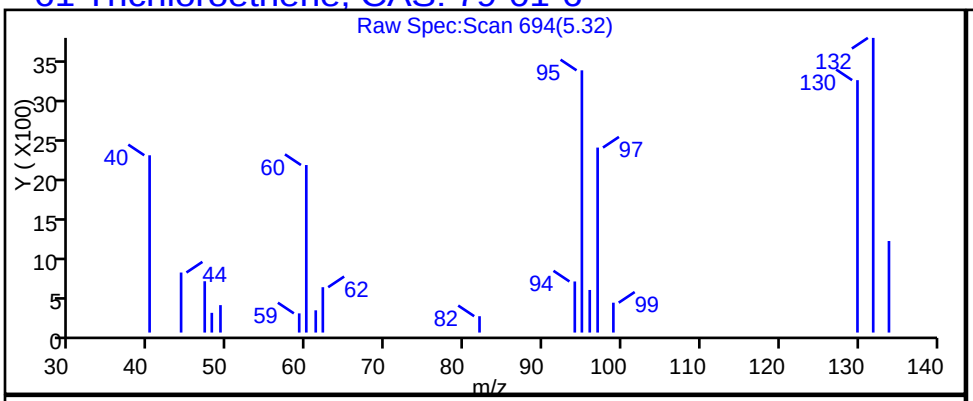


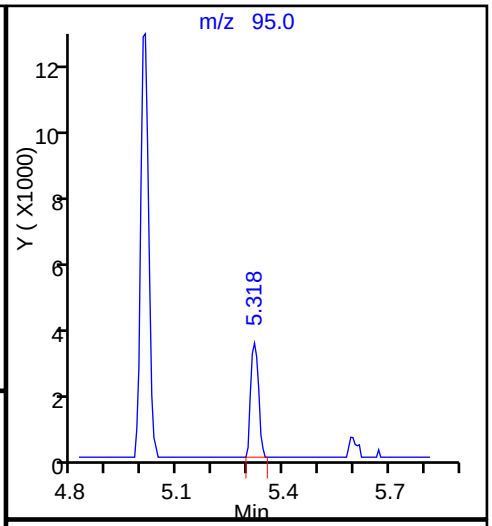
TestAmerica Sacramento

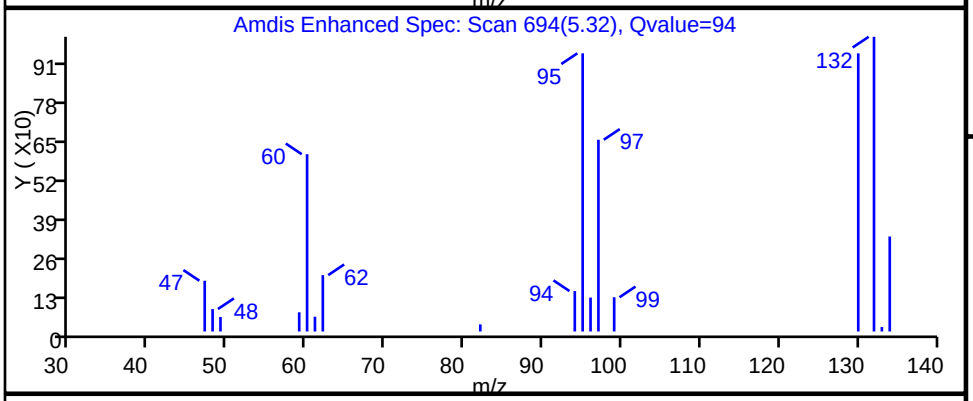
Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102617.D

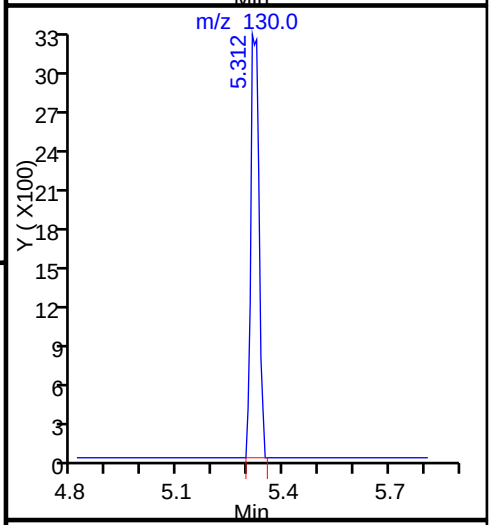
Injection Date:	26-Oct-2016 19:48:30	Instrument ID:	HP12
Lims ID:	320-22881-A-1	Lab Sample ID:	320-22881-1
Client ID:	JBER-WW001		
Operator ID:	KG	ALS Bottle#:	26 Worklist Smp#: 27
Purge Vol:	5.000 mL	Dil. Factor:	10.0000
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL
Column:		Detector	MS SCAN

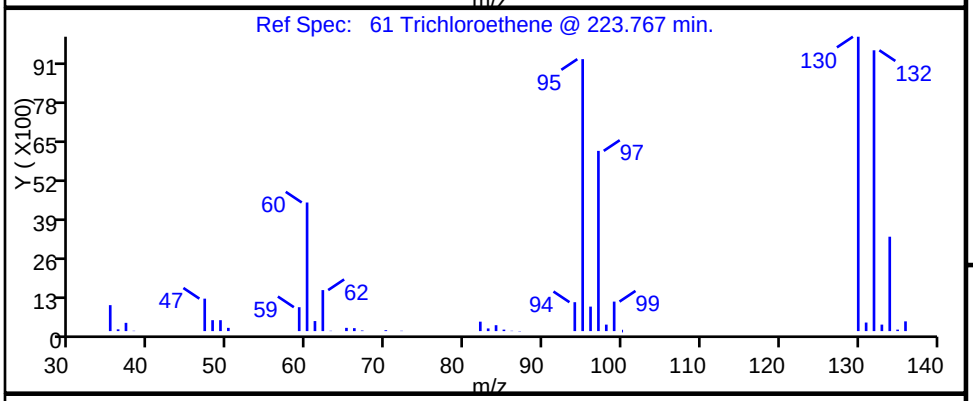
61 Trichloroethene, CAS: 79-01-6

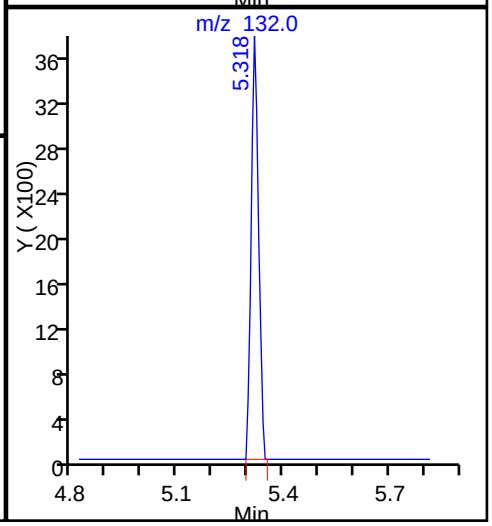


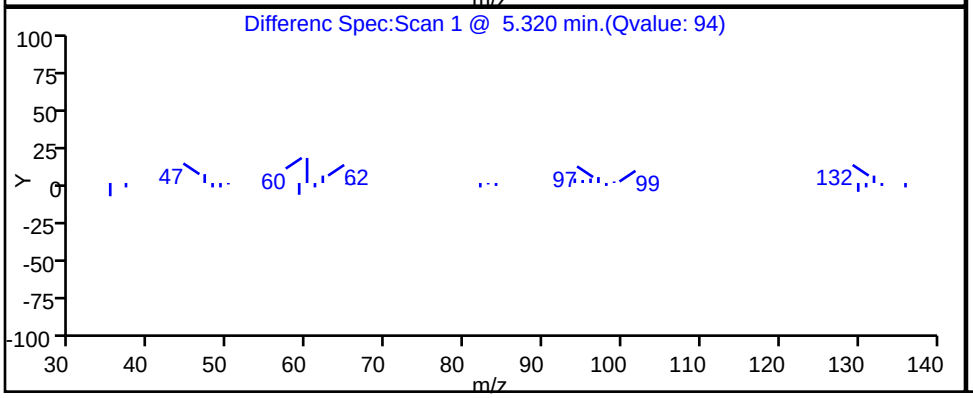












FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-132993/4	H1017IC1.D
Level 2	IC 320-132993/5	H1017IC2.D
Level 3	IC 320-132993/6	H1017IC3.D
Level 4	IC 320-132993/7	H1017IC4.D
Level 5	ICIS 320-132993/8	H1017IC5.D
Level 6	IC 320-132993/9	H1017IC6.D
Level 7	IC 320-132993/10	H1017IC7.D
Level 8	IC 320-132993/11	H1017IC8.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Dichlorodifluoromethane	+++++ 0.3594	0.2164 0.3515	0.1805 +++++	0.3595	0.3414	Lin	-0.089	0.3550							1.0000		0.9900
Chloromethane	+++++ 0.4333	0.3927 0.4223	0.4046 0.4397	0.4416	0.4225	Ave		0.4224			0.1000	4.3		15.0			
Vinyl chloride	0.2930 0.3811	0.3289 0.3815	0.3362 0.3854	0.3807	0.3796	Ave		0.3583				9.6		15.0			
Bromomethane	0.1649 0.1812	0.1593 0.1791	0.1834 0.1670	0.1771	0.1866	Ave		0.1748				5.6		15.0			
Chloroethane	+++++ 0.2070	0.1985 0.1989	0.1806 0.1977	0.2066	0.2084	Ave		0.1997				4.8		15.0			
Trichlorofluoromethane	+++++ 0.4430	0.3304 0.4346	0.3887 0.4446	0.4377	0.4437	Ave		0.4175				10.3		15.0			
1,1-Dichloroethene	+++++ 0.2698	0.2942 0.2753	0.2729 0.2855	0.2893	0.2687	Ave		0.2794				3.6		15.0			
1,1,2-Trichloro-1,2,2-trifluoroethane	+++++ 0.2474	0.1775 0.2560	0.2261 0.2540	0.2374	0.2420	Ave		0.2343				11.6		15.0			
Acetone	+++++ 0.5066	+++++ 0.4909	+++++ 0.5154	0.6050	0.5166	Ave		0.5269				8.5		15.0			
Iodomethane	+++++ 0.4460	0.4116 0.4381	0.4212 0.4323	0.4570	0.4436	Ave		0.4357				3.5		15.0			
Carbon disulfide	+++++ 0.8751	0.8269 0.8673	0.8237 0.8669	0.9238	0.8661	Ave		0.8642				3.9		15.0			
3-Chloro-1-propene	+++++ 0.1662	0.1399 0.1674	0.1684 0.1719	0.1726	0.1672	Ave		0.1648				6.8		15.0			
Methylene Chloride	0.2740 0.2781	0.2873 0.2796	0.2637 0.2741	0.2993	0.2768	Ave		0.2791				3.8		15.0			
tert-Butyl alcohol (TBA)	+++++ 0.8793	+++++ 1.1343	0.8391 1.1195	1.0383	0.9849	Ave		0.9992				12.2		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
trans-1,2-Dichloroethene	+++++ 0.2958	0.3193 0.2898	0.3029 0.2943	0.3136	0.2916	Ave		0.3010				3.8		15.0			
Methyl tert-butyl ether	0.7495 0.8206	0.8273 0.8217	0.7575 0.8126	0.8395	0.8119	Ave		0.8051				4.1		15.0			
Hexane	+++++ 0.4754	0.4216 0.4957	0.3993 0.4914	0.5032	0.4564	Ave		0.4633				8.6		15.0			
1,1-Dichloroethane	0.5064 0.5922	0.5930 0.5879	0.5708 0.5971	0.6270	0.5926	Ave		0.5834			0.1000	6.0		15.0			
Vinyl acetate	+++++ 0.4561	0.4440 0.4717	0.4057 0.4666	0.4779	0.4537	Ave		0.4537				5.3		15.0			
2,2-Dichloropropane	+++++ 0.0990	+++++ 0.0995	0.1174 0.0892	0.1151	0.1080	Ave		0.1047				10.3		15.0			
cis-1,2-Dichloroethene	+++++ 0.3132	0.3510 0.3081	0.3285 0.3132	0.3361	0.3104	Ave		0.3229				5.0		15.0			
2-Butanone (MEK)	+++++ 0.9816	+++++ 0.9322	1.1531 0.9388	1.1071	1.0068	Ave		1.0199				8.9		15.0			
Bromochloromethane	+++++ 0.1426	0.1312 0.1434	0.1230 0.1436	0.1462	0.1388	Ave		0.1384				6.0		15.0			
Chloroform	+++++ 0.5033	0.4919 0.5042	0.4841 0.5047	0.5344	0.5053	Ave		0.5040				3.1		15.0			
1,1,1-Trichloroethane	+++++ 0.4597	0.4316 0.4519	0.4618 0.4412	0.4773	0.4610	Ave		0.4549				3.3		15.0			
Cyclohexane	0.5103 0.5895	0.5819 0.5991	0.5712 0.5946	0.6253	0.5788	Ave		0.5813				5.7		15.0			
Carbon tetrachloride	+++++ 0.4287	0.4308 0.4236	0.3976 0.4300	0.4442	0.4257	Ave		0.4258				3.3		15.0			
1,1-Dichloropropene	+++++ 0.4187	0.4228 0.4148	0.4018 0.4194	0.4428	0.4128	Ave		0.4190				3.0		15.0			
Isobutyl alcohol	+++++ 0.4923	0.4326 0.4918	0.3918 0.4754	0.5697	0.4799	Ave		0.4762				11.6		15.0			
Benzene	+++++ 1.1036	1.0393 1.1064	1.0971 1.1086	1.1690	1.1092	Ave		1.1047				3.4		15.0			
1,2-Dichloroethane	+++++ 0.4398	0.4510 0.4442	0.4393 0.4374	0.4845	0.4491	Ave		0.4493				3.6		15.0			
Trichloroethene	+++++ 0.3240	0.3503 0.3238	0.3114 0.3263	0.3424	0.3267	Ave		0.3293				3.9		15.0			
1,2-Dichloropropane	+++++ 0.2954	0.2861 0.2995	0.2708 0.2992	0.3088	0.2943	Ave		0.2934				4.1		15.0			
Dibromomethane	+++++ 0.1813	0.1713 0.1803	0.1795 0.1785	0.1905	0.1812	Ave		0.1804				3.1		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Bromodichloromethane	+++++ 0.3744	0.3698 0.3794	0.3584 0.3752	0.3828	0.3717	Ave		0.3731				2.1		15.0			
cis-1,3-Dichloropropene	+++++ 0.4282	0.3660 0.4362	0.3870 0.4408	0.4232	0.4280	Ave		0.4156				6.7		15.0			
4-Methyl-2-pentanone (MIBK)	+++++ 1.6294	+++++ 1.5423	1.4625 1.5346	1.6136	1.5715	Ave		1.5590				3.9		15.0			
Toluene	0.7172 0.7021	0.6886 0.7065	0.6481 0.7195	0.7271	0.7082	Ave		0.7022				3.5		15.0			
trans-1,3-Dichloropropene	+++++ 0.3935	0.3641 0.4025	0.3513 0.4007	0.3850	0.3785	Ave		0.3822				5.0		15.0			
Ethyl methacrylate	+++++ 0.3695	0.3232 0.3793	0.3289 0.3761	0.3559	0.3662	Ave		0.3570				6.3		15.0			
1,1,2-Trichloroethane	0.2055 0.2364	0.2042 0.2371	0.2216 0.2351	0.2299	0.2311	Ave		0.2251				6.0		15.0			
Tetrachloroethene	+++++ 0.4296	0.4209 0.4421	0.3985 0.4378	0.4651	0.4226	Ave		0.4310				4.8		15.0			
1,3-Dichloropropane	0.5802 0.5570	0.5099 0.5745	0.5198 0.5579	0.5994	0.5539	Ave		0.5566				5.4		15.0			
2-Hexanone	+++++ 1.4116	1.2572 1.3355	1.2294 1.2970	1.4428	1.3496	Ave		1.3319				5.8		15.0			
Chlorodibromomethane	0.3497 0.3955	0.3569 0.4044	0.3453 0.3987	0.4017	0.3909	Ave		0.3804				6.6		15.0			
1,2-Dibromoethane (EDB)	+++++ 0.3536	0.3159 0.3666	0.3197 0.3536	0.3790	0.3547	Ave		0.3490				6.7		15.0			
Chlorobenzene	+++++ 1.0176	1.0100 1.0379	0.9994 1.0114	1.0906	1.0024	Ave		1.0242			0.3000	3.1		15.0			
1,1,1,2-Tetrachloroethane	+++++ 0.3718	0.3685 0.3792	0.3378 0.3706	0.3914	0.3701	Ave		0.3699				4.4		15.0			
Ethylbenzene	+++++ 1.8389	1.7853 1.8893	1.7258 1.8493	1.9447	1.8511	Ave		1.8406				3.8		15.0			
m-Xylene & p-Xylene	+++++ 1.4276	1.4228 1.4613	1.4212 1.4309	1.5039	1.4462	Ave		1.4449				2.1		15.0			
o-Xylene	+++++ 1.4814	1.3148 1.4999	1.3641 1.4710	1.5382	1.4744	Ave		1.4491				5.5		15.0			
Styrene	+++++ 1.0405	+++++ 1.0777	0.9456 1.0604	1.0481	1.0364	Ave		1.0348				4.5		15.0			
Bromoform	+++++ 0.2791	0.2681 0.2968	0.2509 0.2886	0.2790	0.2742	Ave		0.2767			0.1000	5.3		15.0			
Isopropylbenzene	+++++ 1.7852	1.7202 1.8438	1.6439 1.7966	1.8536	1.7823	Ave		1.7751				4.1		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Bromobenzene	+++++ 0.7995	0.7239 0.7931	0.7498 0.7785	0.8010	0.7570	Ave		0.7718				3.8		15.0			
1,1,2,2-Tetrachloroethane	+++++ 0.9817	0.8430 0.9789	0.9110 0.9629	1.0096	0.9412	Ave		0.9469			0.3000	5.9		15.0			
1,2,3-Trichloropropane	0.3055 0.3672	0.3523 0.3641	0.3393 0.3626	0.4047	0.3653	Ave		0.3576				7.8		15.0			
trans-1,4-Dichloro-2-butene	+++++ 0.2586	+++++ 0.2625	0.2270 0.2606	0.2390	0.2491	Ave		0.2495				5.7		15.0			
N-Propylbenzene	3.8536 4.3106	3.7323 4.2450	3.8844 4.2020	4.3819	4.1024	Ave		4.0890				5.8		15.0			
2-Chlorotoluene	+++++ 2.4759	2.3563 2.4440	2.2516 2.4182	2.5866	2.3696	Ave		2.4146				4.4		15.0			
1,3,5-Trimethylbenzene	+++++ 2.9140	2.6213 2.8897	2.5453 2.8558	2.8961	2.7768	Ave		2.7856				5.3		15.0			
4-Chlorotoluene	+++++ 2.8669	2.6935 2.8207	2.5060 2.7774	3.0390	2.7490	Ave		2.7789				5.9		15.0			
tert-Butylbenzene	+++++ 2.5766	2.3001 2.5718	2.3212 2.5545	2.5599	2.4078	Ave		2.4703				5.0		15.0			
1,2,4-Trimethylbenzene	2.7855 2.9448	2.7207 2.8977	2.5042 2.8615	2.9317	2.7677	Ave		2.8017				5.2		15.0			
sec-Butylbenzene	+++++ 3.7630	3.1134 3.7072	3.1688 3.6914	3.6757	3.5220	Ave		3.5202				7.7		15.0			
1,3-Dichlorobenzene	1.5754 1.5212	1.4090 1.5036	1.4542 1.4903	1.6051	1.4426	Ave		1.5002				4.4		15.0			
p-Isopropyltoluene	+++++ 3.1660	2.6454 3.1681	2.6615 3.1271	3.1017	2.9844	Ave		2.9792				7.7		15.0			
1,4-Dichlorobenzene	+++++ 1.5111	1.3159 1.4890	1.4181 1.4743	1.5989	1.4312	Ave		1.4626				6.0		15.0			
1,2-Dichlorobenzene	1.3340 1.4055	1.2750 1.3897	1.2793 1.3676	1.4260	1.3231	Ave		1.3500				4.2		15.0			
n-Butylbenzene	+++++ 2.8205	2.3551 2.8443	2.3044 2.7844	2.6979	2.6421	Ave		2.6355				8.4		15.0			
1,2-Dibromo-3-Chloropropane	+++++ 0.3517	0.2527 0.3483	0.2699 0.3402	0.3448	0.3346	Ave		0.3203				12.8		15.0			
1,2,4-Trichlorobenzene	0.7798 0.9012	0.7067 0.9161	0.7401 0.9059	0.8058	0.8046	Ave		0.8200				9.7		15.0			
Hexachlorobutadiene	+++++ 0.4547	0.3535 0.4581	0.3968 0.4487	0.4036	0.4103	Ave		0.4179				9.1		15.0			
Naphthalene	+++++ 3.1886	2.5433 3.2177	2.3742 3.1989	2.8590	2.8853	Ave		2.8953				11.6		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
1,2,3-Trichlorobenzene	+++++ 0.8384	0.7100 0.8587	0.6738 0.8435	0.7512	0.7469	Ave		0.7746				9.4		15.0			
Dibromofluoromethane (Surr)	0.2666	0.2964 0.2618	0.2510 0.2624	0.2531	0.2531	Ave		0.2635				5.9		15.0			
1,2-Dichloroethane-d4 (Surr)	0.3492	0.3653 0.3417	0.3447 0.3393	0.3391	0.3441	Ave		0.3462				2.6		15.0			
Toluene-d8 (Surr)	0.9966	1.0467 0.9913	0.9694 0.9914	0.8811	0.9420	Ave		0.9741				5.3		15.0			
4-Bromofluorobenzene (Surr)	0.3917	0.4493 0.4014	0.3944 0.3916	0.3751	0.3796	Ave		0.3976				6.2		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-132993/4	H1017IC1.D
Level 2	IC 320-132993/5	H1017IC2.D
Level 3	IC 320-132993/6	H1017IC3.D
Level 4	IC 320-132993/7	H1017IC4.D
Level 5	ICIS 320-132993/8	H1017IC5.D
Level 6	IC 320-132993/9	H1017IC6.D
Level 7	IC 320-132993/10	H1017IC7.D
Level 8	IC 320-132993/11	H1017IC8.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Dichlorodifluoromethane	FB	Lin	+++++ 338618	2531 516621	4139 +++++	33539	161836	+++++ 40.0	0.500 60.0	1.00 +++++	4.00	20.0
Chloromethane	FB	Ave	+++++ 408261	4594 620595	9278 857730	41197	200256	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Vinyl chloride	FB	Ave	1759 359126	3847 560709	7709 751662	35510	179904	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Bromomethane	FB	Ave	990 170696	1863 263204	4206 325800	16517	88453	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Chloroethane	FB	Ave	+++++ 195063	2322 292386	4141 385633	19270	98779	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Trichlorofluoromethane	FB	Ave	+++++ 417409	3865 638704	8914 867300	40835	210300	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,1-Dichloroethene	FB	Ave	+++++ 254245	3441 404546	6258 556869	26987	127364	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	FB	Ave	+++++ 233144	2076 376224	5184 495514	22141	114711	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Acetone	BUT	Ave	+++++ 181414	+++++ 292528	+++++ 404240	21689	96742	+++++ 40.0	+++++ 60.0	+++++ 80.0	4.00	20.0
Iodomethane	FB	Ave	+++++ 420272	4815 643905	9660 843199	42629	210285	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Carbon disulfide	FB	Ave	+++++ 824560	9672 1274612	18889 1691018	86179	410517	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
3-Chloro-1-propene	FB	Ave	+++++ 156604	1637 246042	3862 335205	16098	79248	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Methylene Chloride	FB	Ave	1645 262054	3361 410993	6047 534703	27916	131191	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
tert-Butyl alcohol (TBA)	TBAd9	Ave	+++++ 806511	+++++ 1695127	20251 2272937	83650	488518	+++++ 400	+++++ 600	10.0 800	40.0	200
trans-1,2-Dichloroethene	FB	Ave	+++++ 278753	3735 425951	6946 573986	29252	138194	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Methyl tert-butyl ether	FB	Ave	4500 773273	9677 1207576	17371 1585067	78316	384847	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Hexane	FB	Ave	+++++ 447912	4932 728547	9157 958432	46940	216317	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,1-Dichloroethane	FB	Ave	3040 557973	6936 863980	13089 1164650	58492	280881	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Vinyl acetate	FB	Ave	+++++ 429744	5193 693296	9303 910170	44577	215028	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
2,2-Dichloropropane	FB	Ave	+++++ 93312	+++++ 146236	2693 174034	10739	51213	+++++ 40.0	+++++ 60.0	1.00 80.0	4.00	20.0
cis-1,2-Dichloroethene	FB	Ave	+++++ 295118	4106 452875	7534 610887	31351	147148	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
2-Butanone (MEK)	BUT	Ave	+++++ 351531	+++++ 555509	10402 736398	39689	188527	+++++ 40.0	+++++ 60.0	1.00 80.0	4.00	20.0
Bromochloromethane	FB	Ave	+++++ 134352	1535 210808	2821 280171	13637	65796	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Chloroform	FB	Ave	+++++ 474274	5754 740978	11101 984360	49851	239515	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,1,1-Trichloroethane	FB	Ave	+++++ 433119	5048 664183	10591 860630	44524	218492	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Cyclohexane	FB	Ave	3064 555450	6807 880496	13098 1159773	58334	274337	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Carbon tetrachloride	FB	Ave	+++++ 403978	5039 622602	9118 838820	41435	201761	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,1-Dichloropropene	FB	Ave	+++++ 394536	4946 609697	9214 818114	41307	195683	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Isobutyl alcohol	TBAd9	Ave	+++++ 1128977	11290 1837387	23638 2413050	114750	595120	+++++ 1000	12.5 1500	25.0 2000	100	500
Benzene	FB	Ave	+++++ 1039893	12157 1626034	25160 2162309	109051	525771	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2-Dichloroethane	FB	Ave	+++++ 414388	5275 652843	10075 853196	45192	212883	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Trichloroethene	FB	Ave	+++++ 305263	4097 475898	7141 636529	31939	154852	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2-Dichloropropane	FB	Ave	+++++ 278305	3346 440151	6210 583590	28807	139490	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Dibromomethane	FB	Ave	+++++ 170881	2004 264957	4116 348154	17771	85875	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Bromodichloromethane	FB	Ave	+++++ 352819	4326 557550	8218 731852	35706	176190	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
cis-1,3-Dichloropropene	FB	Ave	+++++ 403487	4281 641053	8876 859858	39481	202870	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
4-Methyl-2-pentanone (MIBK)	BUT	Ave	+++++ 583501	+++++ 919052	13193 1203703	57848	294276	+++++ 40.0	+++++ 60.0	1.00 80.0	4.00	20.0
Toluene	FB	Ave	4306 661531	8055 1038379	14862 1403397	67829	335699	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
trans-1,3-Dichloropropene	FB	Ave	+++++ 370784	4259 591548	8056 781678	35910	179386	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Ethyl methacrylate	FB	Ave	+++++ 348164	3781 557460	7542 733609	33201	173571	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,1,2-Trichloroethane	FB	Ave	1234 222716	2388 348511	5081 458655	21445	109525	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Tetrachloroethene	CBNZ d5	Ave	+++++ 296884	3556 466515	6545 628386	31243	145398	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,3-Dichloropropane	CBNZ d5	Ave	2414 384920	4308 606288	8537 800669	40261	190604	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
2-Hexanone	BUT	Ave	+++++ 505491	5763 795804	11090 1017322	51724	252734	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Chlorodibromomethane	CBNZ d5	Ave	1455 273325	3015 426797	5671 572278	26986	134493	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2-Dibromoethane (EDB)	CBNZ d5	Ave	+++++ 244337	2669 386908	5250 507492	25456	122054	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Chlorobenzene	CBNZ d5	Ave	+++++ 703187	8533 1095355	16412 1451571	73258	344919	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,1,1,2-Tetrachloroethane	CBNZ d5	Ave	+++++ 256936	3113 400158	5548 531934	26293	127348	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Ethylbenzene	CBNZ d5	Ave	+++++ 1270661	15083 1993829	28341 2654165	130626	636942	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
m-Xylene & p-Xylene	CBNZ d5	Ave	+++++ 986483	12021 1542120	23339 2053681	101019	497631	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
o-Xylene	CBNZ d5	Ave	+++++ 1023644	11108 1582871	22402 2111175	103324	507316	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Styrene	CBNZ d5	Ave	+++++ 718973	+++++ 1137337	15529 1521892	70403	356632	+++++ 40.0	+++++ 60.0	1.00 80.0	4.00	20.0
Bromoform	CBNZ d5	Ave	+++++ 192863	2265 313259	4121 414191	18743	94359	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Isopropylbenzene	CBNZ d5	Ave	+++++ 1233559	14533 1945769	26996 2578431	124509	613274	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Bromobenzene	DCBd 4	Ave	+++++ 274850	3117 434781	6428 569768	27457	137023	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,1,2,2-Tetrachloroethane	DCBd 4	Ave	+++++ 337463	3630 536637	7810 704670	34608	170371	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2,3-Trichloropropane	DCBd 4	Ave	639 126227	1517 199597	2909 265404	13871	66129	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
trans-1,4-Dichloro-2-butene	DCBd 4	Ave	+++++ 88901	+++++ 143934	1946 190740	8192	45095	+++++ 40.0	+++++ 60.0	1.00 80.0	4.00	20.0
N-Propylbenzene	DCBd 4	Ave	8060 1481846	16071 2327223	33302 3075295	150207	742556	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
2-Chlorotoluene	DCBd 4	Ave	+++++ 851126	10146 1339849	19304 1769778	88666	428903	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,3,5-Trimethylbenzene	DCBd 4	Ave	+++++ 1001728	11287 1584189	21822 2090025	99276	502618	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
4-Chlorotoluene	DCBd 4	Ave	+++++ 985546	11598 1546364	21485 2032641	104173	497581	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
tert-Butylbenzene	DCBd 4	Ave	+++++ 885748	9904 1409908	19900 1869544	87752	435834	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2,4-Trimethylbenzene	DCBd 4	Ave	5826 1012340	11715 1588616	21469 2094223	100496	500966	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
sec-Butylbenzene	DCBd 4	Ave	+++++ 1293582	13406 2032369	27167 2701593	125999	637504	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,3-Dichlorobenzene	DCBd 4	Ave	3295 522937	6067 824309	12467 1090705	55021	261114	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
p-Isopropyltoluene	DCBd 4	Ave	+++++ 1088362	11391 1736861	22818 2288565	106324	540186	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,4-Dichlorobenzene	DCBd 4	Ave	+++++ 519469	5666 816295	12158 1079006	54809	259056	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2-Dichlorobenzene	DCBd 4	Ave	2790 483169	5490 761849	10968 1000872	48880	239493	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
n-Butylbenzene	DCBd 4	Ave	+++++ 969603	10141 1559319	19756 2037765	92482	478237	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2-Dibromo-3-Chloropropane	DCBd 4	Ave	+++++ 120896	1088 190926	2314 248989	11819	60567	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2,4-Trichlorobenzene	DCBd 4	Ave	1631 309788	3043 502253	6345 662990	27623	145637	0.250 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Hexachlorobutadiene	DCBd 4	Ave	+++++ 156300	1522 251128	3402 328385	13836	74262	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Naphthalene	DCBd 4	Ave	+++++ 1096139	10951 1764011	20355 2341134	98004	522253	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
1,2,3-Trichlorobenzene	DCBd 4	Ave	+++++ 288214	3057 470740	5777 617293	25750	135196	+++++ 40.0	0.500 60.0	1.00 80.0	4.00	20.0
Dibromofluoromethane (Surr)	FB	Ave	251166	6933 384830	11513 511836	23611	119977	40.0	1.00 60.0	2.00 80.0	4.00	20.0
1,2-Dichloroethane-d4 (Surr)	FB	Ave	329054	8545 502167	15811 661730	31633	163123	40.0	1.00 60.0	2.00 80.0	4.00	20.0
Toluene-d8 (Surr)	FB	Ave	939046	24487 1456927	44462 1933710	82196	446510	40.0	1.00 60.0	2.00 80.0	4.00	20.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 132993

SDG No.:

Instrument ID: HP12 GC Column: DB-624 ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 10/17/2016 20:59 Calibration End Date: 10/17/2016 23:36 Calibration ID: 26011

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
4-Bromofluorobenzene (Surr)	CBNZ d5	Ave	270645	7592 423626	12955 561973	25193	130624	40.0	1.00 60.0	2.00 80.0	4.00	20.0

Curve Type Legend:

Ave = Average ISTD
Lin = Linear ISTD

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC1.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 17-Oct-2016 20:59:30 ALS Bottle#: 18 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLIC1
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub57

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:04:14 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

First Level Reviewer: shardaa Date: 18-Oct-2016 09:35:55

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	436378	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	445152	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	240150	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	16393	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	90	166436	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	98	83661	10.0	10.0	
13 Dichlorodifluoromethane	85		1.142				ND	ND	
14 Chloromethane	50	1.276	1.276	0.000	93	2335	0.2500	0.2302	
15 Vinyl chloride	62	1.373	1.373	0.000	94	1759	0.2500	0.2044	
17 Butadiene	54	1.410	1.404	0.006	87	1799	0.2500	0.2131	
18 Bromomethane	94	1.654	1.648	0.006	23	990	0.2500	0.2358	
19 Chloroethane	64		1.745				ND	ND	
20 Trichlorofluoromethane	101	1.965	1.971	-0.006	24	1870	0.2500	0.1865	
23 1,1-Dichloroethene	96	2.440	2.434	0.006	93	1550	0.2500	0.2310	
24 1,1,2-Trichloro-1,2,2-trif	101		2.471				ND	ND	
25 Acetone	43		2.501				ND	ND	
26 Iodomethane	142	2.562	2.562	0.000	94	2253	0.2500	0.2153	
27 Ethyl bromide	108	2.599	2.593	0.006	34	979	0.2500	0.2306	
28 Carbon disulfide	76	2.617	2.617	0.000	97	4923	0.2500	0.2372	
29 Isopropyl alcohol	45		2.660				ND	ND	
30 3-Chloro-1-propene	76	2.775	2.776	-0.001	95	830	0.2500	0.2097	
31 Methylene Chloride	84	2.891	2.885	0.006	94	1645	0.2500	0.2454	
33 2-Methyl-2-propanol	59	3.025	3.025	0.000	91	4845	2.50	2.22	
34 Acrylonitrile	53	3.123	3.117	0.006	93	12050	2.50	2.24	
35 trans-1,2-Dichloroethene	96	3.141	3.135	0.006	60	1926	0.2500	0.2664	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	94	4500	0.2500	0.2327	
37 Hexane	57	3.385	3.391	-0.006	91	2686	0.2500	0.2414	
38 1,1-Dichloroethane	63	3.513	3.507	0.006	95	3040	0.2500	0.2170	
39 Vinyl acetate	43		3.574				ND	ND	
43 2,2-Dichloropropane	79		4.019				ND	ND	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	90	1994	0.2500	0.2571	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
45 2-Butanone (MEK)	43		4.037				ND	ND	
48 Chlorobromomethane	128	4.220	4.220	0.000	81	544	0.2500	0.1637	
49 Tetrahydrofuran	42	4.269	4.263	0.006	91	3200	0.5000	0.5328	
50 Chloroform	83	4.300	4.300	0.000	95	2973	0.2500	0.2456	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	90	2660	0.2500	0.2435	
52 Cyclohexane	56	4.495	4.489	0.006	93	3064	0.2500	0.2195	
53 Carbon tetrachloride	117	4.592	4.586	0.006	90	2290	0.2500	0.2239	
54 1,1-Dichloropropene	75	4.592	4.586	0.006	82	2323	0.2500	0.2308	
55 Isobutyl alcohol	43		4.720				ND	ND	
56 Benzene	78	4.763	4.763	0.000	96	6392	0.2500	0.2409	
57 1,2-Dichloroethane	62	4.787	4.781	0.006	92	2366	0.2500	0.2193	
60 n-Heptane	43		5.007				ND	ND	
61 Trichloroethene	95	5.318	5.318	0.000	91	1538	0.2500	0.1945	
62 1,2-Dichloropropane	63	5.513	5.507	0.006	86	1612	0.2500	0.2288	
63 Dibromomethane	93	5.610	5.604	0.006	45	1008	0.2500	0.2327	
65 1,4-Dioxane	88		5.629				ND	ND	
66 Dichlorobromomethane	83	5.750	5.751	-0.001	91	2358	0.2500	0.2632	
67 2-Chloroethyl vinyl ether	63	6.025	6.019	0.006	86	1112	0.2500	0.2130	
68 cis-1,3-Dichloropropene	75	6.147	6.141	0.006	90	2245	0.2500	0.2249	
69 4-Methyl-2-pentanone (MIBK	43	6.287	6.281	0.006	92	3367	0.2500	0.2426	
70 Toluene	92	6.433	6.427	0.006	93	4306	0.2500	0.2554	
72 trans-1,3-Dichloropropene	75	6.634	6.628	0.006	94	2312	0.2500	0.2519	
73 Ethyl methacrylate	69	6.726	6.720	0.006	85	1823	0.2500	0.2126	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	89	1234	0.2500	0.2283	
75 Tetrachloroethene	166	6.915	6.915	0.000	92	1855	0.2500	0.2586	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	95	2414	0.2500	0.2606	
77 2-Hexanone	43	7.025	7.025	0.000	89	2768	0.2500	0.2334	
78 Chlorodibromomethane	129	7.140	7.141	0.000	93	1455	0.2500	0.2298	
79 Ethylene Dibromide	107	7.238	7.238	0.000	89	1459	0.2500	0.2512	
80 1-Chlorohexane	91		7.677				ND	ND	
81 Chlorobenzene	112	7.695	7.689	0.006	96	3924	0.2500	0.2302	
82 1,1,1,2-Tetrachloroethane	131	7.774	7.768	0.006	34	1362	0.2500	0.2212	
83 Ethylbenzene	91	7.799	7.799	0.000	99	7762	0.2500	0.2534	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	81	6437	0.2500	0.2677	
86 o-Xylene	91	8.274	8.274	0.000	95	5589	0.2500	0.2317	
87 Styrene	104	8.287	8.287	0.000	95	3660	0.2500	0.2125	
88 Bromoform	173	8.451	8.451	0.000	21	911	0.2500	0.1978	
89 Isopropylbenzene	105	8.622	8.622	0.000	97	6297	0.2500	0.2131	
90 Bromobenzene	156	8.908	8.902	0.006	92	1380	0.2500	0.2137	
91 1,1,2,2-Tetrachloroethane	83	8.914	8.908	0.006	91	1939	0.2500	0.2448	
92 1,2,3-Trichloropropane	110	8.951	8.945	0.006	91	639	0.2500	0.2136	
93 trans-1,4-Dichloro-2-buten	89		8.969				ND	ND	
94 N-Propylbenzene	91	9.012	9.018	-0.006	98	8060	0.2500	0.2356	
95 2-Chlorotoluene	91	9.091	9.091	0.000	95	4966	0.2500	0.2458	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	86	5310	0.2500	0.2279	
98 4-Chlorotoluene	91	9.195	9.195	0.000	93	4917	0.2500	0.2115	
99 tert-Butylbenzene	119	9.500	9.500	0.000	91	4620	0.2500	0.2235	
100 1,2,4-Trimethylbenzene	105	9.548	9.549	-0.001	97	5826	0.2500	0.2486	
101 sec-Butylbenzene	105	9.707	9.713	-0.006	95	6733	0.2500	0.2286	
102 1,3-Dichlorobenzene	146	9.811	9.811	0.000	93	3295	0.2500	0.2625	
103 4-Isopropyltoluene	119		9.859				ND	ND	
104 1,4-Dichlorobenzene	146	9.890	9.896	-0.006	90	3339	0.2500	0.2729	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
106 1,2-Dichlorobenzene	146	10.250	10.256	-0.006	72	2790	0.2500	0.2470	
105 n-Butylbenzene	91	10.256	10.256	0.000	93	4681	0.2500	0.2123	
108 1,2-Dibromo-3-Chloropropan	75		11.018				ND	ND	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	82	1631	0.2500	0.2377	
111 Hexachlorobutadiene	225		12.012				ND	ND	
112 Naphthalene	128	12.072	12.072	0.000	98	5325	0.2500	0.2198	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	91	1283	0.2500	0.1980	
116 Methylcyclohexane	83		0.000				ND	ND	
128 Methyl acetate	43		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		0.5000	0.5235	
S 139 Xylenes, Total	106				0		0.5000	0.4994	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

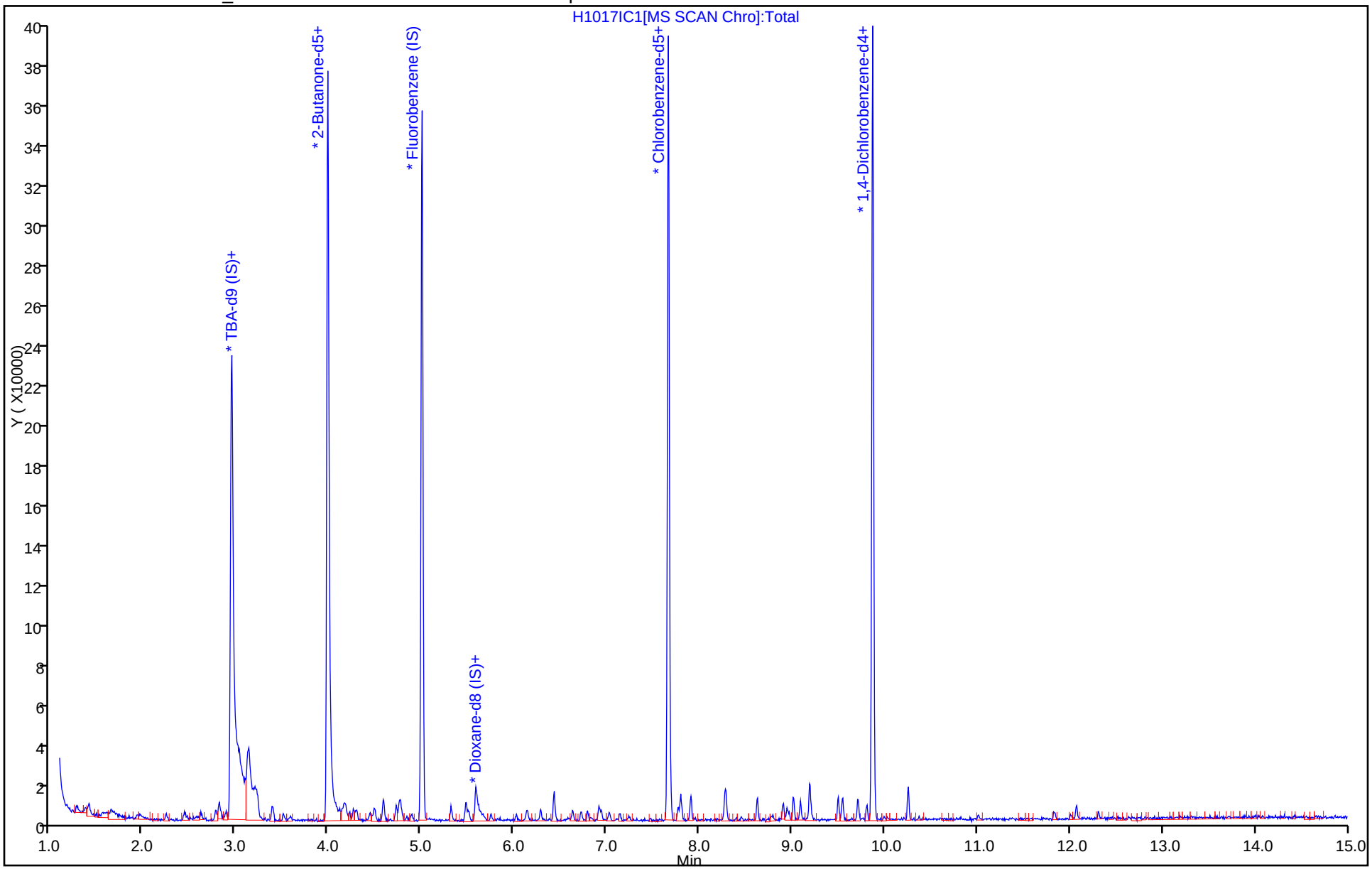
MV8260MMIM_00096	Amount Added:	0.06	Units: uL	
MVODDNEW_00077	Amount Added:	0.06	Units: uL	
MVVAIM_00141	Amount Added:	0.06	Units: uL	
MVGASESIM_00111	Amount Added:	0.06	Units: uL	
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 19-Oct-2016 17:04:24 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC1.D

Injection Date:	17-Oct-2016 20:59:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	IC 1			Worklist Smp#:	4
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	18
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC2.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Oct-2016 21:22:30 ALS Bottle#: 19 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLIC2
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub57

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:04:35 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

First Level Reviewer: gipsonk Date: 18-Oct-2016 10:49:40

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	417590	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	458406	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	233945	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	17029	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	90	168972	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	98	86118	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	93	6933	1.00	1.12	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	8545	1.00	1.06	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	97	24487	1.00	1.07	
$ 12 4-Bromofluorobenzene (Surr	174	8.762	8.768	-0.006	86	7592	1.00	1.13	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	96	2531	0.5000	0.5542	
14 Chloromethane	50	1.270	1.276	-0.006	98	4594	0.5000	0.4649	
15 Vinyl chloride	62	1.367	1.373	-0.006	97	3847	0.5000	0.4590	
17 Butadiene	54	1.404	1.404	0.000	96	3712	0.5000	0.4514	
18 Bromomethane	94	1.648	1.648	0.000	90	1863	0.5000	0.4555	
19 Chloroethane	64	1.745	1.745	0.000	95	2322	0.5000	0.4971	
20 Trichlorofluoromethane	101	1.959	1.971	-0.012	94	3865	0.5000	0.3957	
23 1,1-Dichloroethene	96	2.434	2.434	0.000	89	3441	0.5000	0.5265	
24 1,1,2-Trichloro-1,2,2-trif	101	2.465	2.471	-0.006	86	2076	0.5000	0.3787	
25 Acetone	43	2.513	2.501	0.012	41	2754	0.5000	0.5701	
26 Iodomethane	142	2.562	2.562	0.000	97	4815	0.5000	0.4724	
27 Ethyl bromide	108	2.587	2.593	-0.006	90	1854	0.5000	0.4484	
28 Carbon disulfide	76	2.623	2.617	0.006	99	9672	0.5000	0.4784	
29 Isopropyl alcohol	45		2.660				ND	ND	
30 3-Chloro-1-propene	76	2.769	2.776	-0.007	94	1637	0.5000	0.4246	
31 Methylene Chloride	84	2.885	2.885	0.000	96	3361	0.5000	0.5147	
33 2-Methyl-2-propanol	59	3.026	3.025	0.001	95	10544	5.00	5.05	
34 Acrylonitrile	53	3.123	3.117	0.006	96	23945	5.00	4.57	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	51	3735	0.5000	0.5303	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	96	9677	0.5000	0.5138	
37 Hexane	57	3.391	3.391	0.000	88	4932	0.5000	0.4551	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.507	3.507	0.000	98	6936	0.5000	0.5082	
39 Vinyl acetate	43	3.580	3.574	0.006	100	5193	0.5000	0.4893	
43 2,2-Dichloropropane	79		4.019				ND	ND	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	96	4106	0.5000	0.5435	
45 2-Butanone (MEK)	43	4.038	4.037	0.001	99	5514	0.5000	0.5897	
48 Chlorobromomethane	128	4.227	4.220	0.007	97	1535	0.5000	0.4740	
49 Tetrahydrofuran	42	4.269	4.263	0.006	89	6054	1.00	1.03	
50 Chloroform	83	4.300	4.300	0.000	94	5754	0.5000	0.4880	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	60	5048	0.5000	0.4743	
52 Cyclohexane	56	4.489	4.489	0.000	93	6807	0.5000	0.5005	
53 Carbon tetrachloride	117	4.586	4.586	0.000	92	5039	0.5000	0.5058	
54 1,1-Dichloropropene	75	4.592	4.586	0.006	84	4946	0.5000	0.5045	
55 Isobutyl alcohol	43	4.720	4.720	0.000	93	11290	12.5	11.4	
56 Benzene	78	4.763	4.763	0.000	97	12157	0.5000	0.4704	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	96	5275	0.5000	0.5018	
60 n-Heptane	43		5.007				ND	ND	
61 Trichloroethene	95	5.318	5.318	0.000	95	4097	0.5000	0.5319	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	86	3346	0.5000	0.4874	
63 Dibromomethane	93	5.610	5.604	0.006	93	2004	0.5000	0.4749	
65 1,4-Dioxane	88	5.641	5.629	0.012	7	647	10.0	13.9	
66 Dichlorobromomethane	83	5.751	5.751	0.000	96	4326	0.5000	0.4956	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	93	2157	0.5000	0.4241	
68 cis-1,3-Dichloropropene	75	6.147	6.141	0.006	96	4281	0.5000	0.4403	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	98	6822	0.5000	0.4773	
70 Toluene	92	6.427	6.427	0.000	91	8055	0.5000	0.4904	
72 trans-1,3-Dichloropropene	75	6.635	6.628	0.007	97	4259	0.5000	0.4763	
73 Ethyl methacrylate	69	6.720	6.720	0.000	84	3781	0.5000	0.4527	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	90	2388	0.5000	0.4535	
75 Tetrachloroethene	166	6.915	6.915	0.000	94	3556	0.5000	0.4883	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	89	4308	0.5000	0.4581	
77 2-Hexanone	43	7.025	7.025	0.000	91	5763	0.5000	0.4720	
78 Chlorodibromomethane	129	7.141	7.141	0.001	93	3015	0.5000	0.4691	
79 Ethylene Dibromide	107	7.244	7.238	0.006	96	2669	0.5000	0.4526	
80 1-Chlorohexane	91	7.677	7.677	0.000	88	4882	0.5000	0.5271	
81 Chlorobenzene	112	7.689	7.689	0.000	80	8533	0.5000	0.4931	
82 1,1,1,2-Tetrachloroethane	131	7.769	7.768	0.001	93	3113	0.5000	0.4980	
83 Ethylbenzene	91	7.799	7.799	0.000	99	15083	0.5000	0.4850	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	82	12021	0.5000	0.4924	
86 o-Xylene	91	8.275	8.274	0.001	95	11108	0.5000	0.4536	
87 Styrene	104	8.293	8.287	0.006	97	8001	0.5000	0.4576	
88 Bromoform	173	8.457	8.451	0.006	89	2265	0.5000	0.4845	
89 Isopropylbenzene	105	8.628	8.622	0.006	97	14533	0.5000	0.4845	
90 Bromobenzene	156	8.902	8.902	0.000	94	3117	0.5000	0.4689	
91 1,1,2,2-Tetrachloroethane	83	8.909	8.908	0.001	94	3630	0.5000	0.4452	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	91	1517	0.5000	0.4926	
93 trans-1,4-Dichloro-2-buten	89	8.970	8.969	0.001	68	869	0.5000	0.4045	
94 N-Propylbenzene	91	9.018	9.018	0.000	98	16071	0.5000	0.4564	
95 2-Chlorotoluene	91	9.091	9.091	0.000	98	10146	0.5000	0.4879	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	87	11287	0.5000	0.4705	
98 4-Chlorotoluene	91	9.195	9.195	0.000	98	11598	0.5000	0.4846	
99 tert-Butylbenzene	119	9.500	9.500	0.000	91	9904	0.5000	0.4656	
100 1,2,4-Trimethylbenzene	105	9.549	9.549	0.000	97	11715	0.5000	0.4855	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	13406	0.5000	0.4422	
102 1,3-Dichlorobenzene	146	9.805	9.811	-0.006	95	6067	0.5000	0.4696	
103 4-Isopropyltoluene	119	9.860	9.859	0.001	96	11391	0.5000	0.4440	
104 1,4-Dichlorobenzene	146	9.890	9.896	-0.006	88	5666	0.5000	0.4498	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	74	5490	0.5000	0.4722	
105 n-Butylbenzene	91	10.250	10.256	-0.006	97	10141	0.5000	0.4468	
108 1,2-Dibromo-3-Chloropropan	75	11.012	11.018	-0.006	82	1088	0.5000	0.3944	
110 1,2,4-Trichlorobenzene	180	11.835	11.829	0.006	93	3043	0.5000	0.4309	
111 Hexachlorobutadiene	225	12.005	12.012	-0.007	83	1522	0.5000	0.4229	
112 Naphthalene	128	12.073	12.072	0.001	98	10951	0.5000	0.4392	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	92	3057	0.5000	0.4583	
116 Methylcyclohexane	83		0.000				ND	ND	
128 Methyl acetate	43		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		1.00	1.07	
S 139 Xylenes, Total	106				0		1.00	0.9460	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

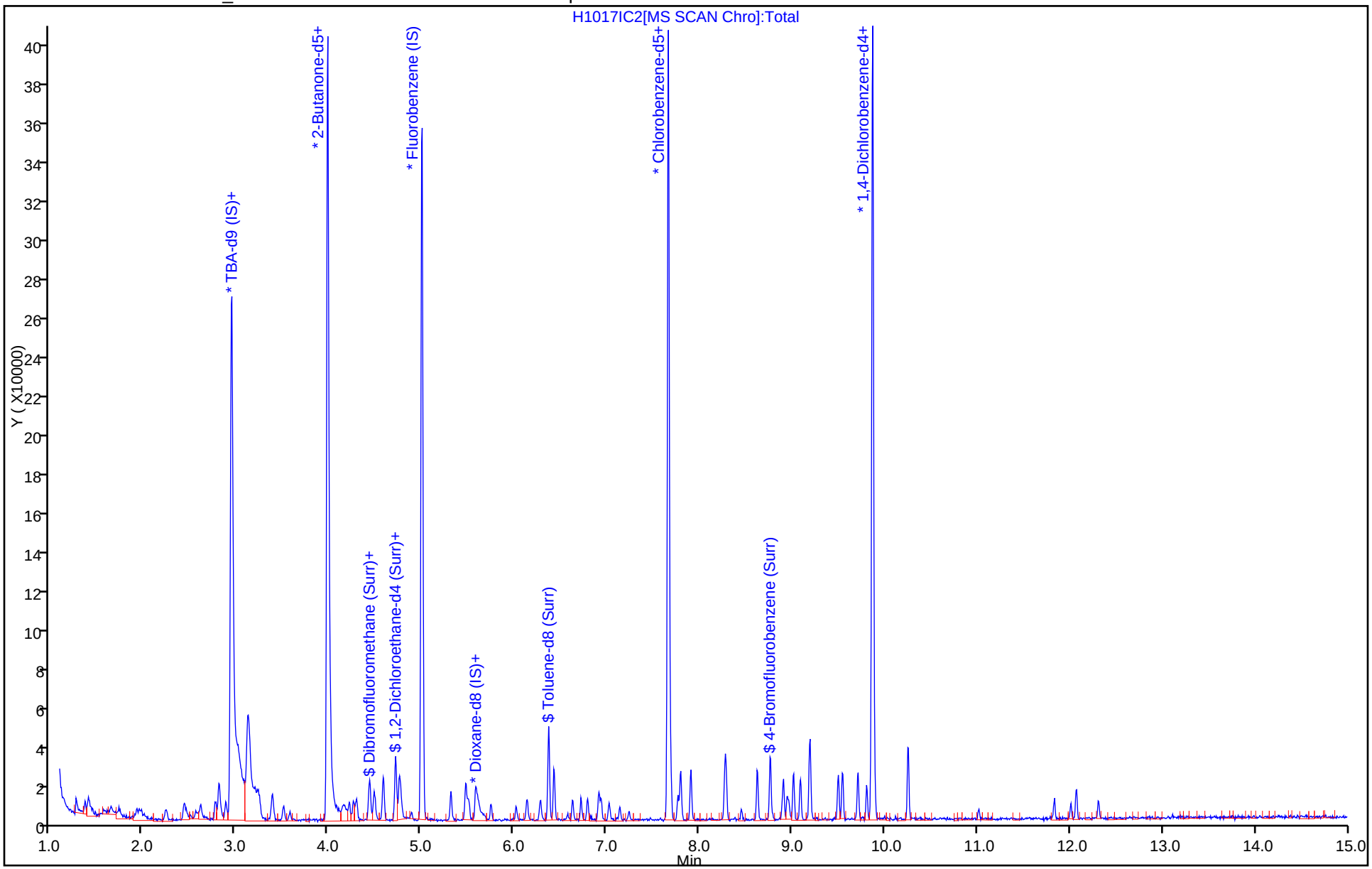
MVGASESIM_00111	Amount Added:	0.13	Units: uL	
MV8260MMIM_00096	Amount Added:	0.13	Units: uL	
MVODDNEW_00077	Amount Added:	0.13	Units: uL	
MVVAIM_00141	Amount Added:	0.13	Units: uL	
MV8260SUIM_00091	Amount Added:	0.50	Units: uL	
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 19-Oct-2016 17:04:40 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC2.D

Injection Date:	17-Oct-2016 21:22:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	IC 2			Worklist Smp#:	5
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	19
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC3.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Oct-2016 21:44:30 ALS Bottle#: 20 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLIC3
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub57

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:04:48 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

First Level Reviewer: gipsonk Date: 18-Oct-2016 10:54:55

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	482678	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	451034	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	229325	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	17355	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	90	164223	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	97	85733	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	11513	2.00	1.91	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.720	4.714	0.006	0	15811	2.00	1.99	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	44462	2.00	1.99	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	85	12955	2.00	1.98	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	97	4139	1.00	0.7578	
14 Chloromethane	50	1.276	1.276	0.000	98	9278	1.00	0.9578	
15 Vinyl chloride	62	1.373	1.373	0.000	98	7709	1.00	0.9383	
17 Butadiene	54	1.410	1.404	0.006	96	7647	1.00	0.9486	
18 Bromomethane	94	1.648	1.648	0.000	95	4206	1.00	1.05	
19 Chloroethane	64	1.751	1.745	0.006	96	4141	1.00	0.9043	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	97	8914	1.00	0.9309	
23 1,1-Dichloroethene	96	2.446	2.434	0.012	96	6258	1.00	0.9768	
24 1,1,2-Trichloro-1,2,2-trif	101	2.465	2.471	-0.006	92	5184	1.00	0.9647	
25 Acetone	43	2.507	2.501	0.006	96	5675	1.00	1.19	
26 Iodomethane	142	2.568	2.562	0.006	98	9660	1.00	0.9668	
27 Ethyl bromide	108	2.599	2.593	0.006	96	4099	1.00	1.01	
28 Carbon disulfide	76	2.617	2.617	0.000	100	18889	1.00	0.9531	
29 Isopropyl alcohol	45		2.660				ND	ND	
30 3-Chloro-1-propene	76	2.782	2.776	0.006	95	3862	1.00	1.02	
31 Methylene Chloride	84	2.891	2.885	0.006	98	6047	1.00	0.9447	
33 2-Methyl-2-propanol	59	3.031	3.025	0.006	94	20251	10.0	8.40	
34 Acrylonitrile	53	3.123	3.117	0.006	96	48268	10.0	9.41	
35 trans-1,2-Dichloroethene	96	3.141	3.135	0.006	93	6946	1.00	1.01	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	96	17371	1.00	0.9409	
37 Hexane	57	3.391	3.391	0.000	93	9157	1.00	0.8619	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.513	3.507	0.006	99	13089	1.00	0.9784	
39 Vinyl acetate	43	3.580	3.574	0.006	99	9303	1.00	0.8942	
43 2,2-Dichloropropane	79	4.013	4.019	-0.006	62	2693	1.00	1.12	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	7534	1.00	1.02	
45 2-Butanone (MEK)	43	4.043	4.037	0.006	98	10402	1.00	1.13	
48 Chlorobromomethane	128	4.220	4.220	0.000	97	2821	1.00	0.8887	
49 Tetrahydrofuran	42	4.269	4.263	0.006	90	11266	2.00	1.96	
50 Chloroform	83	4.300	4.300	0.000	96	11101	1.00	0.9605	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	97	10591	1.00	1.02	
52 Cyclohexane	56	4.495	4.489	0.006	93	13098	1.00	0.9825	
53 Carbon tetrachloride	117	4.586	4.586	0.000	92	9118	1.00	0.9338	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	86	9214	1.00	0.9588	
55 Isobutyl alcohol	43	4.726	4.720	0.006	97	23638	25.0	20.6	
56 Benzene	78	4.763	4.763	0.000	98	25160	1.00	0.99	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	10075	1.00	0.9778	
60 n-Heptane	43		5.007				ND	ND	
61 Trichloroethene	95	5.318	5.318	0.000	96	7141	1.00	0.9457	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	88	6210	1.00	0.9229	
63 Dibromomethane	93	5.610	5.604	0.006	93	4116	1.00	1.00	
65 1,4-Dioxane	88	5.629	5.629	0.000	66	1312	20.0	19.6	
66 Dichlorobromomethane	83	5.750	5.751	-0.001	96	8218	1.00	0.9605	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	95	4440	1.00	0.8906	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	97	8876	1.00	0.9312	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	96	13193	1.00	0.9381	
70 Toluene	92	6.427	6.427	0.000	93	14862	1.00	0.9230	
72 trans-1,3-Dichloropropene	75	6.628	6.628	0.000	96	8056	1.00	0.9191	
73 Ethyl methacrylate	69	6.726	6.720	0.006	88	7542	1.00	0.9212	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	95	5081	1.00	0.9843	
75 Tetrachloroethene	166	6.915	6.915	0.000	92	6545	1.00	0.9248	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	95	8537	1.00	0.9340	
77 2-Hexanone	43	7.025	7.025	0.000	92	11090	1.00	0.9231	
78 Chlorodibromomethane	129	7.140	7.141	0.000	95	5671	1.00	0.9078	
79 Ethylene Dibromide	107	7.244	7.238	0.006	99	5250	1.00	0.9160	
80 1-Chlorohexane	91	7.677	7.677	0.000	90	8638	1.00	0.9597	
81 Chlorobenzene	112	7.689	7.689	0.000	94	16412	1.00	0.9758	
82 1,1,1,2-Tetrachloroethane	131	7.768	7.768	0.000	94	5548	1.00	0.9132	
83 Ethylbenzene	91	7.799	7.799	0.000	99	28341	1.00	0.9376	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	23339	1.00	0.9836	
86 o-Xylene	91	8.274	8.274	0.000	98	22402	1.00	0.9414	
87 Styrene	104	8.287	8.287	0.000	98	15529	1.00	0.9138	
88 Bromoform	173	8.451	8.451	0.000	93	4121	1.00	0.9069	
89 Isopropylbenzene	105	8.628	8.622	0.006	97	26996	1.00	0.9261	
90 Bromobenzene	156	8.902	8.902	0.000	95	6428	1.00	0.9714	
91 1,1,2,2-Tetrachloroethane	83	8.908	8.908	0.000	73	7810	1.00	0.9621	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	93	2909	1.00	0.9488	
93 trans-1,4-Dichloro-2-buten	89	8.963	8.969	-0.006	80	1946	1.00	0.9098	
94 N-Propylbenzene	91	9.018	9.018	0.000	99	33302	1.00	0.9500	
95 2-Chlorotoluene	91	9.091	9.091	0.000	97	19304	1.00	0.9325	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	93	21822	1.00	0.9138	
98 4-Chlorotoluene	91	9.195	9.195	0.000	98	21485	1.00	0.9018	
99 tert-Butylbenzene	119	9.500	9.500	0.000	92	19900	1.00	0.9396	
100 1,2,4-Trimethylbenzene	105	9.542	9.549	-0.007	98	21469	1.00	0.8938	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	27167	1.00	0.9002	
102 1,3-Dichlorobenzene	146	9.811	9.811	0.000	96	12467	1.00	0.9693	
103 4-Isopropyltoluene	119	9.853	9.859	-0.006	98	22818	1.00	0.8934	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	95	12158	1.00	0.9696	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	72	10968	1.00	0.9476	
105 n-Butylbenzene	91	10.256	10.256	0.000	96	19756	1.00	0.8743	
108 1,2-Dibromo-3-Chloropropan	75	11.018	11.018	0.000	88	2314	1.00	0.8427	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	93	6345	1.00	0.9025	
111 Hexachlorobutadiene	225	12.011	12.012	-0.001	91	3402	1.00	0.9494	
112 Naphthalene	128	12.072	12.072	0.000	98	20355	1.00	0.8200	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	92	5777	1.00	0.8699	
116 Methylcyclohexane	83		0.000				ND	ND	
128 Methyl acetate	43		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		2.00	2.02	
S 139 Xylenes, Total	106				0		2.00	1.92	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

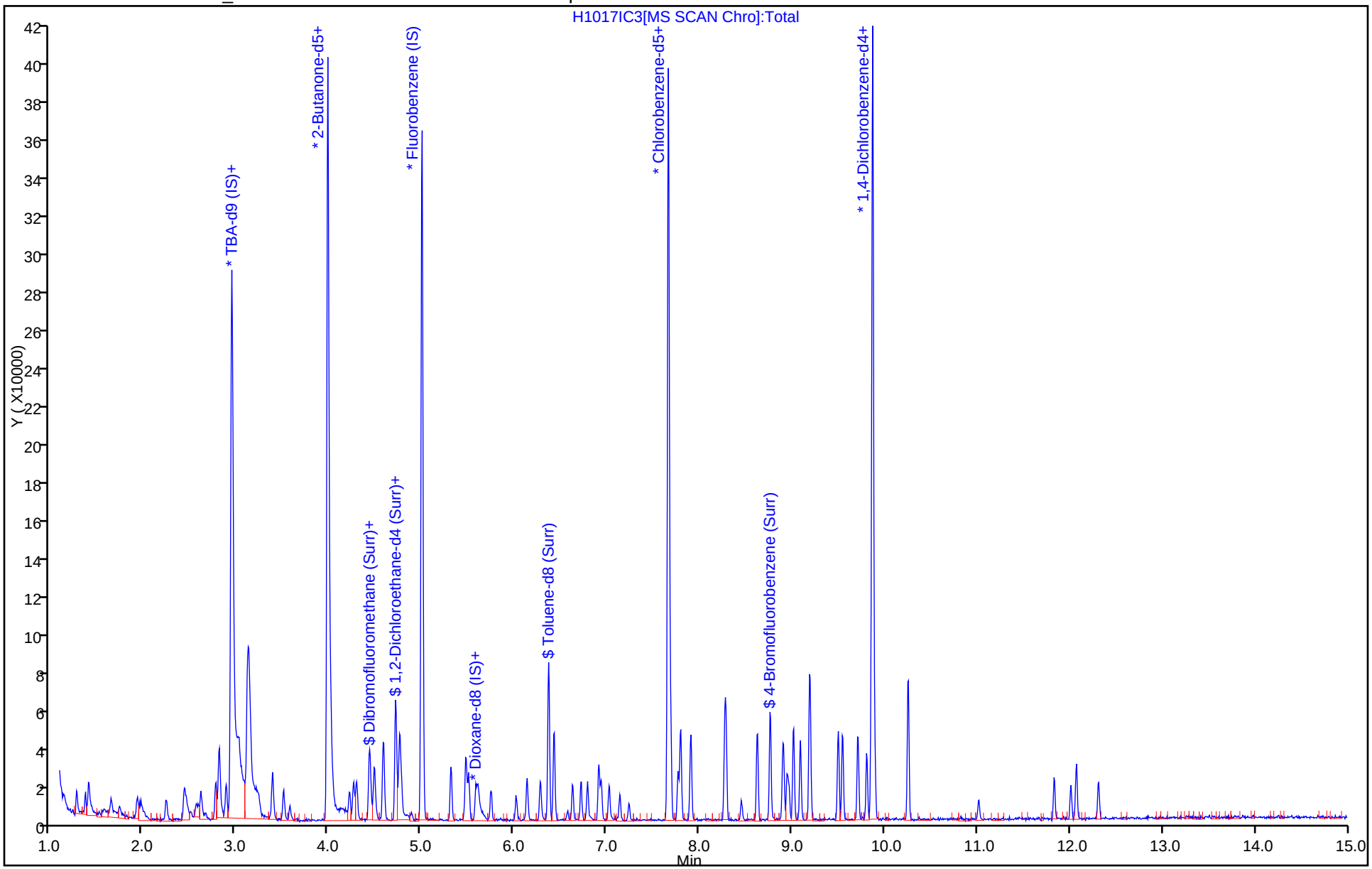
MVGASESIM_00111	Amount Added:	0.25	Units: uL	
MV8260MMIM_00096	Amount Added:	0.25	Units: uL	
MVODDNEW_00077	Amount Added:	0.25	Units: uL	
MVVAIM_00141	Amount Added:	0.25	Units: uL	
MV8260SUIM_00091	Amount Added:	1.00	Units: uL	
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 19-Oct-2016 17:04:50 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC3.D

Injection Date:	17-Oct-2016 21:44:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	IC 3			Worklist Smp#:	6
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	20
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC4.D
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Oct-2016 22:07:30 ALS Bottle#: 21 Worklist Smp#: 7
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLIC4
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub57

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:04:57 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

First Level Reviewer: gipsonk Date: 18-Oct-2016 11:00:54

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	402818	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	448119	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	233210	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.592	5.586	0.006	0	16785	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	89	167929	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	98	85697	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	95	23611	4.00	3.84	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.720	4.714	0.006	0	31633	4.00	3.92	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	82196	4.00	3.62	
$ 12 4-Bromofluorobenzene (Surr	174	8.762	8.768	-0.006	86	25193	4.00	3.77	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	98	33539	4.00	4.30	
14 Chloromethane	50	1.276	1.276	0.000	98	41197	4.00	4.18	
15 Vinyl chloride	62	1.373	1.373	0.000	98	35510	4.00	4.25	
17 Butadiene	54	1.410	1.404	0.006	97	34307	4.00	4.18	
18 Bromomethane	94	1.648	1.648	0.000	98	16517	4.00	4.05	
19 Chloroethane	64	1.745	1.745	0.000	99	19270	4.00	4.14	
20 Trichlorofluoromethane	101	1.965	1.971	-0.006	97	40835	4.00	4.19	
23 1,1-Dichloroethene	96	2.440	2.434	0.006	93	26987	4.00	4.14	
24 1,1,2-Trichloro-1,2,2-trif	101	2.471	2.471	0.000	96	22141	4.00	4.05	
25 Acetone	43	2.507	2.501	0.006	99	21689	4.00	4.59	
26 Iodomethane	142	2.568	2.562	0.006	98	42629	4.00	4.20	
27 Ethyl bromide	108	2.593	2.593	0.000	99	17439	4.00	4.23	
28 Carbon disulfide	76	2.617	2.617	0.000	100	86179	4.00	4.28	
29 Isopropyl alcohol	45		2.660				ND	ND	
30 3-Chloro-1-propene	76	2.782	2.776	0.006	96	16098	4.00	4.19	
31 Methylene Chloride	84	2.891	2.885	0.006	98	27916	4.00	4.29	
33 2-Methyl-2-propanol	59	3.025	3.025	0.000	96	83650	40.0	41.6	
34 Acrylonitrile	53	3.123	3.117	0.006	93	218766	40.0	41.9	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	93	29252	4.00	4.17	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	97	78316	4.00	4.17	
37 Hexane	57	3.391	3.391	0.000	91	46940	4.00	4.34	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.513	3.507	0.006	99	58492	4.00	4.30	
39 Vinyl acetate	43	3.574	3.574	0.000	99	44577	4.00	4.21	
43 2,2-Dichloropropane	79	4.013	4.019	-0.006	64	10739	4.00	4.40	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	97	31351	4.00	4.16	
45 2-Butanone (MEK)	43	4.044	4.037	0.007	99	39689	4.00	4.34	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	13637	4.00	4.22	
49 Tetrahydrofuran	42	4.263	4.263	0.000	94	47777	8.00	8.19	
50 Chloroform	83	4.300	4.300	0.000	96	49851	4.00	4.24	
51 1,1,1-Trichloroethane	97	4.452	4.446	0.006	97	44524	4.00	4.20	
52 Cyclohexane	56	4.489	4.489	0.000	95	58334	4.00	4.30	
53 Carbon tetrachloride	117	4.586	4.586	0.000	90	41435	4.00	4.17	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	90	41307	4.00	4.23	
55 Isobutyl alcohol	43	4.720	4.720	0.000	98	114750	100.0	119.6	
56 Benzene	78	4.763	4.763	0.000	97	109051	4.00	4.23	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	45192	4.00	4.31	
60 n-Heptane	43	5.007	5.007	0.000	48	40869	4.00	3.97	
61 Trichloroethene	95	5.318	5.318	0.000	95	31939	4.00	4.16	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	90	28807	4.00	4.21	
63 Dibromomethane	93	5.610	5.604	0.006	96	17771	4.00	4.22	
65 1,4-Dioxane	88	5.629	5.629	0.000	98	8794	80.0	88.1	
66 Dichlorobromomethane	83	5.751	5.751	0.000	97	35706	4.00	4.10	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	94	20998	4.00	4.14	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	96	39481	4.00	4.07	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	98	57848	4.00	4.14	
70 Toluene	92	6.433	6.427	0.006	93	67829	4.00	4.14	
72 trans-1,3-Dichloropropene	75	6.628	6.628	0.000	96	35910	4.00	4.03	
73 Ethyl methacrylate	69	6.720	6.720	0.000	85	33201	4.00	3.99	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	97	21445	4.00	4.09	
75 Tetrachloroethene	166	6.915	6.915	0.000	95	31243	4.00	4.32	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	97	40261	4.00	4.31	
77 2-Hexanone	43	7.025	7.025	0.000	93	51724	4.00	4.33	
78 Chlorodibromomethane	129	7.141	7.141	0.000	98	26986	4.00	4.22	
79 Ethylene Dibromide	107	7.238	7.238	0.000	97	25456	4.00	4.34	
80 1-Chlorohexane	91	7.677	7.677	0.000	92	36874	4.00	4.01	
81 Chlorobenzene	112	7.689	7.689	0.000	97	73258	4.00	4.26	
82 1,1,1,2-Tetrachloroethane	131	7.768	7.768	0.000	98	26293	4.00	4.23	
83 Ethylbenzene	91	7.799	7.799	0.000	99	130626	4.00	4.23	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	101019	4.00	4.16	
86 o-Xylene	91	8.274	8.274	0.000	97	103324	4.00	4.25	
87 Styrene	104	8.287	8.287	0.000	99	70403	4.00	4.05	
88 Bromoform	173	8.451	8.451	0.000	92	18743	4.00	4.03	
89 Isopropylbenzene	105	8.628	8.622	0.006	97	124509	4.00	4.18	
90 Bromobenzene	156	8.902	8.902	0.000	97	27457	4.00	4.15	
91 1,1,2,2-Tetrachloroethane	83	8.908	8.908	0.000	98	34608	4.00	4.26	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	94	13871	4.00	4.53	
93 trans-1,4-Dichloro-2-buten	89	8.969	8.969	0.000	72	8192	4.00	3.83	
94 N-Propylbenzene	91	9.018	9.018	0.000	98	150207	4.00	4.29	
95 2-Chlorotoluene	91	9.091	9.091	0.000	97	88666	4.00	4.28	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	92	99276	4.00	4.16	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	104173	4.00	4.37	
99 tert-Butylbenzene	119	9.500	9.500	0.000	92	87752	4.00	4.15	
100 1,2,4-Trimethylbenzene	105	9.549	9.549	0.000	98	100496	4.00	4.19	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	125999	4.00	4.18	
102 1,3-Dichlorobenzene	146	9.811	9.811	0.000	98	55021	4.00	4.28	
103 4-Isopropyltoluene	119	9.859	9.859	0.000	98	106324	4.00	4.16	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	95	54809	4.00	4.37	
106 1,2-Dichlorobenzene	146	10.250	10.256	-0.006	88	48880	4.00	4.23	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	92482	4.00	4.09	
108 1,2-Dibromo-3-Chloropropan	75	11.012	11.018	-0.006	91	11819	4.00	4.31	
110 1,2,4-Trichlorobenzene	180	11.835	11.829	0.006	94	27623	4.00	3.93	
111 Hexachlorobutadiene	225	12.012	12.012	0.000	94	13836	4.00	3.86	
112 Naphthalene	128	12.072	12.072	0.000	99	98004	4.00	3.95	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	94	25750	4.00	3.88	
116 Methylcyclohexane	83		0.000				ND	ND	
128 Methyl acetate	43		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		8.00	8.33	
S 139 Xylenes, Total	106				0		8.00	8.41	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

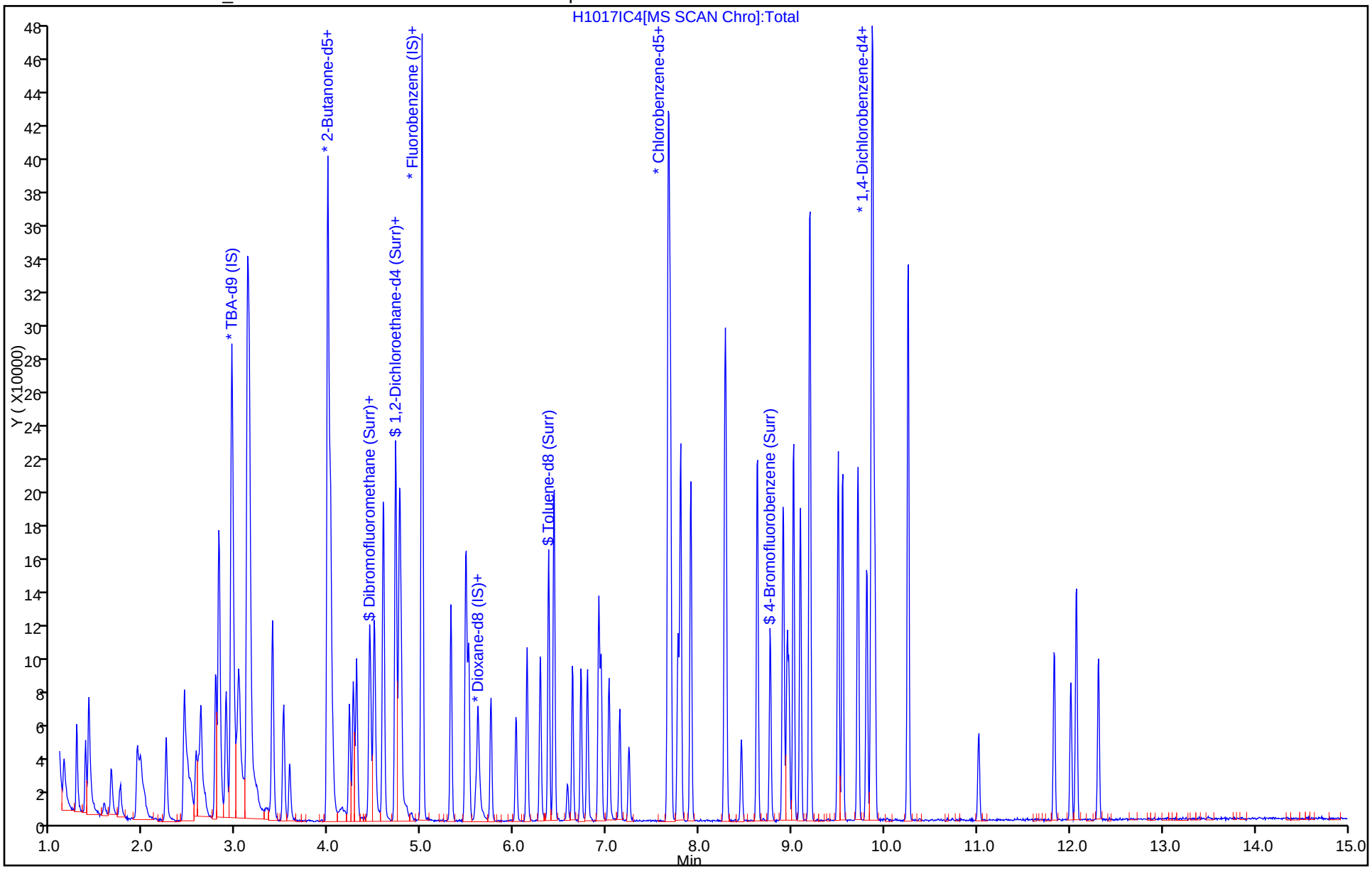
MVGASESIM_00111	Amount Added:	1.00	Units: uL	
MVVAIM_00141	Amount Added:	1.00	Units: uL	
MV8260MMIM_00096	Amount Added:	1.00	Units: uL	
MVODDNEW_00077	Amount Added:	1.00	Units: uL	
MV8260SUIM_00091	Amount Added:	2.00	Units: uL	
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 19-Oct-2016 17:04:58 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC4.D

Injection Date:	17-Oct-2016 22:07:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	IC 4			Worklist Smp#:	7
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	21
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC5.D
Lims ID: ICIS
Client ID:
Sample Type: ICIS Calib Level: 5
Inject. Date: 17-Oct-2016 22:29:30 ALS Bottle#: 22 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLIC5
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub57

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:05:03 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

First Level Reviewer: shardaa Date: 18-Oct-2016 09:28:19

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	496024	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	468150	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	236995	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	19204	200.0	200.0	M
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	89	172047	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	97	90503	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	119977	20.0	19.2	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	163123	20.0	19.9	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	446510	20.0	19.3	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	88	130624	20.0	19.1	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	99	161836	20.0	19.5	
14 Chloromethane	50	1.276	1.276	0.000	99	200256	20.0	20.0	
15 Vinyl chloride	62	1.373	1.373	0.000	98	179904	20.0	21.2	
17 Butadiene	54	1.404	1.404	0.000	96	176927	20.0	21.2	
18 Bromomethane	94	1.648	1.648	0.000	99	88453	20.0	21.3	
19 Chloroethane	64	1.745	1.745	0.000	99	98779	20.0	20.9	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	98	210300	20.0	21.3	
23 1,1-Dichloroethene	96	2.434	2.434	0.000	93	127364	20.0	19.2	
24 1,1,2-Trichloro-1,2,2-trif	101	2.471	2.471	0.000	97	114711	20.0	20.7	
25 Acetone	43	2.501	2.501	0.000	99	96742	20.0	19.6	
26 Iodomethane	142	2.562	2.562	0.000	98	210285	20.0	20.4	
27 Ethyl bromide	108	2.593	2.593	0.000	99	84893	20.0	20.3	
28 Carbon disulfide	76	2.617	2.617	0.000	100	410517	20.0	20.0	
29 Isopropyl alcohol	45	2.660	2.660	0.000	100	99068	100.0	100.4	
30 3-Chloro-1-propene	76	2.776	2.776	0.000	97	79248	20.0	20.3	
31 Methylene Chloride	84	2.885	2.885	0.000	97	131191	20.0	19.8	
33 2-Methyl-2-propanol	59	3.025	3.025	0.000	95	488518	200.0	197.1	
34 Acrylonitrile	53	3.117	3.117	0.000	94	1129496	200.0	213.0	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	94	138194	20.0	19.4	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	97	384847	20.0	20.2	
37 Hexane	57	3.391	3.391	0.000	92	216317	20.0	19.7	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.507	3.507	0.000	99	280881	20.0	20.3	
39 Vinyl acetate	43	3.574	3.574	0.000	100	215028	20.0	20.0	
43 2,2-Dichloropropane	79	4.019	4.019	0.000	94	51213	20.0	20.6	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	147148	20.0	19.2	
45 2-Butanone (MEK)	43	4.037	4.037	0.000	98	188527	20.0	19.7	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	65796	20.0	20.1	
49 Tetrahydrofuran	42	4.263	4.263	0.000	94	229802	40.0	38.8	
50 Chloroform	83	4.300	4.300	0.000	96	239515	20.0	20.1	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	96	218492	20.0	20.3	
52 Cyclohexane	56	4.489	4.489	0.000	95	274337	20.0	19.9	
53 Carbon tetrachloride	117	4.586	4.586	0.000	93	201761	20.0	20.0	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	93	195683	20.0	19.7	
55 Isobutyl alcohol	43	4.720	4.720	0.000	99	595120	500.0	503.9	
56 Benzene	78	4.763	4.763	0.000	98	525771	20.0	20.1	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	98	212883	20.0	20.0	
60 n-Heptane	43	5.007	5.007	0.000	94	204259	20.0	19.5	
61 Trichloroethene	95	5.318	5.318	0.000	96	154852	20.0	19.8	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	91	139490	20.0	20.1	
63 Dibromomethane	93	5.604	5.604	0.000	96	85875	20.0	20.1	
65 1,4-Dioxane	88	5.629	5.629	0.000	94	43928	400.0	375.1	
66 Dichlorobromomethane	83	5.751	5.751	0.000	98	176190	20.0	19.9	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	95	106005	20.0	20.6	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	98	202870	20.0	20.6	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	98	294276	20.0	20.2	
70 Toluene	92	6.427	6.427	0.000	93	335699	20.0	20.2	
72 trans-1,3-Dichloropropene	75	6.628	6.628	0.000	96	179386	20.0	19.8	
73 Ethyl methacrylate	69	6.720	6.720	0.000	88	173571	20.0	20.5	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	98	109525	20.0	20.5	
75 Tetrachloroethene	166	6.915	6.915	0.000	96	145398	20.0	19.6	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	98	190604	20.0	19.9	
77 2-Hexanone	43	7.025	7.025	0.000	94	252734	20.0	20.3	
78 Chlorodibromomethane	129	7.141	7.141	0.000	98	134493	20.0	20.6	
79 Ethylene Dibromide	107	7.238	7.238	0.000	98	122054	20.0	20.3	
80 1-Chlorohexane	91	7.677	7.677	0.000	92	186781	20.0	19.8	
81 Chlorobenzene	112	7.689	7.689	0.000	92	344919	20.0	19.6	
82 1,1,1,2-Tetrachloroethane	131	7.768	7.768	0.000	95	127348	20.0	20.0	
83 Ethylbenzene	91	7.799	7.799	0.000	99	636942	20.0	20.1	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	497631	20.0	20.0	
86 o-Xylene	91	8.274	8.274	0.000	96	507316	20.0	20.3	
87 Styrene	104	8.287	8.287	0.000	99	356632	20.0	20.0	
88 Bromoform	173	8.451	8.451	0.000	95	94359	20.0	19.8	
89 Isopropylbenzene	105	8.622	8.622	0.000	97	613274	20.0	20.1	
90 Bromobenzene	156	8.902	8.902	0.000	96	137023	20.0	19.6	
91 1,1,2,2-Tetrachloroethane	83	8.908	8.908	0.000	99	170371	20.0	19.9	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	95	66129	20.0	20.4	
93 trans-1,4-Dichloro-2-buten	89	8.969	8.969	0.000	80	45095	20.0	20.0	
94 N-Propylbenzene	91	9.018	9.018	0.000	99	742556	20.0	20.1	
95 2-Chlorotoluene	91	9.091	9.091	0.000	97	428903	20.0	19.6	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	92	502618	20.0	19.9	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	497581	20.0	19.8	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	435834	20.0	19.5	
100 1,2,4-Trimethylbenzene	105	9.549	9.549	0.000	98	500966	20.0	19.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	637504	20.0	20.0	
102 1,3-Dichlorobenzene	146	9.811	9.811	0.000	99	261114	20.0	19.2	
103 4-Isopropyltoluene	119	9.859	9.859	0.000	97	540186	20.0	20.0	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	93	259056	20.0	19.6	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	69	239493	20.0	19.6	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	478237	20.0	20.0	
108 1,2-Dibromo-3-Chloropropan	75	11.018	11.018	0.000	93	60567	20.0	20.9	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	94	145637	20.0	19.6	
111 Hexachlorobutadiene	225	12.012	12.012	0.000	96	74262	20.0	19.6	
112 Naphthalene	128	12.072	12.072	0.000	99	522253	20.0	19.9	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	95	135196	20.0	19.3	
116 Methylcyclohexane	83		0.000				ND	ND	
128 Methyl acetate	43		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		40.0	38.6	
S 139 Xylenes, Total	106				0		40.0	40.4	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

M - Manually Integrated

Reagents:

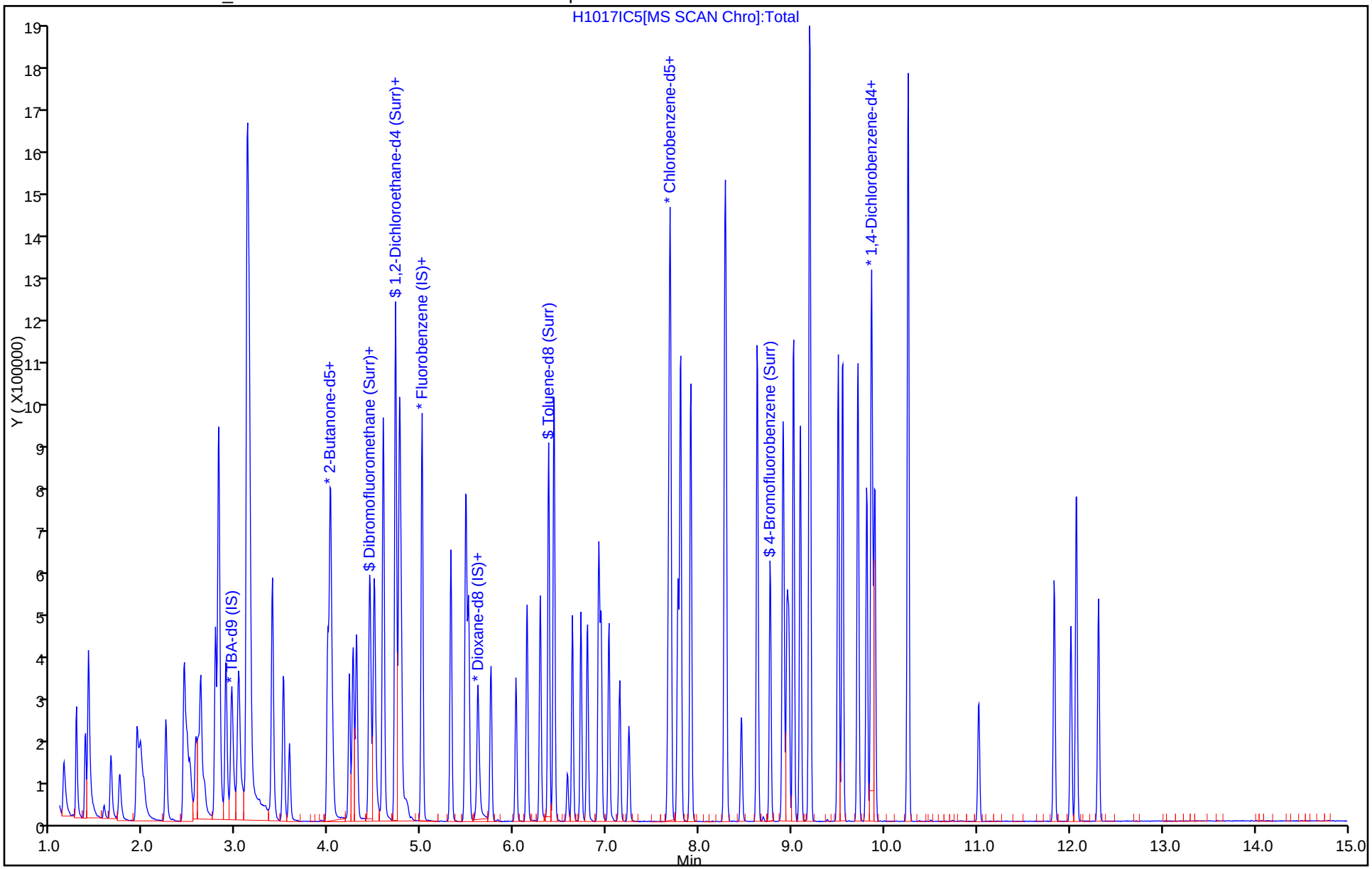
MVGASESIM_00111	Amount Added:	5.00	Units: uL	
MVVAIM_00141	Amount Added:	5.00	Units: uL	
MV8260MMIM_00096	Amount Added:	5.00	Units: uL	
MVODDNEW_00077	Amount Added:	5.00	Units: uL	
MV8260SUIM_00091	Amount Added:	10.00	Units: uL	
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 19-Oct-2016 17:05:04 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC5.D

Injection Date:	17-Oct-2016 22:29:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	ICIS			Worklist Smp#:	8
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	22
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

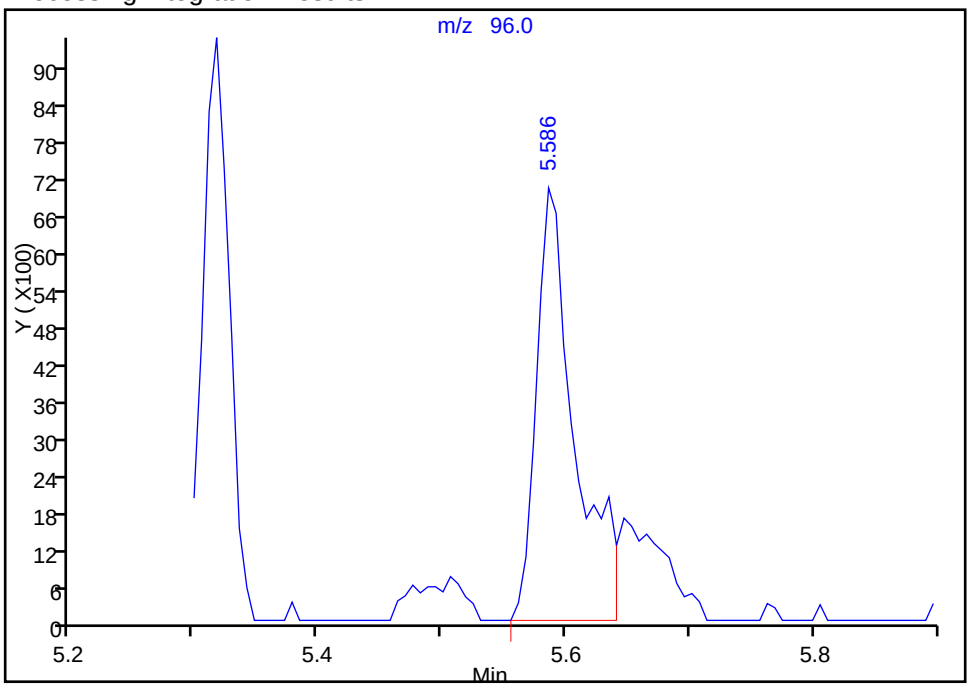
Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC5.D
Injection Date: 17-Oct-2016 22:29:30 Instrument ID: HP12
Lims ID: ICIS
Client ID:
Operator ID: KG ALS Bottle#: 22 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: 8260B_HP12 Limit Group: MSV - 8260B - ICAL
Column: Detector MS SCAN

* 6 Dioxane-d8 (IS), CAS: 17647-74-4

Signal: 1

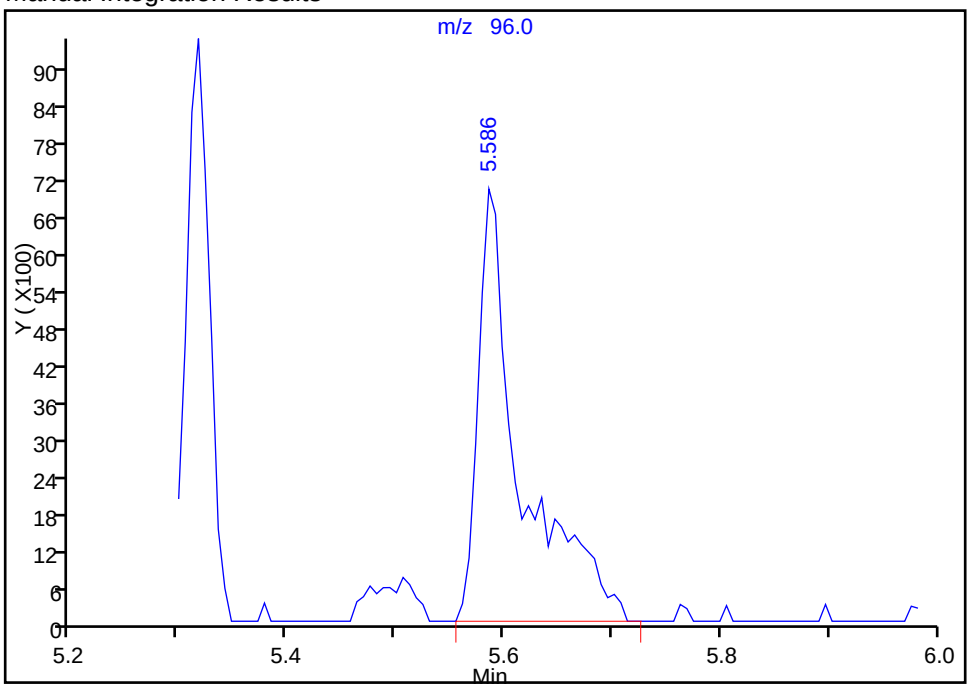
Processing Integration Results

RT: 5.59
Area: 15179
Amount: 200.0000
Amount Units: ug/l



Manual Integration Results

RT: 5.59
Area: 19204
Amount: 200.0000
Amount Units: ug/l



Reviewer: popovae, 19-Oct-2016 16:45:31
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC6.D
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Oct-2016 22:51:30 ALS Bottle#: 23 Worklist Smp#: 9
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLIC6
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub57

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:05:10 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

First Level Reviewer: gipsonk Date: 18-Oct-2016 11:08:33

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	458613	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	447637	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	235568	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	19182	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	88	172752	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	95	85942	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	251166	40.0	40.5	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	329054	40.0	40.3	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	939046	40.0	40.9	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	88	270645	40.0	39.4	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	99	338618	40.0	40.7	
14 Chloromethane	50	1.276	1.276	0.000	99	408261	40.0	41.0	
15 Vinyl chloride	62	1.373	1.373	0.000	98	359126	40.0	42.6	
17 Butadiene	54	1.404	1.404	0.000	97	346977	40.0	41.9	
18 Bromomethane	94	1.648	1.648	0.000	98	170696	40.0	41.5	
19 Chloroethane	64	1.739	1.745	-0.006	99	195063	40.0	41.5	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	97	417409	40.0	42.4	
23 1,1-Dichloroethene	96	2.440	2.434	0.006	93	254245	40.0	38.6	
24 1,1,2-Trichloro-1,2,2-trif	101	2.471	2.471	0.000	97	233144	40.0	42.2	
25 Acetone	43	2.501	2.501	0.000	99	181414	40.0	38.5	
26 Iodomethane	142	2.568	2.562	0.006	99	420272	40.0	40.9	
27 Ethyl bromide	108	2.593	2.593	0.000	99	168035	40.0	40.4	
28 Carbon disulfide	76	2.617	2.617	0.000	100	824560	40.0	40.5	
29 Isopropyl alcohol	45	2.660	2.660	0.000	100	191372	200.0	209.7	
30 3-Chloro-1-propene	76	2.776	2.776	0.000	97	156604	40.0	40.3	
31 Methylene Chloride	84	2.891	2.885	0.006	97	262054	40.0	39.9	
33 2-Methyl-2-propanol	59	3.026	3.025	0.001	95	806511	400.0	352.0	
34 Acrylonitrile	53	3.117	3.117	0.000	94	2137648	400.0	405.5	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	95	278753	40.0	39.3	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	97	773273	40.0	40.8	
37 Hexane	57	3.391	3.391	0.000	92	447912	40.0	41.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.507	3.507	0.000	99	557973	40.0	40.6	
39 Vinyl acetate	43	3.574	3.574	0.000	100	429744	40.0	40.2	
43 2,2-Dichloropropane	79	4.013	4.019	-0.006	93	93312	40.0	37.8	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	295118	40.0	38.8	
45 2-Butanone (MEK)	43	4.038	4.037	0.001	99	351531	40.0	38.5	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	134352	40.0	41.2	
49 Tetrahydrofuran	42	4.263	4.263	0.000	94	477523	80.0	81.1	
50 Chloroform	83	4.300	4.300	0.000	96	474274	40.0	39.9	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	96	433119	40.0	40.4	
52 Cyclohexane	56	4.489	4.489	0.000	95	555450	40.0	40.6	
53 Carbon tetrachloride	117	4.586	4.586	0.000	84	403978	40.0	40.3	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	89	394536	40.0	40.0	
55 Isobutyl alcohol	43	4.720	4.720	0.000	98	1128977	1000.0	1033.8	
56 Benzene	78	4.763	4.763	0.000	98	1039893	40.0	40.0	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	414388	40.0	39.1	
60 n-Heptane	43	5.007	5.007	0.000	94	409042	40.0	39.4	
61 Trichloroethene	95	5.318	5.318	0.000	97	305263	40.0	39.4	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	91	278305	40.0	40.3	
63 Dibromomethane	93	5.604	5.604	0.000	97	170881	40.0	40.2	
65 1,4-Dioxane	88	5.629	5.629	0.000	99	81238	800.0	734.6	
66 Dichlorobromomethane	83	5.751	5.751	0.000	98	352819	40.0	40.1	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	95	215229	40.0	42.0	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	98	403487	40.0	41.2	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	98	583501	40.0	41.8	
70 Toluene	92	6.427	6.427	0.000	93	661531	40.0	40.0	
72 trans-1,3-Dichloropropene	75	6.629	6.628	0.000	96	370784	40.0	41.2	
73 Ethyl methacrylate	69	6.720	6.720	0.000	88	348164	40.0	41.4	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	98	222716	40.0	42.0	
75 Tetrachloroethene	166	6.915	6.915	0.000	95	296884	40.0	39.9	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	98	384920	40.0	40.0	
77 2-Hexanone	43	7.025	7.025	0.000	93	505491	40.0	42.4	
78 Chlorodibromomethane	129	7.141	7.141	0.001	98	273325	40.0	41.6	
79 Ethylene Dibromide	107	7.238	7.238	0.000	98	244337	40.0	40.5	
80 1-Chlorohexane	91	7.677	7.677	0.000	92	371076	40.0	39.2	
81 Chlorobenzene	112	7.689	7.689	0.000	93	703187	40.0	39.7	
82 1,1,1,2-Tetrachloroethane	131	7.769	7.768	0.001	96	256936	40.0	40.2	
83 Ethylbenzene	91	7.799	7.799	0.000	99	1270661	40.0	40.0	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	986483	40.0	39.5	
86 o-Xylene	91	8.275	8.274	0.001	98	1023644	40.0	40.9	
87 Styrene	104	8.287	8.287	0.000	99	718973	40.0	40.2	
88 Bromoform	173	8.451	8.451	0.000	95	192863	40.0	40.3	
89 Isopropylbenzene	105	8.628	8.622	0.006	97	1233559	40.0	40.2	
90 Bromobenzene	156	8.902	8.902	0.000	96	274850	40.0	41.4	
91 1,1,2,2-Tetrachloroethane	83	8.909	8.908	0.001	99	337463	40.0	41.5	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	96	126227	40.0	41.1	
93 trans-1,4-Dichloro-2-buten	89	8.970	8.969	0.001	86	88901	40.0	41.5	
94 N-Propylbenzene	91	9.018	9.018	0.000	99	1481846	40.0	42.2	
95 2-Chlorotoluene	91	9.091	9.091	0.000	98	851126	40.0	41.0	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	93	1001728	40.0	41.8	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	985546	40.0	41.3	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	885748	40.0	41.7	
100 1,2,4-Trimethylbenzene	105	9.549	9.549	0.000	98	1012340	40.0	42.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	1293582	40.0	42.8	
102 1,3-Dichlorobenzene	146	9.805	9.811	-0.006	99	522937	40.0	40.6	
103 4-Isopropyltoluene	119	9.853	9.859	-0.006	97	1088362	40.0	42.5	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	94	519469	40.0	41.3	
106 1,2-Dichlorobenzene	146	10.250	10.256	-0.006	91	483169	40.0	41.6	
105 n-Butylbenzene	91	10.256	10.256	0.000	99	969603	40.0	42.8	
108 1,2-Dibromo-3-Chloropropan	75	11.018	11.018	0.000	94	120896	40.0	43.9	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	94	309788	40.0	44.0	
111 Hexachlorobutadiene	225	12.012	12.012	0.000	97	156300	40.0	43.5	
112 Naphthalene	128	12.066	12.072	-0.006	99	1096139	40.0	44.1	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	95	288214	40.0	43.3	
128 Methyl acetate	43		0.000				ND	ND	
116 Methylcyclohexane	83		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		80.0	78.1	
S 139 Xylenes, Total	106				0		80.0	80.4	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

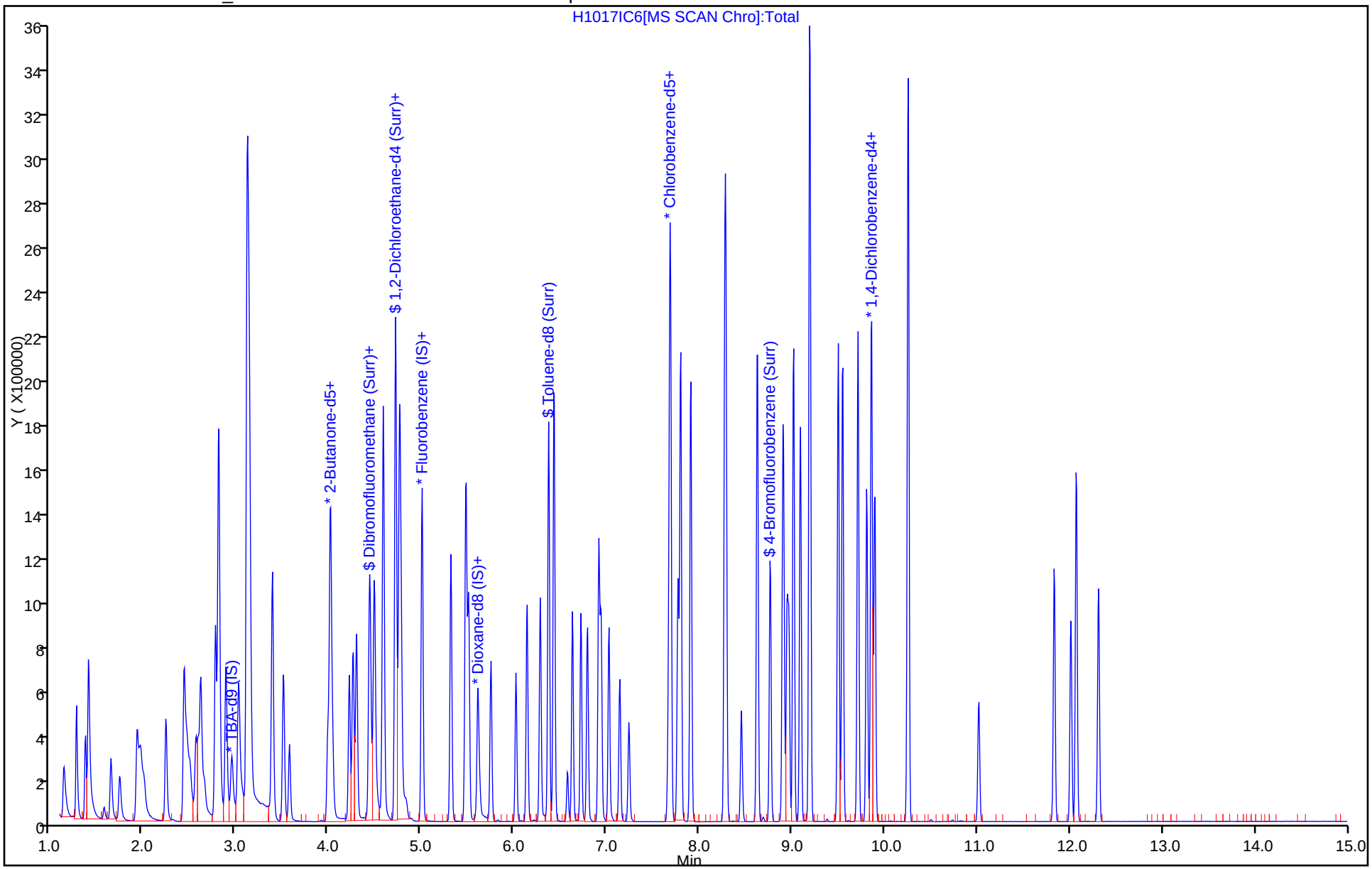
MVGASESIM_00111	Amount Added:	10.00	Units: uL	
MVVAIM_00141	Amount Added:	10.00	Units: uL	
MV8260MMIM_00096	Amount Added:	10.00	Units: uL	
MVODDNEW_00077	Amount Added:	10.00	Units: uL	
MV8260SUIM_00091	Amount Added:	20.00	Units: uL	
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 19-Oct-2016 17:05:14 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC6.D

Injection Date:	17-Oct-2016 22:51:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	IC 6			Worklist Smp#:	9
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	23
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC7.D
Lims ID: IC 7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 17-Oct-2016 23:13:30 ALS Bottle#: 24 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLIC7
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub57

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:05:19 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

First Level Reviewer: gipsonk Date: 18-Oct-2016 11:10:23

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	498126	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	496575	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	244949	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	21694	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	88	175885	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	96	91371	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	384830	60.0	59.6	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	502167	60.0	59.2	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	1456927	60.0	61.1	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	89	423626	60.0	60.6	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	99	516621	60.0	59.7	
14 Chloromethane	50	1.276	1.276	0.000	99	620595	60.0	60.0	
15 Vinyl chloride	62	1.373	1.373	0.000	98	560709	60.0	63.9	
17 Butadiene	54	1.404	1.404	0.000	98	553421	60.0	64.3	
18 Bromomethane	94	1.648	1.648	0.000	99	263204	60.0	61.5	
19 Chloroethane	64	1.739	1.745	-0.006	99	292386	60.0	59.8	
20 Trichlorofluoromethane	101	1.965	1.971	-0.006	97	638704	60.0	62.4	
23 1,1-Dichloroethene	96	2.434	2.434	0.000	93	404546	60.0	59.1	
24 1,1,2-Trichloro-1,2,2-trif	101	2.471	2.471	0.000	97	376224	60.0	65.5	
25 Acetone	43	2.501	2.501	0.000	99	292528	60.0	55.9	
26 Iodomethane	142	2.562	2.562	0.000	98	643905	60.0	60.3	
27 Ethyl bromide	108	2.593	2.593	0.000	99	261732	60.0	60.5	
28 Carbon disulfide	76	2.617	2.617	0.000	100	1274612	60.0	60.2	
29 Isopropyl alcohol	45	2.660	2.660	0.000	100	279251	300.0	281.8	
30 3-Chloro-1-propene	76	2.776	2.776	0.000	97	246042	60.0	61.0	
31 Methylene Chloride	84	2.891	2.885	0.006	98	410993	60.0	60.1	
33 2-Methyl-2-propanol	59	3.032	3.025	0.007	95	1695127	600.0	681.1	
34 Acrylonitrile	53	3.117	3.117	0.000	94	3420761	600.0	624.1	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	95	425951	60.0	57.8	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	97	1207576	60.0	61.2	
37 Hexane	57	3.391	3.391	0.000	92	728547	60.0	64.2	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.507	3.507	0.000	99	863980	60.0	60.5	
39 Vinyl acetate	43	3.574	3.574	0.000	100	693296	60.0	62.4	
43 2,2-Dichloropropane	79	4.013	4.019	-0.006	92	146236	60.0	57.0	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	452875	60.0	57.3	
45 2-Butanone (MEK)	43	4.037	4.037	0.000	99	555509	60.0	54.8	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	210808	60.0	62.2	
49 Tetrahydrofuran	42	4.263	4.263	0.000	94	718983	120.0	117.4	
50 Chloroform	83	4.300	4.300	0.000	96	740978	60.0	60.0	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	96	664183	60.0	59.6	
52 Cyclohexane	56	4.489	4.489	0.000	95	880496	60.0	61.8	
53 Carbon tetrachloride	117	4.586	4.586	0.000	84	622602	60.0	59.7	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	89	609697	60.0	59.4	
55 Isobutyl alcohol	43	4.726	4.720	0.006	98	1837387	1500.0	1549.1	
56 Benzene	78	4.763	4.763	0.000	98	1626034	60.0	60.1	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	652843	60.0	59.3	
60 n-Heptane	43	5.007	5.007	0.000	96	669726	60.0	62.0	
61 Trichloroethene	95	5.318	5.318	0.000	97	475898	60.0	59.0	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	91	440151	60.0	61.2	
63 Dibromomethane	93	5.610	5.604	0.006	97	264957	60.0	60.0	
65 1,4-Dioxane	88	5.629	5.629	0.000	97	135842	1200.0	1183.8	
66 Dichlorobromomethane	83	5.751	5.751	0.000	98	557550	60.0	61.0	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	96	346464	60.0	65.1	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	98	641053	60.0	63.0	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	98	919052	60.0	59.4	
70 Toluene	92	6.433	6.427	0.006	93	1038379	60.0	60.4	
72 trans-1,3-Dichloropropene	75	6.628	6.628	0.000	96	591548	60.0	63.2	
73 Ethyl methacrylate	69	6.720	6.720	0.000	88	557460	60.0	63.7	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	98	348511	60.0	63.2	
75 Tetrachloroethene	166	6.915	6.915	0.000	96	466515	60.0	61.5	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	98	606288	60.0	61.9	
77 2-Hexanone	43	7.025	7.025	0.000	93	795804	60.0	60.2	
78 Chlorodibromomethane	129	7.141	7.141	0.001	98	426797	60.0	63.8	
79 Ethylene Dibromide	107	7.238	7.238	0.000	99	386908	60.0	63.0	
80 1-Chlorohexane	91	7.677	7.677	0.000	93	600555	60.0	62.3	
81 Chlorobenzene	112	7.689	7.689	0.000	93	1095355	60.0	60.8	
82 1,1,1,2-Tetrachloroethane	131	7.768	7.768	0.000	96	400158	60.0	61.5	
83 Ethylbenzene	91	7.799	7.799	0.000	99	1993829	60.0	61.6	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	1542120	60.0	60.7	
86 o-Xylene	91	8.274	8.274	0.000	98	1582871	60.0	62.1	
87 Styrene	104	8.287	8.287	0.000	99	1137337	60.0	62.5	
88 Bromoform	173	8.451	8.451	0.000	95	313259	60.0	64.4	
89 Isopropylbenzene	105	8.628	8.622	0.006	97	1945769	60.0	62.3	
90 Bromobenzene	156	8.902	8.902	0.000	97	434781	60.0	61.7	
91 1,1,2,2-Tetrachloroethane	83	8.908	8.908	0.000	99	536637	60.0	62.0	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	95	199597	60.0	61.1	
93 trans-1,4-Dichloro-2-buten	89	8.969	8.969	0.000	79	143934	60.0	63.1	
94 N-Propylbenzene	91	9.018	9.018	0.000	99	2327223	60.0	62.3	
95 2-Chlorotoluene	91	9.091	9.091	0.000	97	1339849	60.0	60.7	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	92	1584189	60.0	62.2	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	1546364	60.0	60.9	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	1409908	60.0	62.5	
100 1,2,4-Trimethylbenzene	105	9.549	9.549	0.000	98	1588616	60.0	62.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	2032369	60.0	63.2	
102 1,3-Dichlorobenzene	146	9.805	9.811	-0.006	99	824309	60.0	60.1	
103 4-Isopropyltoluene	119	9.853	9.859	-0.006	97	1736861	60.0	63.8	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	93	816295	60.0	61.1	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	91	761849	60.0	61.8	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	1559319	60.0	64.8	
108 1,2-Dibromo-3-Chloropropan	75	11.012	11.018	-0.006	95	190926	60.0	65.2	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	94	502253	60.0	67.0	
111 Hexachlorobutadiene	225	12.012	12.012	0.000	97	251128	60.0	65.8	
112 Naphthalene	128	12.072	12.072	0.000	99	1764011	60.0	66.7	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	95	470740	60.0	66.5	
128 Methyl acetate	43		0.000				ND	ND	
116 Methylcyclohexane	83		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		120.0	115.0	
S 139 Xylenes, Total	106				0		120.0	122.8	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

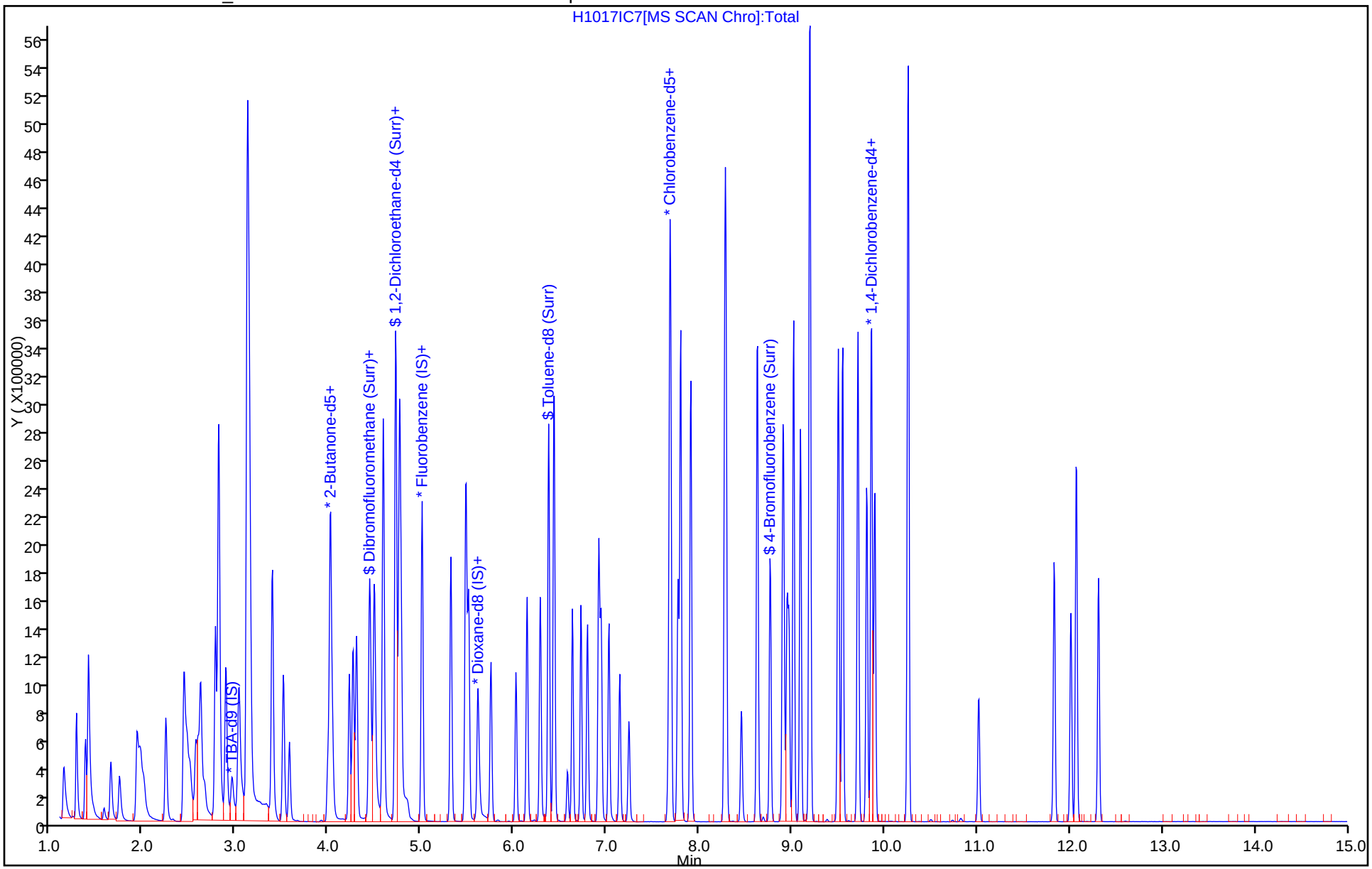
MVGASESIM_00111	Amount Added:	15.00	Units: uL	
MVVAIM_00141	Amount Added:	15.00	Units: uL	
MV8260MMIM_00096	Amount Added:	15.00	Units: uL	
MVODDNEW_00077	Amount Added:	15.00	Units: uL	
MV8260SUIM_00091	Amount Added:	30.00	Units: uL	
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 19-Oct-2016 17:05:22 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC7.D

Injection Date:	17-Oct-2016 23:13:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	IC 7			Worklist Smp#:	10
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	24
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D
Lims ID: IC 8
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 17-Oct-2016 23:36:30 ALS Bottle#: 25 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLIC8
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub57

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:05:27 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

First Level Reviewer: gipsonk Date: 18-Oct-2016 11:12:38

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.958	2.952	0.006	0	507573	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	490237	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	243819	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.592	5.586	0.006	0	22873	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	87	179399	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	95	91482	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	511836	80.0	79.7	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	661730	80.0	78.4	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	1933710	80.0	81.4	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	89	561973	80.0	78.8	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	99	704717	80.0	81.7	
14 Chloromethane	50	1.276	1.276	0.000	99	857730	80.0	83.3	
15 Vinyl chloride	62	1.373	1.373	0.000	98	751662	80.0	86.0	
17 Butadiene	54	1.410	1.404	0.006	97	733376	80.0	85.6	
18 Bromomethane	94	1.648	1.648	0.000	99	325800	80.0	76.4	
19 Chloroethane	64	1.745	1.745	0.000	99	385633	80.0	79.2	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	97	867300	80.0	85.2	
23 1,1-Dichloroethene	96	2.440	2.434	0.006	93	556869	80.0	81.8	
24 1,1,2-Trichloro-1,2,2-trif	101	2.477	2.471	0.006	97	495514	80.0	86.7	
25 Acetone	43	2.501	2.501	0.000	99	404240	80.0	78.2	
26 Iodomethane	142	2.568	2.562	0.006	99	843199	80.0	79.4	
27 Ethyl bromide	108	2.593	2.593	0.000	99	346315	80.0	80.4	
28 Carbon disulfide	76	2.617	2.617	0.000	100	1691018	80.0	80.2	
29 Isopropyl alcohol	45	2.666	2.660	0.006	100	407362	400.0	403.4	
30 3-Chloro-1-propene	76	2.776	2.776	0.000	97	335205	80.0	83.4	
31 Methylene Chloride	84	2.891	2.885	0.006	98	534703	80.0	78.6	
33 2-Methyl-2-propanol	59	3.032	3.025	0.007	95	2272937	800.0	896.3	
34 Acrylonitrile	53	3.123	3.117	0.006	94	4716222	800.0	864.4	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	95	573986	80.0	78.2	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	97	1585067	80.0	80.7	
37 Hexane	57	3.391	3.391	0.000	92	958432	80.0	84.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.513	3.507	0.006	99	1164650	80.0	81.9	
39 Vinyl acetate	43	3.574	3.574	0.000	100	910170	80.0	82.3	
43 2,2-Dichloropropane	79	4.013	4.019	-0.006	94	174034	80.0	68.2	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	610887	80.0	77.6	
45 2-Butanone (MEK)	43	4.044	4.037	0.007	98	736398	80.0	73.6	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	280171	80.0	83.0	
49 Tetrahydrofuran	42	4.263	4.263	0.000	93	974241	160.0	159.8	
50 Chloroform	83	4.300	4.300	0.000	96	984360	80.0	80.1	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	96	860630	80.0	77.6	
52 Cyclohexane	56	4.489	4.489	0.000	95	1159773	80.0	81.8	
53 Carbon tetrachloride	117	4.586	4.586	0.000	82	838820	80.0	80.8	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	90	818114	80.0	80.1	
55 Isobutyl alcohol	43	4.726	4.720	0.006	98	2413050	2000.0	1996.6	
56 Benzene	78	4.763	4.763	0.000	98	2162309	80.0	80.3	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	853196	80.0	77.9	
60 n-Heptane	43	5.007	5.007	0.000	95	869896	80.0	80.9	
61 Trichloroethene	95	5.318	5.318	0.000	97	636529	80.0	79.3	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	91	583590	80.0	81.6	
63 Dibromomethane	93	5.604	5.604	0.000	96	348154	80.0	79.2	
65 1,4-Dioxane	88	5.629	5.629	0.000	98	187946	1600.0	1767.2	
66 Dichlorobromomethane	83	5.751	5.751	0.000	98	731852	80.0	80.5	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	96	450268	80.0	84.9	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	98	859858	80.0	84.8	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	98	1203703	80.0	78.7	
70 Toluene	92	6.433	6.427	0.006	94	1403397	80.0	82.0	
72 trans-1,3-Dichloropropene	75	6.628	6.628	0.000	97	781678	80.0	83.9	
73 Ethyl methacrylate	69	6.720	6.720	0.000	88	733609	80.0	84.3	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	99	458655	80.0	83.6	
75 Tetrachloroethene	166	6.915	6.915	0.000	96	628386	80.0	81.3	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	98	800669	80.0	80.2	
77 2-Hexanone	43	7.025	7.025	0.000	93	1017322	80.0	77.9	
78 Chlorodibromomethane	129	7.141	7.141	0.001	98	572278	80.0	83.9	
79 Ethylene Dibromide	107	7.238	7.238	0.000	98	507492	80.0	81.1	
80 1-Chlorohexane	91	7.683	7.677	0.006	92	767901	80.0	78.1	
81 Chlorobenzene	112	7.689	7.689	0.000	93	1451571	80.0	79.0	
82 1,1,1,2-Tetrachloroethane	131	7.768	7.768	0.000	97	531934	80.0	80.2	
83 Ethylbenzene	91	7.799	7.799	0.000	99	2654165	80.0	80.4	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	2053681	80.0	79.2	
86 o-Xylene	91	8.274	8.274	0.000	96	2111175	80.0	81.2	
87 Styrene	104	8.287	8.287	0.000	97	1521892	80.0	82.0	
88 Bromoform	173	8.457	8.451	0.006	97	414191	80.0	83.4	
89 Isopropylbenzene	105	8.628	8.622	0.006	97	2578431	80.0	81.0	
90 Bromobenzene	156	8.902	8.902	0.000	97	569768	80.0	80.7	
91 1,1,2,2-Tetrachloroethane	83	8.908	8.908	0.000	97	704670	80.0	81.3	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	95	265404	80.0	81.1	
93 trans-1,4-Dichloro-2-buten	89	8.969	8.969	0.000	85	190740	80.0	83.6	
94 N-Propylbenzene	91	9.018	9.018	0.000	99	3075295	80.0	82.2	
95 2-Chlorotoluene	91	9.091	9.091	0.000	97	1769778	80.0	80.1	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	92	2090025	80.0	82.0	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	2032641	80.0	80.0	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	1869544	80.0	82.7	
100 1,2,4-Trimethylbenzene	105	9.549	9.549	0.000	98	2094223	80.0	81.7	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	2701593	80.0	83.9	
102 1,3-Dichlorobenzene	146	9.811	9.811	0.000	99	1090705	80.0	79.5	
103 4-Isopropyltoluene	119	9.860	9.859	0.001	97	2288565	80.0	84.0	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	93	1079006	80.0	80.6	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	92	1000872	80.0	81.0	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	2037765	80.0	84.5	
108 1,2-Dibromo-3-Chloropropan	75	11.012	11.018	-0.006	95	248989	80.0	85.0	
110 1,2,4-Trichlorobenzene	180	11.835	11.829	0.006	94	662990	80.0	88.4	
111 Hexachlorobutadiene	225	12.012	12.012	0.000	97	328385	80.0	85.9	
112 Naphthalene	128	12.073	12.072	0.000	99	2341134	80.0	88.4	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	95	617293	80.0	87.1	
128 Methyl acetate	43		0.000				ND	ND	
116 Methylcyclohexane	83		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		160.0	155.8	
S 139 Xylenes, Total	106				0		160.0	160.4	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

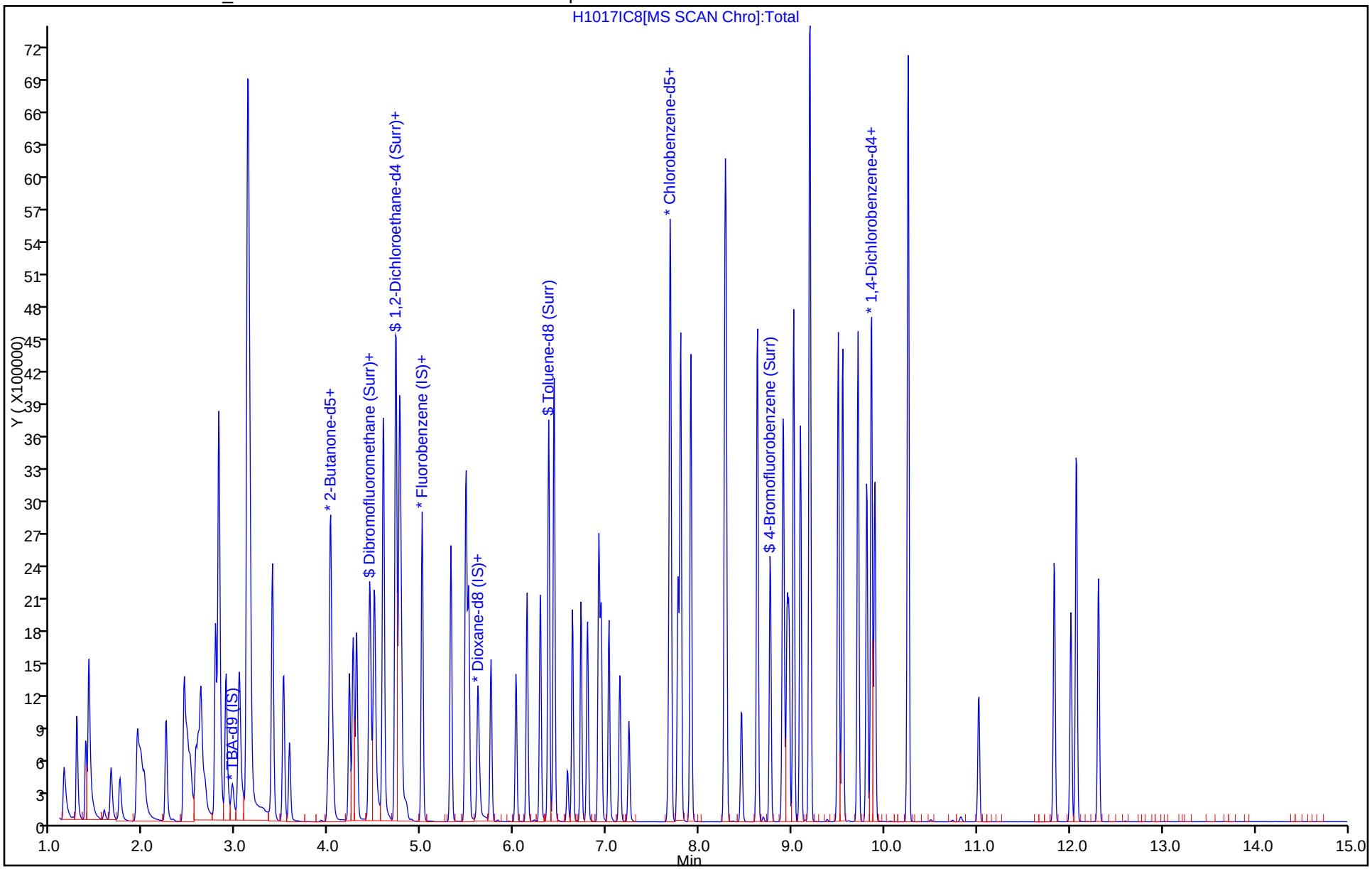
MVGASESIM_00111	Amount Added:	20.00	Units: uL	
MVVAIM_00141	Amount Added:	20.00	Units: uL	
MV8260MMIM_00096	Amount Added:	20.00	Units: uL	
MVODDNEW_00077	Amount Added:	20.00	Units: uL	
MV8260SUIM_00091	Amount Added:	40.00	Units: uL	
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 19-Oct-2016 17:05:28 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Injection Date:	17-Oct-2016 23:36:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	IC 8			Worklist Smp#:	11
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	25
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-132993/14 Calibration Date: 10/18/2016 00:42

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: H1017ICV01.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Lin		0.2939		16.8	20.0	-16.0	20.0
Chloromethane	Ave	0.4224	0.3949	0.1000	18.7	20.0	-6.5	20.0
Vinyl chloride	Ave	0.3583	0.3501		19.5	20.0	-2.3	20.0
Bromomethane	Ave	0.1748	0.1634		18.7	20.0	-6.5	20.0
Chloroethane	Ave	0.1997	0.1896		19.0	20.0	-5.0	20.0
Trichlorofluoromethane	Ave	0.4175	0.3958		19.0	20.0	-5.2	20.0
1,1-Dichloroethene	Ave	0.2794	0.2766		19.8	20.0	-1.0	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.2343	0.2503		21.4	20.0	6.8	20.0
Acetone	Ave	0.5269	0.4870		18.5	20.0	-7.6	20.0
Iodomethane	Ave	0.4357	0.4727		21.7	20.0	8.5	20.0
Carbon disulfide	Ave	0.8642	0.8758		20.3	20.0	1.3	20.0
3-Chloro-1-propene	Ave	0.1648	0.1753		21.3	20.0	6.4	20.0
Methylene Chloride	Ave	0.2791	0.2780		19.9	20.0	-0.4	20.0
tert-Butyl alcohol (TBA)	Ave	0.999	1.089		218	200	9.0	20.0
Acrylonitrile	Ave	0.2238	0.2333		209	200	4.3	20.0
trans-1,2-Dichloroethene	Ave	0.3010	0.3088		20.5	20.0	2.6	20.0
Methyl tert-butyl ether	Ave	0.8051	0.8011		19.9	20.0	-0.5	20.0
Hexane	Ave	0.4633	0.4806		20.7	20.0	3.7	20.0
1,1-Dichloroethane	Ave	0.5834	0.5920	0.1000	20.3	20.0	1.5	20.0
Vinyl acetate	Ave	0.4537	0.4996		22.0	20.0	10.1	20.0
2,2-Dichloropropane	Ave	0.1047	0.0978		18.7	20.0	-6.6	20.0
cis-1,2-Dichloroethene	Ave	0.3229	0.3221		19.9	20.0	-0.3	20.0
2-Butanone (MEK)	Ave	1.020	0.9518		18.7	20.0	-6.7	20.0
Bromochloromethane	Ave	0.1384	0.1478		21.4	20.0	6.8	20.0
Chloroform	Ave	0.5040	0.5226		20.7	20.0	3.7	20.0
1,1,1-Trichloroethane	Ave	0.4549	0.4593		20.2	20.0	1.0	20.0
Cyclohexane	Ave	0.5813	0.6042		20.8	20.0	3.9	20.0
1,1-Dichloropropene	Ave	0.4190	0.4230		20.2	20.0	0.9	20.0
Carbon tetrachloride	Ave	0.4258	0.4445		20.9	20.0	4.4	20.0
Isobutyl alcohol	Ave	0.4762	0.5085		534	500	6.8	20.0
Benzene	Ave	1.105	1.120		20.3	20.0	1.4	20.0
1,2-Dichloroethane	Ave	0.4493	0.4634		20.6	20.0	3.1	20.0
Trichloroethene	Ave	0.3293	0.3393		20.6	20.0	3.1	20.0
1,2-Dichloropropane	Ave	0.2934	0.3121		21.3	20.0	6.4	20.0
Dibromomethane	Ave	0.1804	0.1839		20.4	20.0	2.0	20.0
1,4-Dioxane	Qua2		1.170		384	400	-3.9	20.0
Bromodichloromethane	Ave	0.3731	0.3818		20.5	20.0	2.3	20.0
cis-1,3-Dichloropropene	Ave	0.4156	0.4452		21.4	20.0	7.1	20.0
4-Methyl-2-pentanone (MIBK)	Ave	1.559	1.560		20.0	20.0	0.0	20.0
Toluene	Ave	0.7022	0.7237		20.6	20.0	3.1	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-132993/14 Calibration Date: 10/18/2016 00:42

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: H1017ICV01.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
trans-1,3-Dichloropropene	Ave	0.3822	0.3867		20.2	20.0	1.2	20.0
Ethyl methacrylate	Ave	0.3570	0.3811		21.3	20.0	6.7	20.0
1,1,2-Trichloroethane	Ave	0.2251	0.2460		21.9	20.0	9.3	20.0
Tetrachloroethene	Ave	0.4310	0.4354		20.2	20.0	1.0	20.0
1,3-Dichloropropane	Ave	0.5566	0.5611		20.2	20.0	0.8	20.0
2-Hexanone	Ave	1.332	1.340		20.1	20.0	0.6	20.0
Chlorodibromomethane	Ave	0.3804	0.3928		20.7	20.0	3.3	20.0
1,2-Dibromoethane (EDB)	Ave	0.3490	0.3661		21.0	20.0	4.9	20.0
1-Chlorohexane	Ave	0.5481	0.5368		19.6	20.0	-2.1	20.0
Chlorobenzene	Ave	1.024	1.017	0.3000	19.9	20.0	-0.7	20.0
1,1,1,2-Tetrachloroethane	Ave	0.3699	0.3671		19.8	20.0	-0.8	20.0
Ethylbenzene	Ave	1.841	1.850		20.1	20.0	0.5	20.0
m-Xylene & p-Xylene	Ave	1.445	1.454		20.1	20.0	0.6	20.0
o-Xylene	Ave	1.449	1.463		20.2	20.0	0.9	20.0
Styrene	Ave	1.035	1.060		20.5	20.0	2.5	20.0
Bromoform	Ave	0.2767	0.2963	0.1000	21.4	20.0	7.1	20.0
Isopropylbenzene	Ave	1.775	1.817		20.5	20.0	2.4	20.0
Bromobenzene	Ave	0.7718	0.7868		20.4	20.0	1.9	20.0
1,1,2,2-Tetrachloroethane	Ave	0.9469	0.9683	0.3000	20.5	20.0	2.3	20.0
1,2,3-Trichloropropane	Ave	0.3576	0.3779		21.1	20.0	5.7	20.0
trans-1,4-Dichloro-2-butene	Ave	0.2495	0.2501		20.0	20.0	0.2	20.0
N-Propylbenzene	Ave	4.089	4.262		20.8	20.0	4.2	20.0
2-Chlorotoluene	Ave	2.415	2.473		20.5	20.0	2.4	20.0
1,3,5-Trimethylbenzene	Ave	2.786	2.859		20.5	20.0	2.6	20.0
4-Chlorotoluene	Ave	2.779	2.836		20.4	20.0	2.0	20.0
tert-Butylbenzene	Ave	2.470	2.564		20.8	20.0	3.8	20.0
1,2,4-Trimethylbenzene	Ave	2.802	2.837		20.3	20.0	1.3	20.0
sec-Butylbenzene	Ave	3.520	3.670		20.9	20.0	4.3	20.0
1,3-Dichlorobenzene	Ave	1.500	1.479		19.7	20.0	-1.4	20.0
p-Isopropyltoluene	Ave	2.979	3.105		20.8	20.0	4.2	20.0
1,4-Dichlorobenzene	Ave	1.463	1.512		20.7	20.0	3.4	20.0
1,2-Dichlorobenzene	Ave	1.350	1.368		20.3	20.0	1.3	20.0
n-Butylbenzene	Ave	2.636	2.721		20.6	20.0	3.2	20.0
1,2-Dibromo-3-Chloropropane	Ave	0.3203	0.3482		21.7	20.0	8.7	20.0
1,2,4-Trichlorobenzene	Ave	0.8200	0.8345		20.4	20.0	1.8	20.0
Hexachlorobutadiene	Ave	0.4179	0.4244		20.3	20.0	1.6	20.0
Naphthalene	Ave	2.895	2.965		20.5	20.0	2.4	20.0
1,2,3-Trichlorobenzene	Ave	0.7746	0.7683		19.8	20.0	-0.8	20.0
Dibromofluoromethane (Surr)	Ave	0.2635	0.2417		18.3	20.0	-8.3	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.3462	0.3359		19.4	20.0	-3.0	20.0
Toluene-d8 (Surr)	Ave	0.9741	0.8774		18.0	20.0	-9.9	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-132993/14 Calibration Date: 10/18/2016 00:42

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: H1017ICV01.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Bromofluorobenzene (Surr)	Ave	0.3976	0.3695		18.6	20.0	-7.1	20.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017ICV01.D
Lims ID: ICV HSL
Client ID:
Sample Type: ICV
Inject. Date: 18-Oct-2016 00:42:30 ALS Bottle#: 28 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSLICV
Operator ID: KG Instrument ID: HP12
Sublist:

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:05:33 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	451805	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	471983	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	236888	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	16221	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	88	174433	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	97	89192	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	114504	20.0	18.3	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	159160	20.0	19.4	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	415675	20.0	18.0	
$ 12 4-Bromofluorobenzene (Surr	174	8.762	8.768	-0.006	87	128921	20.0	18.6	
13 Dichlorodifluoromethane	85	1.136	1.142	-0.006	98	139220	20.0	16.8	
14 Chloromethane	50	1.276	1.276	0.000	99	187112	20.0	18.7	
15 Vinyl chloride	62	1.373	1.373	0.000	98	165859	20.0	19.5	
17 Butadiene	54	1.404	1.404	0.000	97	155792	20.0	18.7	
18 Bromomethane	94	1.648	1.648	0.000	98	77399	20.0	18.7	
19 Chloroethane	64	1.745	1.745	0.000	99	89826	20.0	19.0	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	97	187497	20.0	19.0	
23 1,1-Dichloroethene	96	2.434	2.434	0.000	93	131033	20.0	19.8	
24 1,1,2-Trichloro-1,2,2-trif	101	2.471	2.471	0.000	97	118578	20.0	21.4	
25 Acetone	43	2.501	2.501	0.000	99	91949	20.0	18.5	
26 Iodomethane	142	2.562	2.562	0.000	98	223937	20.0	21.7	
27 Ethyl bromide	108	2.593	2.593	0.000	99	97167	20.0	23.2	
28 Carbon disulfide	76	2.617	2.617	0.000	100	414933	20.0	20.3	
29 Isopropyl alcohol	45	2.666	2.660	0.006	100	87400	100.0	97.2	
30 3-Chloro-1-propene	76	2.776	2.776	0.000	97	83074	20.0	21.3	
31 Methylene Chloride	84	2.885	2.885	0.000	97	131699	20.0	19.9	
33 2-Methyl-2-propanol	59	3.032	3.025	0.007	95	492154	200.0	218.0	
34 Acrylonitrile	53	3.117	3.117	0.000	94	1105528	200.0	208.6	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	95	146323	20.0	20.5	
36 Methyl tert-butyl ether	73	3.148	3.147	0.001	97	379534	20.0	19.9	
37 Hexane	57	3.391	3.391	0.000	92	227680	20.0	20.7	
38 1,1-Dichloroethane	63	3.507	3.507	0.000	100	280496	20.0	20.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
39 Vinyl acetate	43	3.574	3.574	0.000	100	236697	20.0	22.0	
43 2,2-Dichloropropane	79	4.013	4.019	-0.006	92	46317	20.0	18.7	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	152611	20.0	19.9	
45 2-Butanone (MEK)	43	4.038	4.037	0.001	99	179696	20.0	18.7	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	70038	20.0	21.4	
49 Tetrahydrofuran	42	4.263	4.263	0.000	94	228143	40.0	38.5	
50 Chloroform	83	4.300	4.300	0.000	96	247588	20.0	20.7	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	96	217626	20.0	20.2	
52 Cyclohexane	56	4.489	4.489	0.000	95	286266	20.0	20.8	
53 Carbon tetrachloride	117	4.586	4.586	0.000	94	210603	20.0	20.9	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	92	200397	20.0	20.2	
55 Isobutyl alcohol	43	4.720	4.720	0.000	97	574368	500.0	533.9	
56 Benzene	78	4.763	4.763	0.000	98	530651	20.0	20.3	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	219550	20.0	20.6	
60 n-Heptane	43	5.007	5.007	0.000	95	202829	20.0	19.4	
61 Trichloroethene	95	5.318	5.318	0.000	97	160772	20.0	20.6	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	91	147884	20.0	21.3	
63 Dibromomethane	93	5.604	5.604	0.000	96	87148	20.0	20.4	
65 1,4-Dioxane	88	5.635	5.629	0.006	99	37968	400.0	384.3	
66 Dichlorobromomethane	83	5.751	5.751	0.000	98	180873	20.0	20.5	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	96	108401	20.0	21.0	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	97	210941	20.0	21.4	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	98	294517	20.0	20.0	
70 Toluene	92	6.433	6.427	0.006	94	342882	20.0	20.6	
72 trans-1,3-Dichloropropene	75	6.629	6.628	0.001	96	183201	20.0	20.2	
73 Ethyl methacrylate	69	6.720	6.720	0.000	87	180559	20.0	21.3	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	97	116548	20.0	21.9	
75 Tetrachloroethene	166	6.915	6.915	0.000	96	151904	20.0	20.2	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	98	195749	20.0	20.2	
77 2-Hexanone	43	7.025	7.025	0.000	93	252904	20.0	20.1	
78 Chlorodibromomethane	129	7.141	7.141	0.001	98	137037	20.0	20.7	
79 Ethylene Dibromide	107	7.238	7.238	0.000	99	127733	20.0	21.0	
80 1-Chlorohexane	91	7.677	7.677	0.000	92	187267	20.0	19.6	
81 Chlorobenzene	112	7.689	7.689	0.000	92	354962	20.0	19.9	
82 1,1,1,2-Tetrachloroethane	131	7.769	7.768	0.001	95	128051	20.0	19.8	
83 Ethylbenzene	91	7.799	7.799	0.000	99	645497	20.0	20.1	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	507117	20.0	20.1	
86 o-Xylene	91	8.275	8.274	0.001	97	510300	20.0	20.2	
87 Styrene	104	8.287	8.287	0.000	99	369852	20.0	20.5	
88 Bromoform	173	8.457	8.451	0.006	96	103351	20.0	21.4	
89 Isopropylbenzene	105	8.622	8.622	0.000	97	633918	20.0	20.5	
90 Bromobenzene	156	8.902	8.902	0.000	96	140352	20.0	20.4	
91 1,1,2,2-Tetrachloroethane	83	8.909	8.908	0.001	99	172725	20.0	20.5	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	96	67405	20.0	21.1	
93 trans-1,4-Dichloro-2-buten	89	8.970	8.969	0.001	73	44606	20.0	20.0	
94 N-Propylbenzene	91	9.018	9.018	0.000	98	760208	20.0	20.8	
95 2-Chlorotoluene	91	9.091	9.091	0.000	97	441216	20.0	20.5	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	92	510015	20.0	20.5	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	505814	20.0	20.4	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	457451	20.0	20.8	
100 1,2,4-Trimethylbenzene	105	9.543	9.549	-0.006	98	506148	20.0	20.3	
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	654697	20.0	20.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
102 1,3-Dichlorobenzene	146	9.805	9.811	-0.006	99	263757	20.0	19.7	
103 4-Isopropyltoluene	119	9.854	9.859	-0.005	99	553957	20.0	20.8	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	94	269707	20.0	20.7	
106 1,2-Dichlorobenzene	146	10.250	10.256	-0.006	92	243968	20.0	20.3	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	485382	20.0	20.6	
108 1,2-Dibromo-3-Chloropropan	75	11.012	11.018	-0.006	93	62121	20.0	21.7	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	94	148869	20.0	20.4	
111 Hexachlorobutadiene	225	12.012	12.012	0.000	96	75711	20.0	20.3	
112 Naphthalene	128	12.066	12.072	-0.006	99	528821	20.0	20.5	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	94	137056	20.0	19.8	
128 Methyl acetate	43		0.000				ND	ND	
116 Methylcyclohexane	83		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		40.0	40.5	
S 139 Xylenes, Total	106				0		40.0	40.3	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

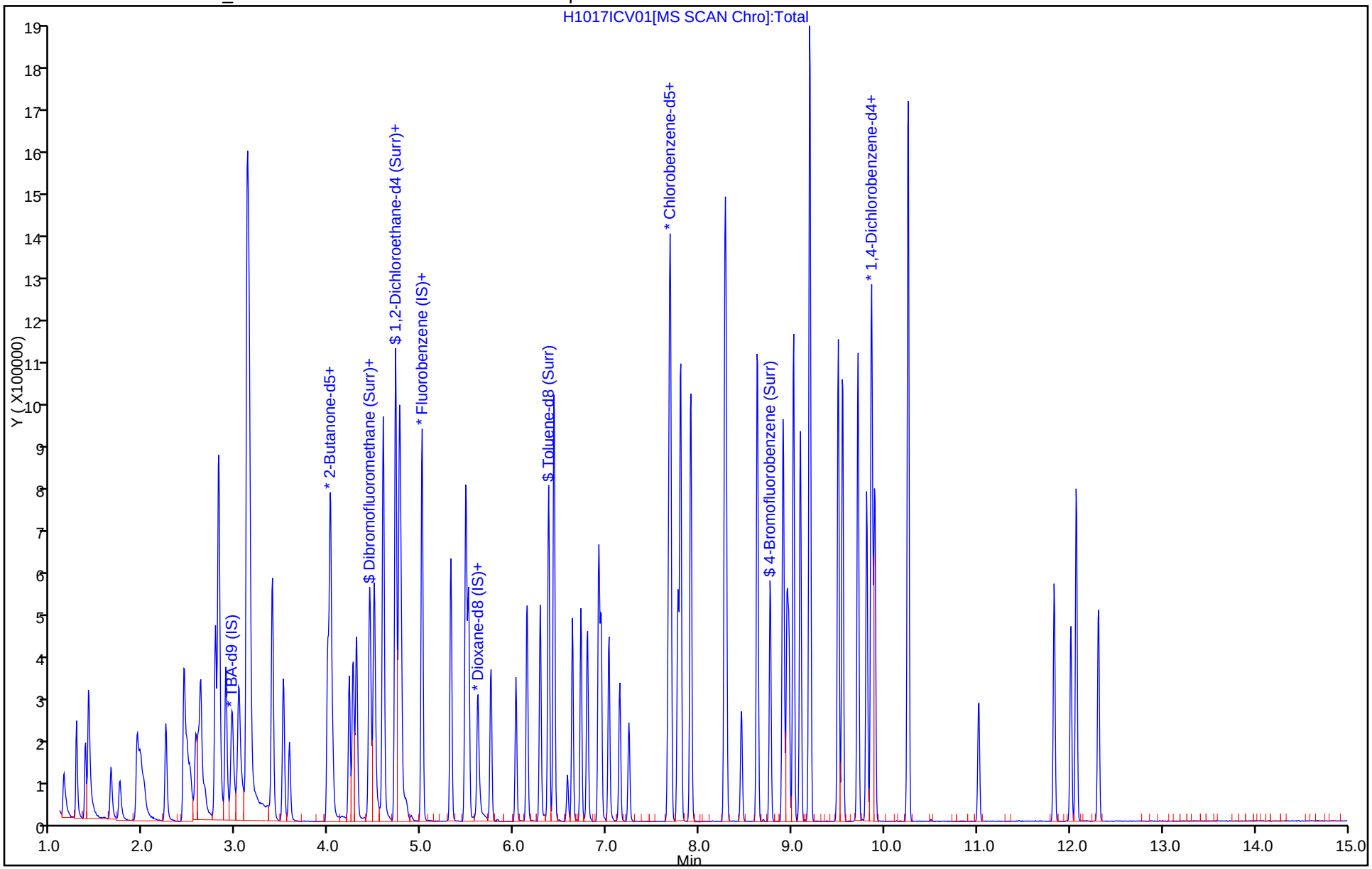
mv8260suim_00087	Amount Added:	5.00	Units: uL		
MVGASESIM_00111	Amount Added:	5.00	Units: uL		
MV8260MMIM_00091	Amount Added:	5.00	Units: uL		
mvoddnew_00081	Amount Added:	5.00	Units: uL		
MVVAIM_00141	Amount Added:	5.00	Units: uL		
MVISIM_00054	Amount Added:	5.00	Units: uL	Run Reagent	

Report Date: 19-Oct-2016 17:05:43 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017ICV01.D

Injection Date:	18-Oct-2016 00:42:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	ICV HSL			Worklist Smp#:	14
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	28
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-134567/4 Calibration Date: 10/26/2016 11:16

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: HSL102601.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Lin		0.2882		16.5	20.0	-17.6	20.0
Chloromethane	Ave	0.4224	0.4123	0.1000	19.5	20.0	-2.4	20.0
Vinyl chloride	Ave	0.3583	0.3501		19.5	20.0	-2.3	20.0
Bromomethane	Ave	0.1748	0.1567		17.9	20.0	-10.3	20.0
Chloroethane	Ave	0.1997	0.1895		19.0	20.0	-5.1	20.0
Trichlorofluoromethane	Ave	0.4175	0.4154		19.9	20.0	-0.5	20.0
1,1-Dichloroethene	Ave	0.2794	0.2537		18.2	20.0	-9.2	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.2343	0.2219		18.9	20.0	-5.3	20.0
Acetone	Ave	0.5269	0.4711		17.9	20.0	-10.6	20.0
Iodomethane	Ave	0.4357	0.4009		18.4	20.0	-8.0	20.0
Carbon disulfide	Ave	0.8642	0.7685		17.8	20.0	-11.1	20.0
3-Chloro-1-propene	Ave	0.1648	0.1639		19.9	20.0	-0.6	20.0
Methylene Chloride	Ave	0.2791	0.2701		19.4	20.0	-3.2	20.0
tert-Butyl alcohol (TBA)	Ave	0.999	0.8232		165	200	-17.6	20.0
Acrylonitrile	Ave	0.2238	0.2459		220	200	9.9	20.0
trans-1,2-Dichloroethene	Ave	0.3010	0.2795		18.6	20.0	-7.2	20.0
Methyl tert-butyl ether	Ave	0.8051	0.7915		19.7	20.0	-1.7	20.0
Hexane	Ave	0.4633	0.4632		20.0	20.0	-0.0	20.0
1,1-Dichloroethane	Ave	0.5834	0.5761	0.1000	19.8	20.0	-1.2	20.0
Vinyl acetate	Ave	0.4537	0.6475		28.5	20.0	42.7*	20.0
2,2-Dichloropropane	Ave	0.1047	0.0976		18.6	20.0	-6.8	20.0
cis-1,2-Dichloroethene	Ave	0.3229	0.3053		18.9	20.0	-5.5	20.0
2-Butanone (MEK)	Ave	1.020	0.9302		18.2	20.0	-8.8	20.0
Bromochloromethane	Ave	0.1384	0.1425		20.6	20.0	3.0	20.0
Chloroform	Ave	0.5040	0.5003		19.9	20.0	-0.7	20.0
1,1,1-Trichloroethane	Ave	0.4549	0.4136		18.2	20.0	-9.1	20.0
Cyclohexane	Ave	0.5813	0.5228		18.0	20.0	-10.1	20.0
1,1-Dichloropropene	Ave	0.4190	0.3873		18.5	20.0	-7.6	20.0
Carbon tetrachloride	Ave	0.4258	0.3893		18.3	20.0	-8.6	20.0
Isobutyl alcohol	Ave	0.4762	0.4775		501	500	0.3	20.0
Benzene	Ave	1.105	1.070		19.4	20.0	-3.2	20.0
1,2-Dichloroethane	Ave	0.4493	0.4565		20.3	20.0	1.6	20.0
Trichloroethene	Ave	0.3293	0.2988		18.1	20.0	-9.3	20.0
1,2-Dichloropropane	Ave	0.2934	0.2950		20.1	20.0	0.5	20.0
Dibromomethane	Ave	0.1804	0.1832		20.3	20.0	1.6	20.0
1,4-Dioxane	Qua2		1.147		376	400	-5.9	20.0
Bromodichloromethane	Ave	0.3731	0.3644		19.5	20.0	-2.3	20.0
cis-1,3-Dichloropropene	Ave	0.4156	0.4196		20.2	20.0	0.9	20.0
4-Methyl-2-pentanone (MIBK)	Ave	1.559	1.496		19.2	20.0	-4.0	20.0
Toluene	Ave	0.7022	0.6809		19.4	20.0	-3.0	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-134567/4 Calibration Date: 10/26/2016 11:16

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: HSL102601.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
trans-1,3-Dichloropropene	Ave	0.3822	0.3888		20.3	20.0	1.7	20.0
Ethyl methacrylate	Ave	0.3570	0.3659		20.5	20.0	2.5	20.0
1,1,2-Trichloroethane	Ave	0.2251	0.2313		20.6	20.0	2.8	20.0
Tetrachloroethene	Ave	0.4310	0.4061		18.8	20.0	-5.8	20.0
1,3-Dichloropropane	Ave	0.5566	0.5491		19.7	20.0	-1.3	20.0
2-Hexanone	Ave	1.332	1.290		19.4	20.0	-3.2	20.0
Chlorodibromomethane	Ave	0.3804	0.3848		20.2	20.0	1.2	20.0
1,2-Dibromoethane (EDB)	Ave	0.3490	0.3493		20.0	20.0	0.0	20.0
1-Chlorohexane	Ave	0.5481	0.4651		17.0	20.0	-15.2	20.0
Chlorobenzene	Ave	1.024	0.9801	0.3000	19.1	20.0	-4.3	20.0
1,1,1,2-Tetrachloroethane	Ave	0.3699	0.3511		19.0	20.0	-5.1	20.0
Ethylbenzene	Ave	1.841	1.758		19.1	20.0	-4.5	20.0
m-Xylene & p-Xylene	Ave	1.445	1.375		19.0	20.0	-4.8	20.0
o-Xylene	Ave	1.449	1.409		19.4	20.0	-2.8	20.0
Styrene	Ave	1.035	0.996		19.3	20.0	-3.7	20.0
Bromoform	Ave	0.2767	0.2719	0.1000	19.7	20.0	-1.7	20.0
Isopropylbenzene	Ave	1.775	1.690		19.0	20.0	-4.8	20.0
Bromobenzene	Ave	0.7718	0.7705		20.0	20.0	-0.2	20.0
1,1,2,2-Tetrachloroethane	Ave	0.9469	1.036	0.3000	21.9	20.0	9.4	20.0
1,2,3-Trichloropropane	Ave	0.3576	0.3663		20.5	20.0	2.4	20.0
trans-1,4-Dichloro-2-butene	Ave	0.2495	0.2498		20.0	20.0	0.1	20.0
N-Propylbenzene	Ave	4.089	4.075		19.9	20.0	-0.3	20.0
2-Chlorotoluene	Ave	2.415	2.390		19.8	20.0	-1.0	20.0
1,3,5-Trimethylbenzene	Ave	2.786	2.763		19.8	20.0	-0.8	20.0
4-Chlorotoluene	Ave	2.779	2.790		20.1	20.0	0.4	20.0
tert-Butylbenzene	Ave	2.470	2.424		19.6	20.0	-1.9	20.0
1,2,4-Trimethylbenzene	Ave	2.802	2.817		20.1	20.0	0.5	20.0
sec-Butylbenzene	Ave	3.520	3.489		19.8	20.0	-0.9	20.0
1,3-Dichlorobenzene	Ave	1.500	1.457		19.4	20.0	-2.9	20.0
p-Isopropyltoluene	Ave	2.979	2.990		20.1	20.0	0.4	20.0
1,4-Dichlorobenzene	Ave	1.463	1.467		20.1	20.0	0.3	20.0
1,2-Dichlorobenzene	Ave	1.350	1.361		20.2	20.0	0.8	20.0
n-Butylbenzene	Ave	2.636	2.725		20.7	20.0	3.4	20.0
1,2-Dibromo-3-Chloropropane	Ave	0.3203	0.3367		21.0	20.0	5.1	20.0
1,2,4-Trichlorobenzene	Ave	0.8200	0.8571		20.9	20.0	4.5	20.0
Hexachlorobutadiene	Ave	0.4179	0.4340		20.8	20.0	3.8	20.0
Naphthalene	Ave	2.895	2.952		20.4	20.0	2.0	20.0
1,2,3-Trichlorobenzene	Ave	0.7746	0.7889		20.4	20.0	1.8	20.0
Dibromofluoromethane (Surr)	Ave	0.2635	0.2679		20.3	20.0	1.7	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.3462	0.3707		21.4	20.0	7.1	20.0
Toluene-d8 (Surr)	Ave	0.9741	0.9538		19.6	20.0	-2.1	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-134567/4 Calibration Date: 10/26/2016 11:16

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: HSL102601.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Bromofluorobenzene (Surr)	Ave	0.3976	0.4053		20.4	20.0	1.9	20.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\HSL102601.D
Lims ID: CCV HSL
Client ID:
Sample Type: CCV
Inject. Date: 26-Oct-2016 11:16:30 ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSL
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub56

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 09:53:34 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK015

First Level Reviewer: gipsonk Date: 26-Oct-2016 12:04:02

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.958	2.958	0.000	0	499447	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	486629	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	230856	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	21235	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	89	170926	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	97	85448	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	123710	20.0	20.3	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	171137	20.0	21.4	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	440385	20.0	19.6	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	87	138552	20.0	20.4	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	99	133051	20.0	16.5	
14 Chloromethane	50	1.276	1.276	0.000	99	190362	20.0	19.5	
15 Vinyl chloride	62	1.373	1.373	0.000	98	161629	20.0	19.5	
17 Butadiene	54	1.410	1.410	0.000	98	157726	20.0	19.4	
18 Bromomethane	94	1.648	1.648	0.000	99	72371	20.0	17.9	
19 Chloroethane	64	1.745	1.745	0.000	99	87499	20.0	19.0	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	97	191783	20.0	19.9	
23 1,1-Dichloroethene	96	2.440	2.440	0.000	93	117124	20.0	18.2	
24 1,1,2-Trichloro-1,2,2-trif	101	2.465	2.465	0.000	97	102449	20.0	18.9	
25 Acetone	43	2.501	2.501	0.000	99	91690	20.0	17.9	
26 Iodomethane	142	2.568	2.568	0.000	98	185117	20.0	18.4	
27 Ethyl bromide	108	2.593	2.593	0.000	100	77315	20.0	18.9	
28 Carbon disulfide	76	2.617	2.617	0.000	100	354804	20.0	17.8	
29 Isopropyl alcohol	45	2.666	2.666	0.000	99	90685	100.0	91.3	
30 3-Chloro-1-propene	76	2.775	2.775	0.000	97	75656	20.0	19.9	
31 Methylene Chloride	84	2.891	2.891	0.000	96	124726	20.0	19.4	
33 2-Methyl-2-propanol	59	3.031	3.031	0.000	96	411137	200.0	164.8	
34 Acrylonitrile	53	3.117	3.117	0.000	94	1135495	200.0	219.8	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	94	129051	20.0	18.6	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	96	365444	20.0	19.7	
37 Hexane	57	3.391	3.391	0.000	93	213851	20.0	20.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.507	3.507	0.000	99	266002	20.0	19.8	
39 Vinyl acetate	43	3.574	3.574	0.000	100	298970	20.0	28.5	
43 2,2-Dichloropropane	79	4.013	4.013	0.000	90	45045	20.0	18.6	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	140978	20.0	18.9	
45 2-Butanone (MEK)	43	4.043	4.043	0.000	98	181072	20.0	18.2	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	65807	20.0	20.6	
49 Tetrahydrofuran	42	4.263	4.263	0.000	92	235308	40.0	40.8	
50 Chloroform	83	4.300	4.300	0.000	95	231013	20.0	19.9	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	96	190944	20.0	18.2	
52 Cyclohexane	56	4.489	4.489	0.000	94	241362	20.0	18.0	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	88	178829	20.0	18.5	
53 Carbon tetrachloride	117	4.586	4.586	0.000	83	179755	20.0	18.3	
55 Isobutyl alcohol	43	4.720	4.720	0.000	97	596251	500.0	501.4	
56 Benzene	78	4.763	4.763	0.000	97	493850	20.0	19.4	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	210778	20.0	20.3	
60 n-Heptane	43	5.007	5.007	0.000	95	213770	20.0	21.0	
61 Trichloroethene	95	5.318	5.318	0.000	95	137936	20.0	18.1	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	92	136196	20.0	20.1	
63 Dibromomethane	93	5.610	5.610	0.000	96	84603	20.0	20.3	
65 1,4-Dioxane	88	5.629	5.629	0.000	98	48708	400.0	376.2	
66 Dichlorobromomethane	83	5.750	5.750	0.000	97	168258	20.0	19.5	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	95	104822	20.0	20.9	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	97	193727	20.0	20.2	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	98	291203	20.0	19.2	
70 Toluene	92	6.433	6.433	0.000	93	314391	20.0	19.4	
72 trans-1,3-Dichloropropene	75	6.628	6.628	0.000	95	179498	20.0	20.3	
73 Ethyl methacrylate	69	6.720	6.720	0.000	88	168924	20.0	20.5	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	98	106794	20.0	20.6	
75 Tetrachloroethene	166	6.915	6.915	0.000	95	138838	20.0	18.8	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	97	187705	20.0	19.7	
77 2-Hexanone	43	7.025	7.025	0.000	92	251035	20.0	19.4	
78 Chlorodibromomethane	129	7.140	7.140	0.000	98	131537	20.0	20.2	
79 Ethylene Dibromide	107	7.238	7.238	0.000	98	119394	20.0	20.0	
80 1-Chlorohexane	91	7.677	7.677	0.000	92	158977	20.0	17.0	
81 Chlorobenzene	112	7.689	7.689	0.000	92	335037	20.0	19.1	
82 1,1,1,2-Tetrachloroethane	131	7.768	7.768	0.000	96	120023	20.0	19.0	
83 Ethylbenzene	91	7.799	7.799	0.000	99	600831	20.0	19.1	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	470193	20.0	19.0	
86 o-Xylene	91	8.274	8.274	0.000	96	481657	20.0	19.4	
87 Styrene	104	8.287	8.287	0.000	97	340593	20.0	19.3	
88 Bromoform	173	8.451	8.451	0.000	94	92945	20.0	19.7	
89 Isopropylbenzene	105	8.628	8.628	0.000	97	577882	20.0	19.0	
90 Bromobenzene	156	8.902	8.902	0.000	96	131682	20.0	20.0	
91 1,1,2,2-Tetrachloroethane	83	8.908	8.908	0.000	98	177014	20.0	21.9	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	95	62604	20.0	20.5	
93 trans-1,4-Dichloro-2-buten	89	8.969	8.969	0.000	74	42696	20.0	20.0	
94 N-Propylbenzene	91	9.018	9.018	0.000	98	696360	20.0	19.9	
95 2-Chlorotoluene	91	9.091	9.091	0.000	98	408410	20.0	19.8	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	92	472151	20.0	19.8	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	476737	20.0	20.1	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	414244	20.0	19.6	
100 1,2,4-Trimethylbenzene	105	9.549	9.549	0.000	98	481357	20.0	20.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	596193	20.0	19.8	
102 1,3-Dichlorobenzene	146	9.805	9.805	0.000	98	248930	20.0	19.4	
103 4-Isopropyltoluene	119	9.859	9.859	0.000	97	510914	20.0	20.1	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	93	250754	20.0	20.1	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	91	232604	20.0	20.2	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	465724	20.0	20.7	
108 1,2-Dibromo-3-Chloropropan	75	11.012	11.012	0.000	93	57548	20.0	21.0	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	94	146476	20.0	20.9	
111 Hexachlorobutadiene	225	12.011	12.011	0.000	96	74172	20.0	20.8	
112 Naphthalene	128	12.072	12.072	0.000	99	504443	20.0	20.4	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	95	134817	20.0	20.4	
116 Methylcyclohexane	83		0.000				ND	ND	
128 Methyl acetate	43		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		40.0	37.5	
S 139 Xylenes, Total	106				0		40.0	38.5	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

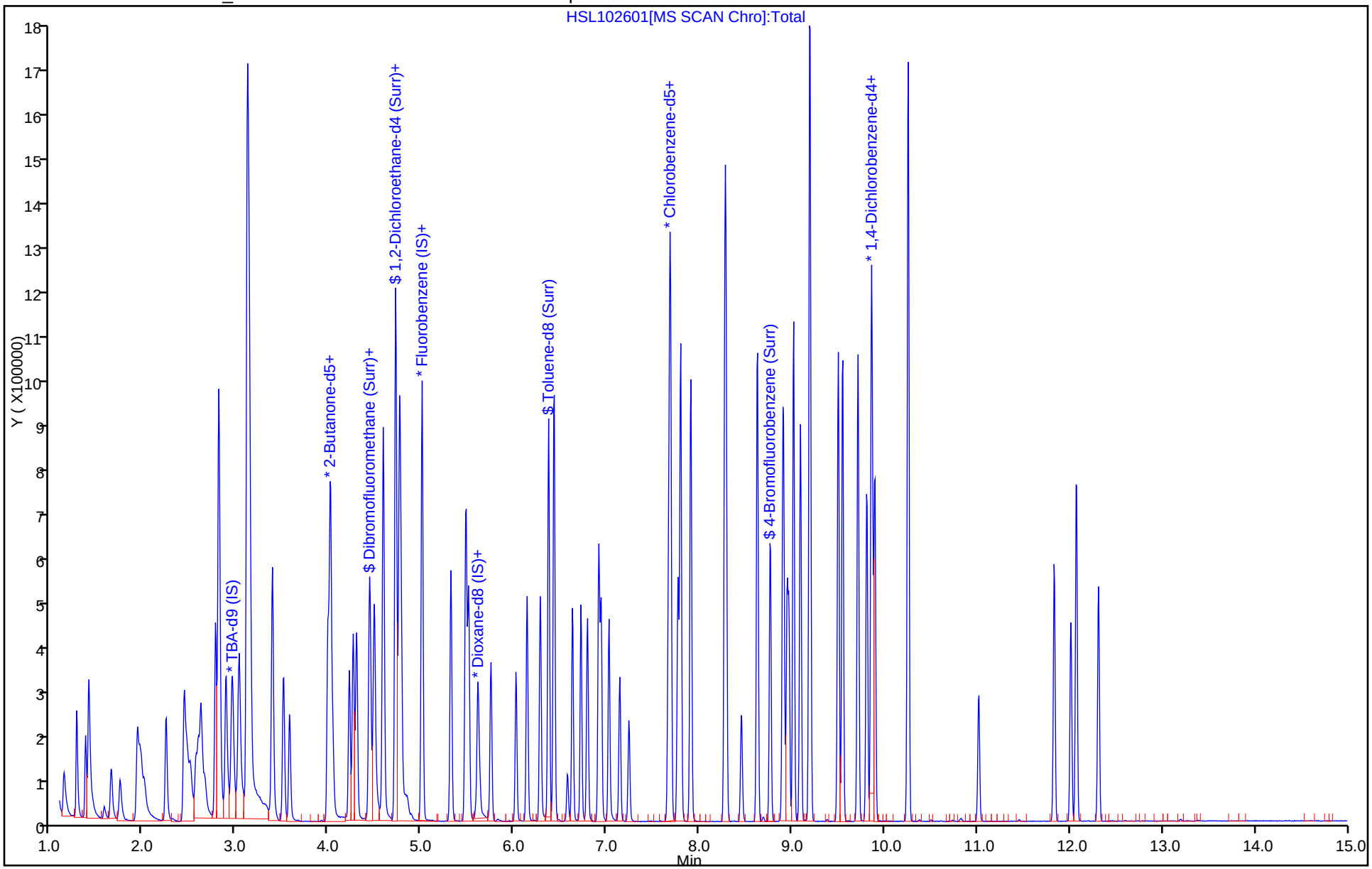
MVODDNEW_00081	Amount Added:	5.00	Units: uL		
MV8260MMIM_00096	Amount Added:	5.00	Units: uL		
MVGASESIM_00111	Amount Added:	5.00	Units: uL		
MVVAIM_00141	Amount Added:	5.00	Units: uL		
MVISIM_00055	Amount Added:	5.00	Units: uL	Run Reagent	
MV8260SUIM_00090	Amount Added:	5.00	Units: uL	Run Reagent	

Report Date: 27-Oct-2016 09:53:35 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\HSL102601.D

Injection Date:	26-Oct-2016 11:16:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	CCV HSL			Worklist Smp#:	4
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVC 320-134567/31 Calibration Date: 10/26/2016 21:17

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: SA102621.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Lin		0.2871		16.4	20.0	-17.9	50.0
Chloromethane	Ave	0.4224	0.4037	0.1000	19.1	20.0	-4.4	50.0
Vinyl chloride	Ave	0.3583	0.3621		20.2	20.0	1.1	50.0
Bromomethane	Ave	0.1748	0.1911		21.9	20.0	9.3	50.0
Chloroethane	Ave	0.1997	0.2070		20.7	20.0	3.7	50.0
Trichlorofluoromethane	Ave	0.4175	0.4457		21.3	20.0	6.7	50.0
1,1-Dichloroethene	Ave	0.2794	0.2401		17.2	20.0	-14.1	50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.2343	0.1994		17.0	20.0	-14.9	50.0
Acetone	Ave	0.5269	0.2387		9.06	20.0	-54.7*	50.0
Iodomethane	Ave	0.4357	0.4128		18.9	20.0	-5.3	50.0
Carbon disulfide	Ave	0.8642	0.7264		16.8	20.0	-15.9	50.0
3-Chloro-1-propene	Ave	0.1648	0.1577		19.1	20.0	-4.3	50.0
Methylene Chloride	Ave	0.2791	0.2630		18.8	20.0	-5.8	50.0
Acrylonitrile	Ave	0.2238	0.1211		108	200	-45.9	50.0
tert-Butyl alcohol (TBA)	Ave	0.999	1.152		231	200	15.3	50.0
trans-1,2-Dichloroethene	Ave	0.3010	0.2700		17.9	20.0	-10.3	50.0
Methyl tert-butyl ether	Ave	0.8051	0.7674		19.1	20.0	-4.7	50.0
Hexane	Ave	0.4633	0.3682		15.9	20.0	-20.5	50.0
1,1-Dichloroethane	Ave	0.5834	0.5678	0.1000	19.5	20.0	-2.7	50.0
Vinyl acetate	Ave	0.4537	0.3678		16.2	20.0	-18.9	50.0
2,2-Dichloropropane	Ave	0.1047	0.0870		16.6	20.0	-16.9	50.0
cis-1,2-Dichloroethene	Ave	0.3229	0.2975		18.4	20.0	-7.9	50.0
2-Butanone (MEK)	Ave	1.020	0.9275		18.2	20.0	-9.1	50.0
Bromochloromethane	Ave	0.1384	0.1360		19.6	20.0	-1.8	50.0
Chloroform	Ave	0.5040	0.4916		19.5	20.0	-2.5	50.0
1,1,1-Trichloroethane	Ave	0.4549	0.4138		18.2	20.0	-9.0	50.0
Cyclohexane	Ave	0.5813	0.4718		16.2	20.0	-18.8	50.0
1,1-Dichloropropene	Ave	0.4190	0.3729		17.8	20.0	-11.0	50.0
Carbon tetrachloride	Ave	0.4258	0.3738		17.6	20.0	-12.2	50.0
Benzene	Ave	1.105	1.052		19.0	20.0	-4.8	50.0
Isobutyl alcohol	Ave	0.4762	0.4434		466	500	-6.9	50.0
1,2-Dichloroethane	Ave	0.4493	0.4447		19.8	20.0	-1.0	50.0
Trichloroethene	Ave	0.3293	0.3073		18.7	20.0	-6.7	50.0
1,2-Dichloropropane	Ave	0.2934	0.2920		19.9	20.0	-0.5	50.0
Dibromomethane	Ave	0.1804	0.1721		19.1	20.0	-4.6	50.0
1,4-Dioxane	Qua2		0.9932		324	400	-19.0	50.0
Bromodichloromethane	Ave	0.3731	0.3655		19.6	20.0	-2.0	50.0
cis-1,3-Dichloropropene	Ave	0.4156	0.4062		19.5	20.0	-2.3	50.0
4-Methyl-2-pentanone (MIBK)	Ave	1.559	2.194		28.1	20.0	40.7	50.0
Toluene	Ave	0.7022	0.6612		18.8	20.0	-5.8	50.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVC 320-134567/31 Calibration Date: 10/26/2016 21:17

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: SA102621.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
trans-1,3-Dichloropropene	Ave	0.3822	0.3759		19.7	20.0	-1.7	50.0
Ethyl methacrylate	Ave	0.3570	0.3383		19.0	20.0	-5.2	50.0
1,1,2-Trichloroethane	Ave	0.2251	0.2284		20.3	20.0	1.5	50.0
Tetrachloroethene	Ave	0.4310	0.3828		17.8	20.0	-11.2	50.0
1,3-Dichloropropane	Ave	0.5566	0.5542		19.9	20.0	-0.4	50.0
2-Hexanone	Ave	1.332	1.581		23.7	20.0	18.7	50.0
Chlorodibromomethane	Ave	0.3804	0.3789		19.9	20.0	-0.4	50.0
1,2-Dibromoethane (EDB)	Ave	0.3490	0.3322		19.0	20.0	-4.8	50.0
1-Chlorohexane	Ave	0.5481	0.4413		16.1	20.0	-19.5	50.0
Chlorobenzene	Ave	1.024	0.9644	0.3000	18.8	20.0	-5.8	50.0
1,1,1,2-Tetrachloroethane	Ave	0.3699	0.3506		19.0	20.0	-5.2	50.0
Ethylbenzene	Ave	1.841	1.742		18.9	20.0	-5.3	50.0
m-Xylene & p-Xylene	Ave	1.445	1.338		18.5	20.0	-7.4	50.0
o-Xylene	Ave	1.449	1.379		19.0	20.0	-4.9	50.0
Styrene	Ave	1.035	0.9874		19.1	20.0	-4.6	50.0
Bromoform	Ave	0.2767	0.2452	0.1000	17.7	20.0	-11.4	50.0
Isopropylbenzene	Ave	1.775	1.633		18.4	20.0	-8.0	50.0
Bromobenzene	Ave	0.7718	0.7482		19.4	20.0	-3.1	50.0
1,1,2,2-Tetrachloroethane	Ave	0.9469	0.8268	0.3000	17.5	20.0	-12.7	50.0
1,2,3-Trichloropropane	Ave	0.3576	0.2844		15.9	20.0	-20.5	50.0
trans-1,4-Dichloro-2-butene	Ave	0.2495	0.1539		12.3	20.0	-38.3	50.0
N-Propylbenzene	Ave	4.089	3.837		18.8	20.0	-6.2	50.0
2-Chlorotoluene	Ave	2.415	2.271		18.8	20.0	-6.0	50.0
1,3,5-Trimethylbenzene	Ave	2.786	2.609		18.7	20.0	-6.3	50.0
4-Chlorotoluene	Ave	2.779	2.626		18.9	20.0	-5.5	50.0
tert-Butylbenzene	Ave	2.470	2.290		18.5	20.0	-7.3	50.0
1,2,4-Trimethylbenzene	Ave	2.802	2.642		18.9	20.0	-5.7	50.0
sec-Butylbenzene	Ave	3.520	3.285		18.7	20.0	-6.7	50.0
1,3-Dichlorobenzene	Ave	1.500	1.408		18.8	20.0	-6.2	50.0
p-Isopropyltoluene	Ave	2.979	2.779		18.7	20.0	-6.7	50.0
1,4-Dichlorobenzene	Ave	1.463	1.393		19.0	20.0	-4.8	50.0
1,2-Dichlorobenzene	Ave	1.350	1.305		19.3	20.0	-3.4	50.0
n-Butylbenzene	Ave	2.636	2.474		18.8	20.0	-6.1	50.0
1,2-Dibromo-3-Chloropropane	Ave	0.3203	0.1963		12.3	20.0	-38.7	50.0
1,2,4-Trichlorobenzene	Ave	0.8200	0.8114		19.8	20.0	-1.1	50.0
Hexachlorobutadiene	Ave	0.4179	0.3784		18.1	20.0	-9.5	50.0
Naphthalene	Ave	2.895	2.446		16.9	20.0	-15.5	50.0
1,2,3-Trichlorobenzene	Ave	0.7746	0.7650		19.8	20.0	-1.2	50.0
Dibromofluoromethane (Surr)	Ave	0.2635	0.2623		19.9	20.0	-0.4	50.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.3462	0.3784		21.9	20.0	9.3	50.0
Toluene-d8 (Surr)	Ave	0.9741	0.9594		19.7	20.0	-1.5	50.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVC 320-134567/31 Calibration Date: 10/26/2016 21:17

Instrument ID: HP12 Calib Start Date: 10/17/2016 20:59

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 10/17/2016 23:36

Lab File ID: SA102621.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Bromofluorobenzene (Surr)	Ave	0.3976	0.4093		20.6	20.0	2.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102621.D
Lims ID: CCVC HSL
Client ID:
Sample Type: CCVC
Inject. Date: 26-Oct-2016 21:17:30 ALS Bottle#: 30 Worklist Smp#: 31
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSL
Operator ID: KG Instrument ID: HP12
Sublist: chrom-8260B_HP12*sub56

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 12:30:13 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: sawatthaweekuls Date: 27-Oct-2016 12:29:20

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	3.050	3.050	0.000	0	130852	200.0	200.0	s
* 2 2-Butanone-d5	46	4.001	4.001	0.000	0	204776	50.0	50.0	s
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	221666	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.647	5.647	0.000	0	3084	200.0	200.0	sM
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	89	161953	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	98	83197	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	116300	20.0	19.9	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.720	4.720	0.000	0	167756	20.0	21.9	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	425337	20.0	19.7	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	87	132561	20.0	20.6	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	98	127262	20.0	16.4	
14 Chloromethane	50	1.276	1.276	0.000	99	178977	20.0	19.1	
15 Vinyl chloride	62	1.373	1.373	0.000	98	160537	20.0	20.2	
17 Butadiene	54	1.410	1.410	0.000	97	159329	20.0	20.4	
18 Bromomethane	94	1.654	1.654	0.000	99	84702	20.0	21.9	
19 Chloroethane	64	1.745	1.745	0.000	98	91773	20.0	20.7	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	97	197574	20.0	21.3	
23 1,1-Dichloroethene	96	2.440	2.440	0.000	93	106433	20.0	17.2	
24 1,1,2-Trichloro-1,2,2-trif	101	2.477	2.477	0.000	97	88391	20.0	17.0	
26 Iodomethane	142	2.568	2.568	0.000	99	183000	20.0	18.9	
25 Acetone	43	2.568	2.568	0.000	10	19550	20.0	9.06	
27 Ethyl bromide	108	2.593	2.593	0.000	99	64957	20.0	16.6	
28 Carbon disulfide	76	2.617	2.617	0.000	99	322053	20.0	16.8	
29 Isopropyl alcohol	45		2.666				ND	ND	
30 3-Chloro-1-propene	76	2.782	2.782	0.000	97	69894	20.0	19.1	
31 Methylene Chloride	84	2.891	2.891	0.000	96	116613	20.0	18.8	
34 Acrylonitrile	53	3.129	3.129	0.000	92	536673	200.0	108.2	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	95	119695	20.0	17.9	
33 2-Methyl-2-propanol	59	3.135	3.135	0.000	40	150740	200.0	230.6	
36 Methyl tert-butyl ether	73	3.147	3.147	0.000	96	340202	20.0	19.1	
37 Hexane	57	3.391	3.391	0.000	92	163226	20.0	15.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 1,1-Dichloroethane	63	3.513	3.513	0.000	99	251724	20.0	19.5	
39 Vinyl acetate	43	3.574	3.574	0.000	100	163076	20.0	16.2	
43 2,2-Dichloropropane	79	4.013	4.013	0.000	91	38579	20.0	16.6	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	131877	20.0	18.4	
45 2-Butanone (MEK)	43	4.056	4.056	0.000	98	75973	20.0	18.2	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	60283	20.0	19.6	
49 Tetrahydrofuran	42	4.269	4.269	0.000	95	112557	40.0	20.3	
50 Chloroform	83	4.300	4.300	0.000	95	217923	20.0	19.5	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	96	183437	20.0	18.2	
52 Cyclohexane	56	4.488	4.488	0.000	94	209172	20.0	16.2	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	88	165320	20.0	17.8	
53 Carbon tetrachloride	117	4.586	4.586	0.000	82	165716	20.0	17.6	
56 Benzene	78	4.763	4.763	0.000	98	466345	20.0	19.0	
55 Isobutyl alcohol	43	4.775	4.775	0.000	38	145054	500.0	465.6	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	197139	20.0	19.8	
60 n-Heptane	43	5.007	5.007	0.000	88	154910	20.0	15.8	
61 Trichloroethene	95	5.318	5.318	0.000	96	136216	20.0	18.7	
62 1,2-Dichloropropane	63	5.513	5.513	0.000	91	129458	20.0	19.9	
63 Dibromomethane	93	5.610	5.610	0.000	97	76308	20.0	19.1	
65 1,4-Dioxane	88	5.708	5.708	0.000	51	6126	400.0	323.9	
66 Dichlorobromomethane	83	5.750	5.750	0.000	97	162054	20.0	19.6	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	95	92080	20.0	19.1	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	97	180076	20.0	19.5	
69 4-Methyl-2-pentanone (MIBK	43	6.287	6.287	0.000	99	179716	20.0	28.1	
70 Toluene	92	6.433	6.433	0.000	93	293142	20.0	18.8	
72 trans-1,3-Dichloropropene	75	6.628	6.628	0.000	95	166650	20.0	19.7	
73 Ethyl methacrylate	69	6.726	6.726	0.000	87	149970	20.0	19.0	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	98	101255	20.0	20.3	
75 Tetrachloroethene	166	6.915	6.915	0.000	95	123979	20.0	17.8	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	98	179516	20.0	19.9	
77 2-Hexanone	43	7.025	7.025	0.000	94	129482	20.0	23.7	
78 Chlorodibromomethane	129	7.140	7.140	0.000	97	122731	20.0	19.9	
79 Ethylene Dibromide	107	7.238	7.238	0.000	98	107585	20.0	19.0	
80 1-Chlorohexane	91	7.677	7.677	0.000	92	142944	20.0	16.1	
81 Chlorobenzene	112	7.689	7.689	0.000	91	312375	20.0	18.8	
82 1,1,1,2-Tetrachloroethane	131	7.768	7.768	0.000	95	113568	20.0	19.0	
83 Ethylbenzene	91	7.799	7.799	0.000	99	564371	20.0	18.9	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	433408	20.0	18.5	
86 o-Xylene	91	8.274	8.274	0.000	96	446503	20.0	19.0	
87 Styrene	104	8.287	8.287	0.000	99	319814	20.0	19.1	
88 Bromoform	173	8.457	8.457	0.000	95	79416	20.0	17.7	
89 Isopropylbenzene	105	8.628	8.628	0.000	97	529004	20.0	18.4	
90 Bromobenzene	156	8.902	8.902	0.000	95	124488	20.0	19.4	
91 1,1,2,2-Tetrachloroethane	83	8.908	8.908	0.000	98	137574	20.0	17.5	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	94	47317	20.0	15.9	
93 trans-1,4-Dichloro-2-buten	89	8.969	8.969	0.000	70	25615	20.0	12.3	
94 N-Propylbenzene	91	9.018	9.018	0.000	98	638530	20.0	18.8	
95 2-Chlorotoluene	91	9.091	9.091	0.000	97	377803	20.0	18.8	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	95	434159	20.0	18.7	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	436977	20.0	18.9	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	381112	20.0	18.5	
100 1,2,4-Trimethylbenzene	105	9.548	9.548	0.000	98	439610	20.0	18.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	546558	20.0	18.7	
102 1,3-Dichlorobenzene	146	9.805	9.805	0.000	98	234248	20.0	18.8	
103 4-Isopropyltoluene	119	9.859	9.859	0.000	97	462325	20.0	18.7	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	93	231787	20.0	19.0	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	91	217088	20.0	19.3	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	411584	20.0	18.8	
108 1,2-Dibromo-3-Chloropropan	75	11.018	11.018	0.000	89	32660	20.0	12.3	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	94	135009	20.0	19.8	
111 Hexachlorobutadiene	225	12.011	12.011	0.000	96	62970	20.0	18.1	
112 Naphthalene	128	12.072	12.072	0.000	99	407006	20.0	16.9	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	94	127291	20.0	19.8	
128 Methyl acetate	43		0.000				ND	ND	
116 Methylcyclohexane	83		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		40.0	36.4	
S 139 Xylenes, Total	106				0		40.0	37.5	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

s - Failed ISTD Recovery Test

Review Flags

M - Manually Integrated

Reagents:

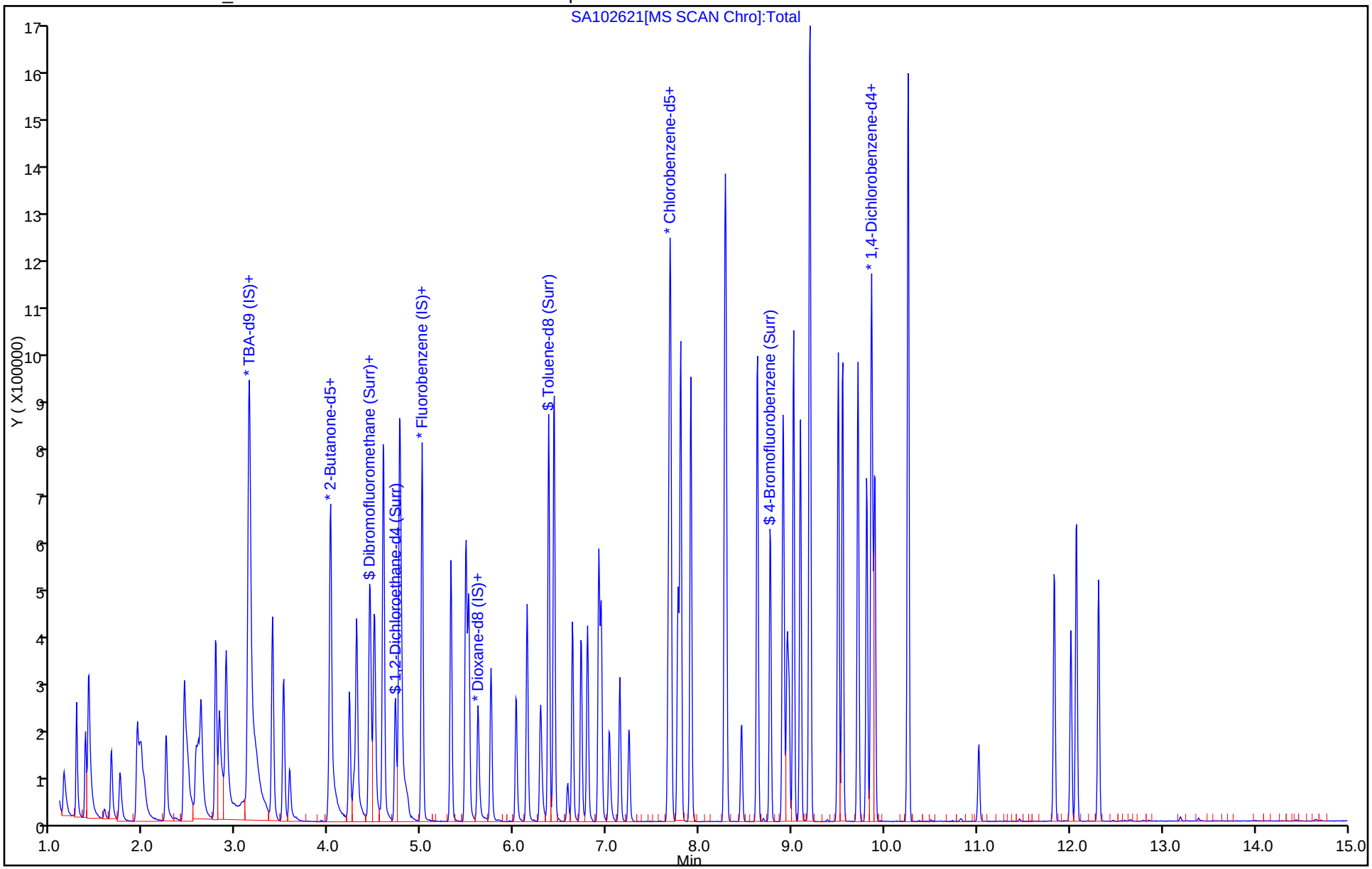
MVODDNEW_00081	Amount Added:	5.00	Units: uL	
MV8260MMIM_00096	Amount Added:	5.00	Units: uL	
MVGASESIM_00111	Amount Added:	5.00	Units: uL	
MVVAIM_00141	Amount Added:	5.00	Units: uL	
MVISIM_00055	Amount Added:	5.00	Units: uL	Run Reagent
MV8260SUIM_00090	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 27-Oct-2016 12:30:14 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102621.D

Injection Date:	26-Oct-2016 21:17:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	CCVC HSL			Worklist Smp#:	31
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	30
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

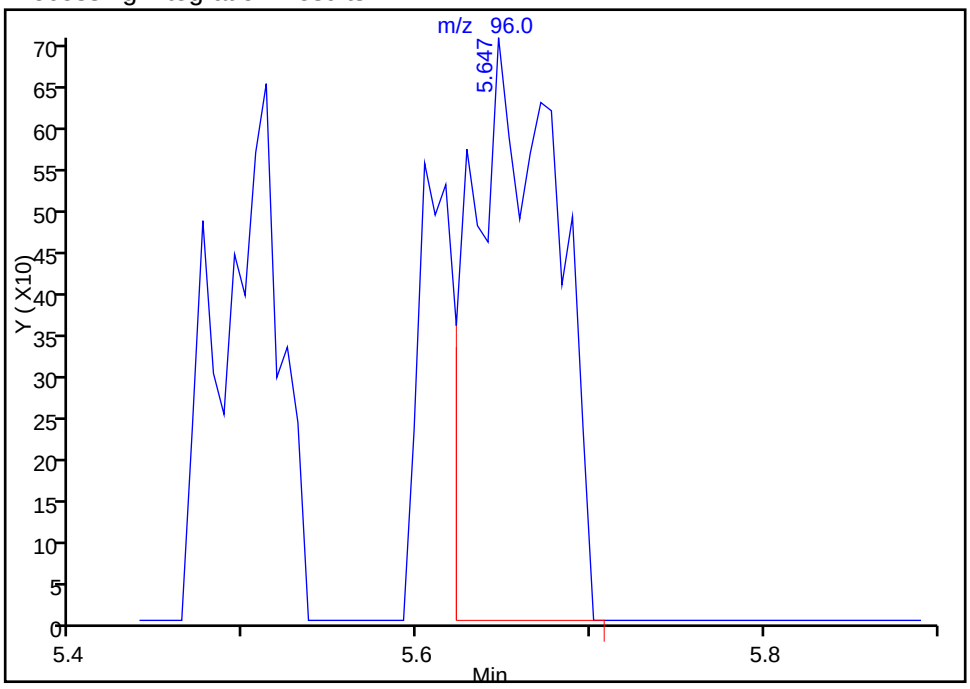
Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\SA102621.D
Injection Date: 26-Oct-2016 21:17:30 Instrument ID: HP12
Lims ID: CCVC HSL
Client ID:
Operator ID: KG ALS Bottle#: 30 Worklist Smp#: 31
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: 8260B_HP12 Limit Group: MSV - 8260B - ICAL
Column: Detector MS SCAN

* 6 Dioxane-d8 (IS), CAS: 17647-74-4

Signal: 1

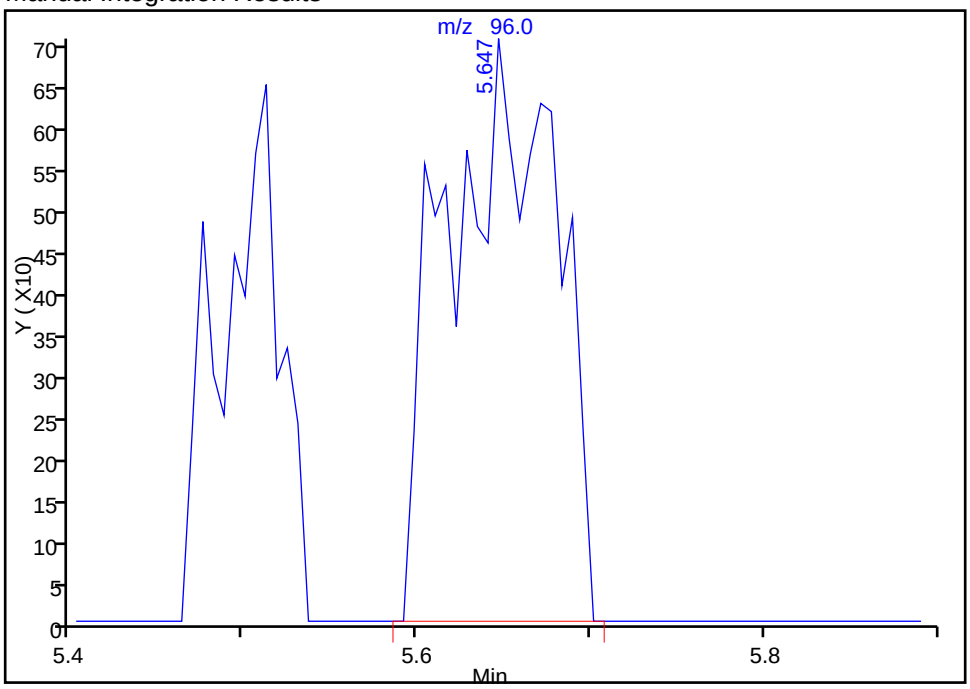
Processing Integration Results

RT: 5.65
Area: 2421
Amount: 200.0000
Amount Units: ug/l



Manual Integration Results

RT: 5.65
Area: 3084
Amount: 200.0000
Amount Units: ug/l



Reviewer: sawatthaweekuls, 27-Oct-2016 12:29:20
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\BFB101705.D
Lims ID: BFB
Client ID:
Sample Type: BFB
Inject. Date: 17-Oct-2016 14:22:30 ALS Bottle#: 100 Worklist Smp#: 1
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Sample Info: BFB
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 19-Oct-2016 17:05:33 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK017

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 7 BFB	95	3.135	3.135	0.000	0	368527	NC	NC	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

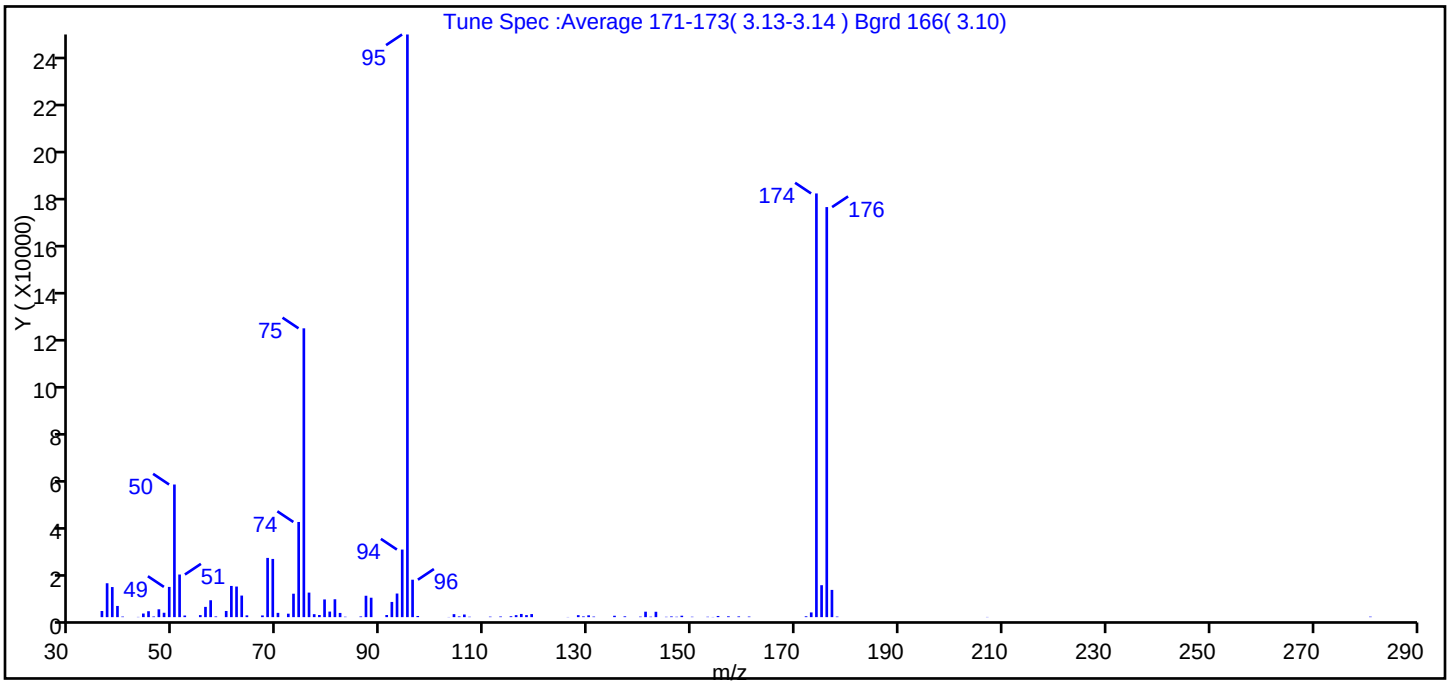
MVBFBIM_00011 Amount Added: 1.00 Units: uL

MS Tune Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\BFB101705.D
Injection Date: 17-Oct-2016 14:22:30 Instrument ID: HP12
Lims ID: BFB
Client ID:
Operator ID: KG ALS Bottle#: 100 Worklist Smp#: 1
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: 8260B_HP12 Limit Group: MSV - 8260B - ICAL
Tune Method: BFB Method 8260

$ 7 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	22.8
75	30 to 60% of m/z 95	49.6
96	5 to 9% of m/z 95	6.4
173	Less than 2% of m/z 174	0.8 (1.1)
174	50 to 120% of m/z 95	72.7
175	5 to 9% of m/z 174	5.5 (7.5)
176	Greater than 95% but less than 101% of m/z 174	70.4 (96.8)
177	5 to 9% of m/z 176	4.7 (6.6)

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\BFB101705.D\8260B_HP12.rslt\spectra.d
Injection Date: 17-Oct-2016 14:22:30
Spectrum: Tune Spec :Average 171-173(3.13-3.14) Bgrd 166(3.10)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 93

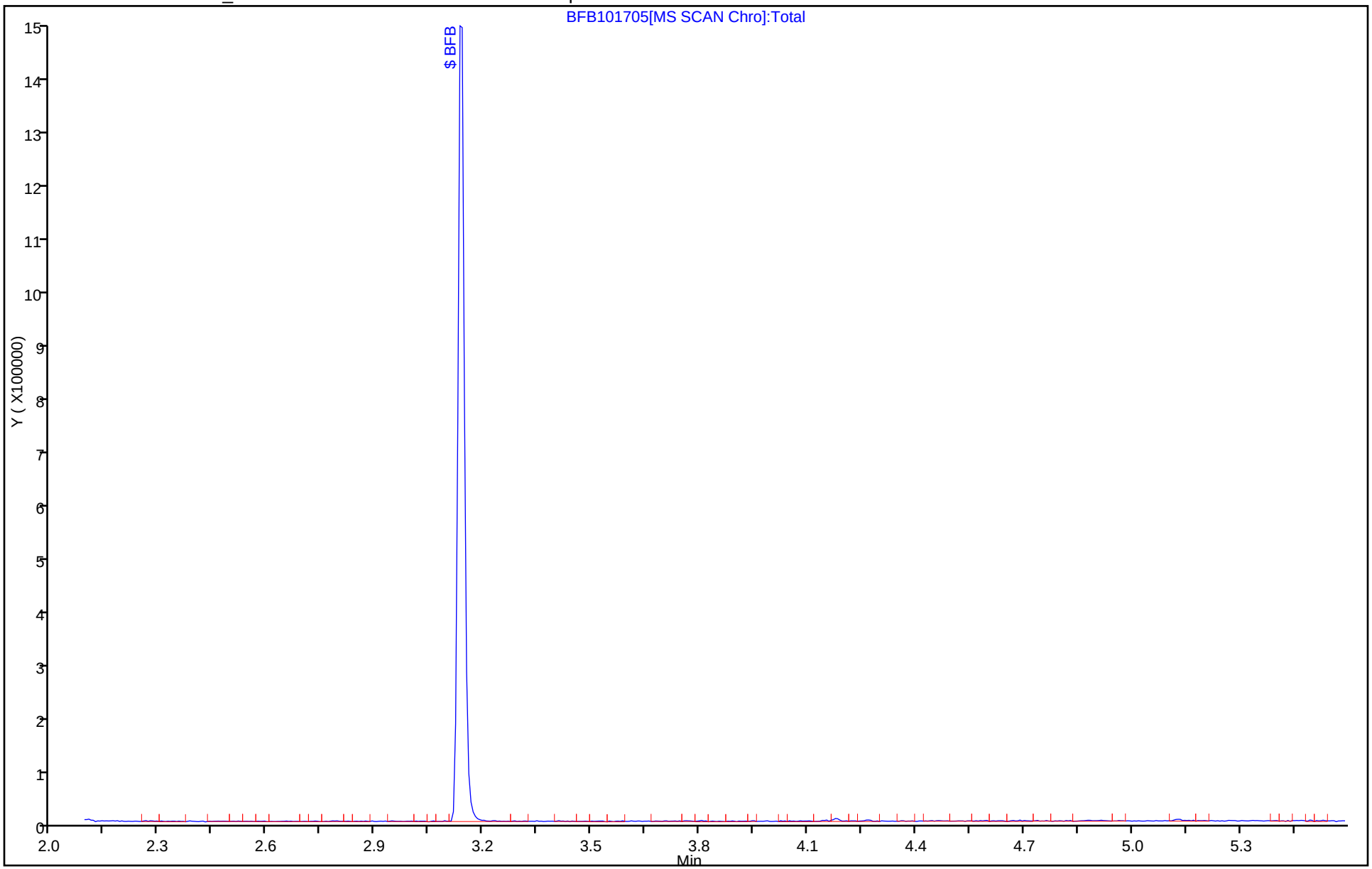
m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	2593	67.00	715	96.00	15808	143.00	2269
37.00	14313	68.00	25016	97.00	489	145.00	144
38.00	12704	69.00	24584	103.00	70	146.00	304
39.00	4727	70.00	1807	104.00	1263	147.00	164
40.00	240	72.00	1461	105.00	306	148.00	605
43.00	96	73.00	9902	106.00	1111	150.00	168
44.00	1529	74.00	40192	107.00	166	153.00	166
45.00	2503	75.00	121976	111.00	210	154.00	74
46.00	275	76.00	10368	113.00	274	155.00	494
47.00	3313	77.00	1256	115.00	379	157.00	348
48.00	1852	78.00	903	116.00	842	159.00	310
49.00	12772	79.00	7481	117.00	1350	161.00	250
50.00	56016	80.00	2355	118.00	860	172.00	366
51.00	18000	81.00	7549	119.00	1301	173.00	1992
52.00	683	82.00	1779	126.00	70	174.00	178944
55.00	860	83.00	175	128.00	836	175.00	13492
56.00	4332	86.00	293	129.00	308	176.00	173184
57.00	7135	87.00	9035	130.00	770	177.00	11507
58.00	297	88.00	8206	131.00	242	178.00	239
60.00	2610	91.00	895	135.00	587	207.00	83
61.00	13178	92.00	6423	137.00	346	281.00	202
62.00	12922	93.00	9974	140.00	224		
63.00	9113	94.00	28544	141.00	2303		
64.00	753	95.00	246080	142.00	198		

Report Date: 19-Oct-2016 17:05:35 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\BFB101705.D

Injection Date:	17-Oct-2016 14:22:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	BFB			Worklist Smp#:	1
Client ID:					
Injection Vol:	1.0 uL	Dil. Factor:	1.0000	ALS Bottle#:	100
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\BFB1026.D
Lims ID: BFB
Client ID:
Sample Type: BFB
Inject. Date: 26-Oct-2016 10:34:30 ALS Bottle#: 100 Worklist Smp#: 2
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Sample Info: BFB
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 09:53:28 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK015

First Level Reviewer: gipsonk Date: 26-Oct-2016 11:30:30

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 7 BFB	95	3.141	3.141	0.000	0	182312	NC	NC	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

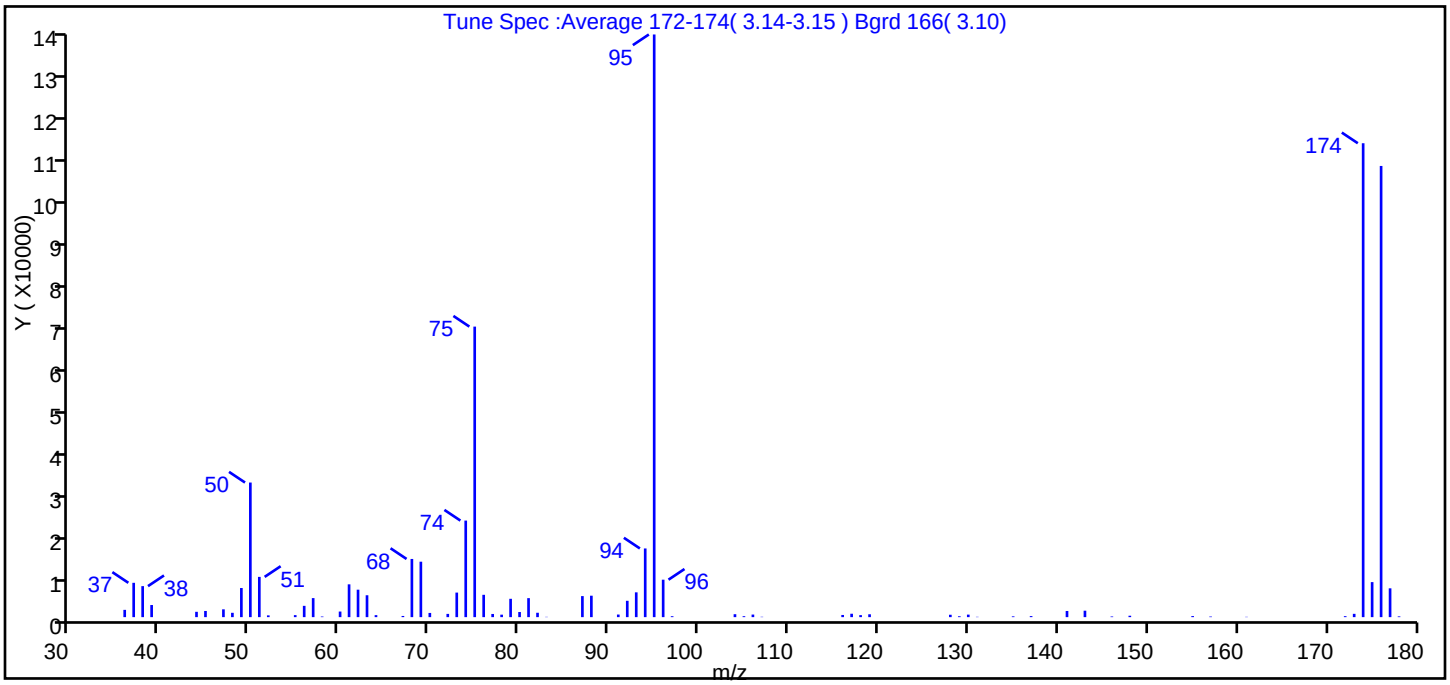
MVBFBIM_00011 Amount Added: 1.00 Units: uL

MS Tune Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\BFB1026.D
Injection Date: 26-Oct-2016 10:34:30 Instrument ID: HP12
Lims ID: BFB
Client ID:
Operator ID: KG ALS Bottle#: 100 Worklist Smp#: 2
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: 8260B_HP12 Limit Group: MSV - 8260B - ICAL
Tune Method: BFB Method 8260

$ 7 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	23.1
75	30 to 60% of m/z 95	49.9
96	5 to 9% of m/z 95	6.4
173	Less than 2% of m/z 174	0.6 (0.7)
174	50 to 120% of m/z 95	81.3
175	5 to 9% of m/z 174	6.0 (7.4)
176	Greater than 95% but less than 101% of m/z 174	77.4 (95.2)
177	5 to 9% of m/z 176	4.9 (6.4)

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\BFB1026.D\8260B_HP12.rslt\spectra.d
Injection Date: 26-Oct-2016 10:34:30
Spectrum: Tune Spec :Average 172-174(3.14-3.15) Bgrd 166(3.10)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 74

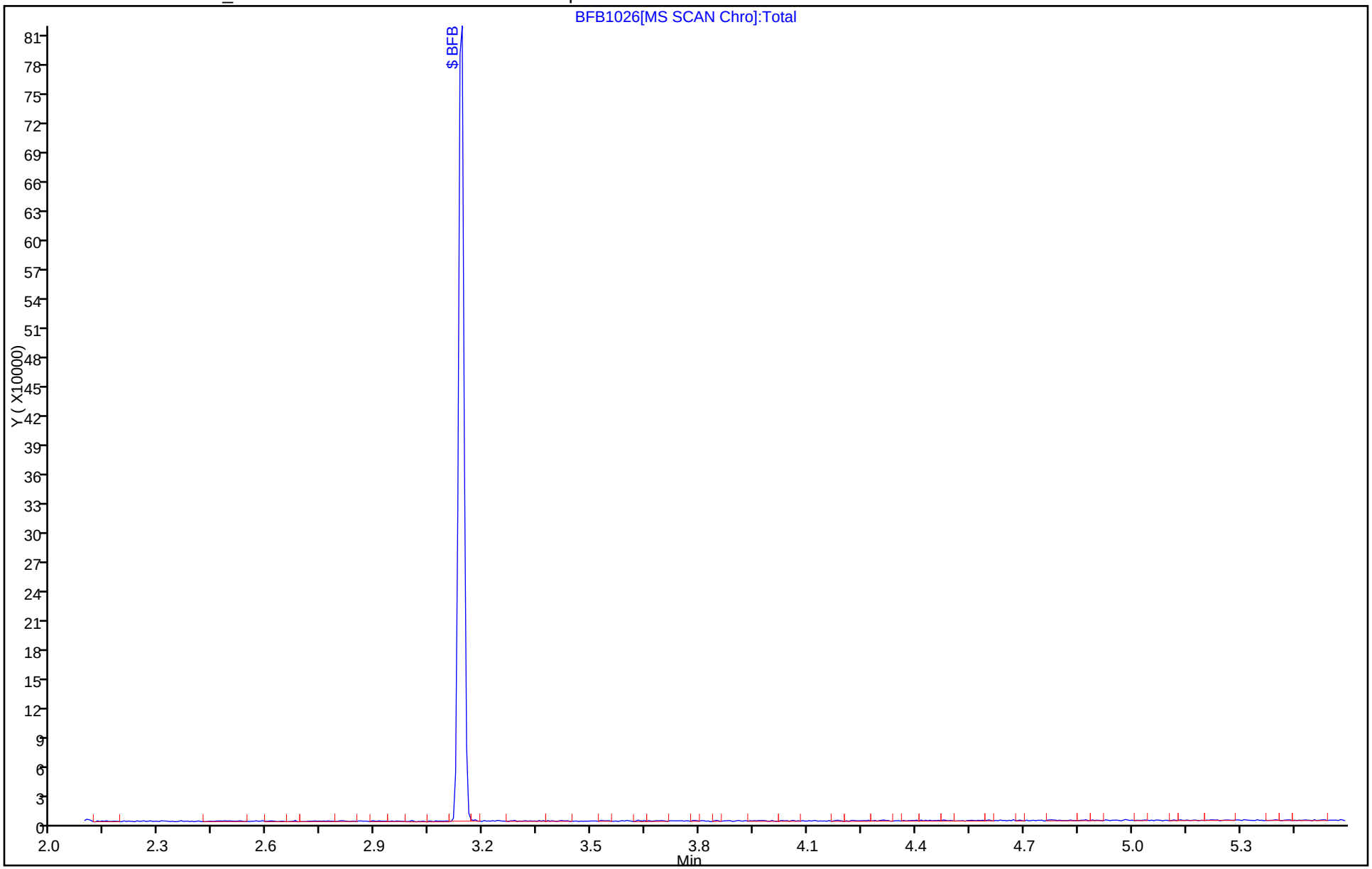
m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1675	63.00	5036	88.00	4931	131.00	74
37.00	7897	64.00	461	91.00	599	135.00	179
38.00	7132	67.00	271	92.00	3758	137.00	240
39.00	2788	68.00	13384	93.00	5706	141.00	1415
44.00	1228	69.00	12752	94.00	15798	143.00	1482
45.00	1417	70.00	967	95.00	134016	146.00	151
47.00	1798	72.00	749	96.00	8614	148.00	323
48.00	998	73.00	5647	97.00	210	155.00	243
49.00	6700	74.00	22208	104.00	677	157.00	138
50.00	30960	75.00	66824	105.00	215	161.00	71
51.00	9259	76.00	5138	106.00	596	172.00	222
52.00	407	77.00	731	107.00	82	173.00	761
55.00	463	78.00	571	116.00	500	174.00	109000
56.00	2598	79.00	4219	117.00	783	175.00	8057
57.00	4378	80.00	1177	118.00	463	176.00	103776
58.00	142	81.00	4371	119.00	660	177.00	6628
60.00	1287	82.00	1008	128.00	549	178.00	173
61.00	7546	83.00	67	129.00	201		
62.00	6315	87.00	4841	130.00	581		

Report Date: 27-Oct-2016 09:53:29 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\BFB1026.D

Injection Date:	26-Oct-2016 10:34:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	BFB			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 uL	Dil. Factor:	1.0000	ALS Bottle#:	100
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-134567/10

Matrix: Water | Lab File ID: MB102601.D

Analysis Method: 8260B | Date Collected:

Sample wt/vol: 50(mL) | Date Analyzed: 10/26/2016 13:30

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 134567 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-43-2	Benzene	0.40	U	1.0	0.40	0.13
630-20-6	1,1,1,2-Tetrachloroethane	0.40	U	1.0	0.40	0.10
71-55-6	1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.19
79-34-5	1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	0.15
79-00-5	1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.31
75-34-3	1,1-Dichloroethane	0.40	U	1.0	0.40	0.15
75-35-4	1,1-Dichloroethene	0.40	U	1.0	0.40	0.14
563-58-6	1,1-Dichloropropene	0.40	U	1.0	0.40	0.14
87-61-6	1,2,3-Trichlorobenzene	0.40	U	1.0	0.40	0.14
96-18-4	1,2,3-Trichloropropane	0.40	U	1.0	0.40	0.13
120-82-1	1,2,4-Trichlorobenzene	0.40	U	1.0	0.40	0.10
95-63-6	1,2,4-Trimethylbenzene	0.40	U	1.0	0.40	0.12
96-12-8	1,2-Dibromo-3-Chloropropane	0.80	U	2.0	0.80	0.32
106-93-4	1,2-Dibromoethane (EDB)	0.80	U	2.0	0.80	0.22
95-50-1	1,2-Dichlorobenzene	0.40	U	1.0	0.40	0.14
107-06-2	1,2-Dichloroethane	0.50	U	1.0	0.50	0.22
78-87-5	1,2-Dichloropropane	0.40	U	1.0	0.40	0.15
108-67-8	1,3,5-Trimethylbenzene	0.40	U	1.0	0.40	0.14
541-73-1	1,3-Dichlorobenzene	0.40	U	1.0	0.40	0.11
142-28-9	1,3-Dichloropropane	0.40	U	1.0	0.40	0.15
106-46-7	1,4-Dichlorobenzene	0.40	U	1.0	0.40	0.13
594-20-7	2,2-Dichloropropane	0.40	U	1.0	0.40	0.13
95-49-8	2-Chlorotoluene	0.40	U	1.0	0.40	0.15
106-43-4	4-Chlorotoluene	0.40	U	1.0	0.40	0.15
108-86-1	Bromobenzene	0.40	U	1.0	0.40	0.18
74-97-5	Bromochloromethane	0.40	U	1.0	0.40	0.14
75-27-4	Bromodichloromethane	0.40	U	1.0	0.40	0.14
75-25-2	Bromoform	0.40	U	1.0	0.40	0.10
74-83-9	Bromomethane	0.80	U	1.0	0.80	0.29
56-23-5	Carbon tetrachloride	0.40	U	1.0	0.40	0.15
108-90-7	Chlorobenzene	0.40	U	1.0	0.40	0.12
75-00-3	Chloroethane	0.80	U	1.0	0.80	0.34
67-66-3	Chloroform	0.40	U	1.0	0.40	0.12
74-87-3	Chloromethane	0.80	U	1.0	0.80	0.25
156-59-2	cis-1,2-Dichloroethene	0.40	U	1.0	0.40	0.10
10061-01-5	cis-1,3-Dichloropropene	0.80	U	1.0	0.80	0.22

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-134567/10

Matrix: Water | Lab File ID: MB102601.D

Analysis Method: 8260B | Date Collected:

Sample wt/vol: 50(mL) | Date Analyzed: 10/26/2016 13:30

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 134567 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
74-95-3	Dibromomethane	0.80	U	1.0	0.80	0.21
75-71-8	Dichlorodifluoromethane	0.40	U	1.0	0.40	0.16
100-41-4	Ethylbenzene	0.40	U	1.0	0.40	0.15
87-68-3	Hexachlorobutadiene	0.80	U	1.0	0.80	0.22
98-82-8	Isopropylbenzene	0.40	U	1.0	0.40	0.12
75-09-2	Methylene Chloride	0.80	U	1.0	0.80	0.35
179601-23-1	m-Xylene & p-Xylene	0.40	U	1.0	0.40	0.18
91-20-3	Naphthalene	0.40	U	1.0	0.40	0.15
104-51-8	n-Butylbenzene	0.40	U	1.0	0.40	0.12
103-65-1	N-Propylbenzene	0.40	U	1.0	0.40	0.15
95-47-6	o-Xylene	0.40	U	1.0	0.40	0.10
99-87-6	p-Isopropyltoluene	0.40	U	1.0	0.40	0.13
135-98-8	sec-Butylbenzene	0.40	U	1.0	0.40	0.12
100-42-5	Styrene	0.40	U	1.0	0.40	0.15
98-06-6	tert-Butylbenzene	0.40	U	1.0	0.40	0.14
127-18-4	Tetrachloroethene	0.40	U	1.0	0.40	0.15
108-88-3	Toluene	0.80	U	1.0	0.80	0.25
156-60-5	trans-1,2-Dichloroethene	0.40	U	1.0	0.40	0.11
10061-02-6	trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.15
79-01-6	Trichloroethene	0.40	U	1.0	0.40	0.13
75-69-4	Trichlorofluoromethane	0.80	U	1.0	0.80	0.23
75-01-4	Vinyl chloride	0.80	U	1.0	0.80	0.22

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	109		81-118
460-00-4	4-Bromofluorobenzene (Surr)	102		85-114
1868-53-7	Dibromofluoromethane (Surr)	99		80-119
2037-26-5	Toluene-d8 (Surr)	96		89-112

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\MB102601.D
Lims ID: MB
Client ID:
Sample Type: MB
Inject. Date: 26-Oct-2016 13:30:30 ALS Bottle#: 9 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: MB
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 09:52:33 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK015

First Level Reviewer: gipsonk Date: 26-Oct-2016 14:45:22

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.952	0.000	0	427809	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	456677	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	232201	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.580	0.006	0	13497	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	90	169642	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	97	85342	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	121470	20.0	19.9	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	174794	20.0	21.7	
$ 10 Trifluorotoluene (Surr)	146		5.580					ND	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	97	436296	20.0	19.3	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	88	137401	20.0	20.4	
13 Dichlorodifluoromethane	85		1.142					ND	
14 Chloromethane	50		1.276					ND	
15 Vinyl chloride	62		1.373					ND	
17 Butadiene	54		1.410					ND	
18 Bromomethane	94		1.648					ND	
19 Chloroethane	64		1.745					ND	
20 Trichlorofluoromethane	101		1.971					ND	
22 Acrolein	56		2.355					ND	
23 1,1-Dichloroethene	96		2.440					ND	
24 1,1,2-Trichloro-1,2,2-trif	101		2.465					ND	
25 Acetone	43		2.501					ND	
26 Iodomethane	142		2.568					ND	
27 Ethyl bromide	108		2.593					ND	
28 Carbon disulfide	76		2.617					ND	
29 Isopropyl alcohol	45		2.666					ND	
30 3-Chloro-1-propene	76		2.775					ND	
31 Methylene Chloride	84		2.891					ND	
33 2-Methyl-2-propanol	59		3.031					ND	
34 Acrylonitrile	53		3.117					ND	
35 trans-1,2-Dichloroethene	96		3.135					ND	
36 Methyl tert-butyl ether	73		3.147					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
37 Hexane	57		3.391					ND	
38 1,1-Dichloroethane	63		3.507					ND	
39 Vinyl acetate	43		3.574					ND	
41 2-Chloro-1,3-butadiene	53		3.592					ND	
40 Isopropyl ether	45		3.592					ND	
42 Tert-butyl ethyl ether	59		3.909					ND	
43 2,2-Dichloropropane	79		4.013					ND	
44 cis-1,2-Dichloroethene	96		4.019					ND	
46 Propionitrile	54		4.092					ND	
48 Chlorobromomethane	128		4.220					ND	
47 Methacrylonitrile	41		4.293					ND	
50 Chloroform	83		4.300					ND	
51 1,1,1-Trichloroethane	97		4.446					ND	
52 Cyclohexane	56		4.489					ND	
54 1,1-Dichloropropene	75		4.586					ND	
53 Carbon tetrachloride	117		4.586					ND	
55 Isobutyl alcohol	43		4.720					ND	
56 Benzene	78		4.763					ND	
57 1,2-Dichloroethane	62		4.781					ND	
59 Tert-amyl methyl ether	73		4.873					ND	
60 n-Heptane	43		5.007					ND	
61 Trichloroethene	95		5.318					ND	
62 1,2-Dichloropropane	63		5.507					ND	
63 Dibromomethane	93		5.610					ND	
64 Methyl methacrylate	41		5.622					ND	
65 1,4-Dioxane	88		5.629					ND	
66 Dichlorobromomethane	83		5.750					ND	
67 2-Chloroethyl vinyl ether	63		6.019					ND	
68 cis-1,3-Dichloropropene	75		6.141					ND	
69 4-Methyl-2-pentanone (MIBK	43		6.281					ND	
70 Toluene	92		6.433					ND	
72 trans-1,3-Dichloropropene	75		6.628					ND	
73 Ethyl methacrylate	69		6.720					ND	
74 1,1,2-Trichloroethane	97		6.793					ND	
75 Tetrachloroethene	166		6.915					ND	
76 1,3-Dichloropropane	76		6.939					ND	
77 2-Hexanone	43		7.025					ND	
78 Chlorodibromomethane	129		7.140					ND	
79 Ethylene Dibromide	107		7.238					ND	
80 1-Chlorohexane	91		7.677					ND	
81 Chlorobenzene	112		7.689					ND	
82 1,1,1,2-Tetrachloroethane	131		7.768					ND	
83 Ethylbenzene	91		7.799					ND	
84 m-Xylene & p-Xylene	91		7.909					ND	
86 o-Xylene	91		8.274					ND	
87 Styrene	104		8.287					ND	
88 Bromoform	173		8.451					ND	
89 Isopropylbenzene	105		8.628					ND	
90 Bromobenzene	156		8.902					ND	
91 1,1,2,2-Tetrachloroethane	83		8.908					ND	
92 1,2,3-Trichloropropane	110		8.945					ND	
93 trans-1,4-Dichloro-2-buten	89		8.969					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
94 N-Propylbenzene	91		9.018					ND	
95 2-Chlorotoluene	91		9.091					ND	
96 1,3,5-Trimethylbenzene	105		9.189					ND	
98 4-Chlorotoluene	91		9.195					ND	
99 tert-Butylbenzene	119		9.500					ND	
100 1,2,4-Trimethylbenzene	105		9.549					ND	
101 sec-Butylbenzene	105		9.713					ND	
102 1,3-Dichlorobenzene	146		9.805					ND	
103 4-Isopropyltoluene	119		9.859					ND	
104 1,4-Dichlorobenzene	146		9.896					ND	
106 1,2-Dichlorobenzene	146		10.256					ND	
105 n-Butylbenzene	91		10.256					ND	
108 1,2-Dibromo-3-Chloropropan	75		11.012					ND	
110 1,2,4-Trichlorobenzene	180		11.829					ND	
111 Hexachlorobutadiene	225		12.011					ND	
112 Naphthalene	128		12.072					ND	
113 1,2,3-Trichlorobenzene	180		12.310					ND	
124 2-Methylnaphthalene	142		0.000					ND	
119 Methyl Acetate TIC	1		0.000					ND	
128 Methyl acetate	43		0.000					ND	
115 n-Butanol	56		0.000					ND	
130 t-Amyl alcohol	1		0.000					ND	
131 Ethyl acetate	43		0.000					ND	
126 n-Butyl acetate	43		0.000					ND	
116 Methylcyclohexane	83		0.000					ND	
125 Ethanol	45		0.000					ND	
122 Acetonitrile	40		0.000					ND	
127 Pentachloroethane	167		0.000					ND	
123 Benzyl chloride	126		0.000					ND	
129 2-Nitropropane	43		0.000					ND	
120 Ethyl ether	59		0.000					ND	
121 Ethyl acrylate	55		0.000					ND	
A 132 C6-C10 AK	1	6.218	(3.310-9.077)		0	413740			NC
A 133 GRO	1	6.189	(2.786-9.606)		0	476063			NC
A 134 C6-C10	1	6.318	(3.310-9.277)		0	430306			NC
A 135 C4-C12	1	6.412	(1.237-11.514)		0	799160			NC
A 136 C5-C12	1	6.753	(1.895-11.514)		0	678954			NC
A 137 C6-C12	1	7.436	(3.310-11.514)		0	614916			NC
A 138 C7-C12	1	8.192	(4.870-11.514)		0	485328			NC
S 140 1,2-Dichloroethene, Total	96		0.000					ND	
S 139 Xylenes, Total	106		0.000					ND	
T 147 Chloroacetonitrile TIC	75		6.000					ND	
T 148 Methyl acrylate TIC	55		6.000					ND	
T 145 Methyl cyclohexane TIC	83		6.000					ND	
T 143 Pentafluorobenzene TIC	168		6.000					ND	
T 142 1-Chlorobutane TIC	56		6.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

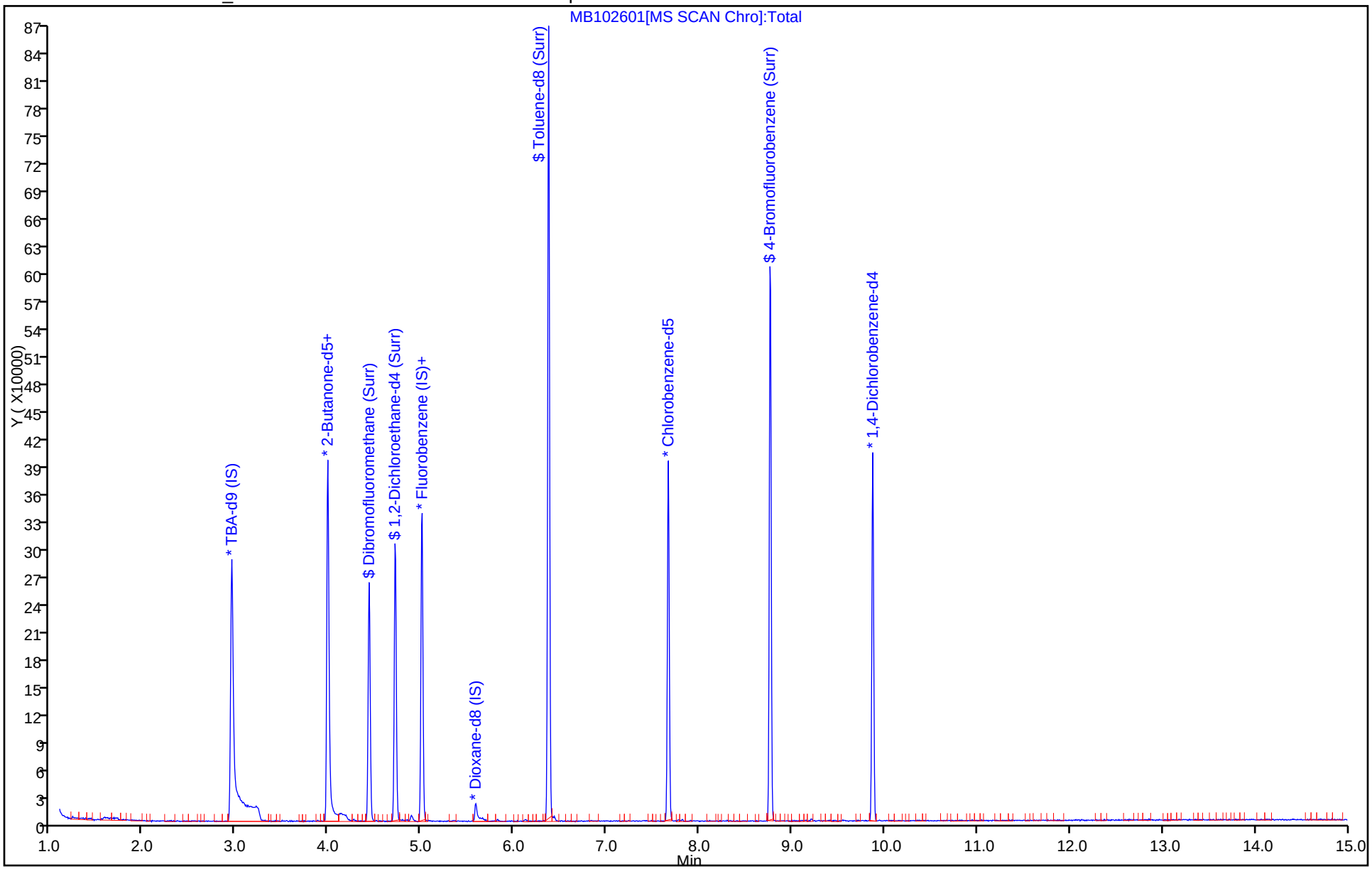
MVISIM_00055	Amount Added:	5.00	Units: uL	Run Reagent
MV8260SUIM_00090	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 27-Oct-2016 09:53:00 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\MB102601.D

Injection Date:	26-Oct-2016 13:30:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	MB			Worklist Smp#:	10
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\MB102601.D
Lims ID: MB
Client ID:
Sample Type: MB
Inject. Date: 26-Oct-2016 13:30:30 ALS Bottle#: 9 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: MB
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 09:52:33 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK015

First Level Reviewer: gipsonk Date: 26-Oct-2016 14:45:22

Compound	Amount Added	Amount Recovered	% Rec.
$ 8 Dibromofluoromethane (Surr)	20.0	19.9	99.27
$ 9 1,2-Dichloroethane-d4 (Surr)	20.0	21.7	108.72
$ 11 Toluene-d8 (Surr)	20.0	19.3	96.45
$ 12 4-Bromofluorobenzene (Surr)	20.0	20.4	101.86

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-134567/5

Matrix: Water Lab File ID: HSL102602.D

Analysis Method: 8260B Date Collected:

Sample wt/vol: 50(mL) Date Analyzed: 10/26/2016 11:39

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 134567 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-43-2	Benzene	18.7		1.0	0.40	0.13
630-20-6	1,1,1,2-Tetrachloroethane	19.0		1.0	0.40	0.10
71-55-6	1,1,1-Trichloroethane	17.5		1.0	0.40	0.19
79-34-5	1,1,2,2-Tetrachloroethane	21.2		1.0	0.40	0.15
79-00-5	1,1,2-Trichloroethane	20.2		1.0	0.80	0.31
75-34-3	1,1-Dichloroethane	19.3		1.0	0.40	0.15
75-35-4	1,1-Dichloroethene	17.3		1.0	0.40	0.14
563-58-6	1,1-Dichloropropene	17.8		1.0	0.40	0.14
87-61-6	1,2,3-Trichlorobenzene	19.3		1.0	0.40	0.14
96-18-4	1,2,3-Trichloropropane	19.9		1.0	0.40	0.13
120-82-1	1,2,4-Trichlorobenzene	19.5		1.0	0.40	0.10
95-63-6	1,2,4-Trimethylbenzene	18.9		1.0	0.40	0.12
96-12-8	1,2-Dibromo-3-Chloropropane	19.8		2.0	0.80	0.32
106-93-4	1,2-Dibromoethane (EDB)	19.9		2.0	0.80	0.22
95-50-1	1,2-Dichlorobenzene	19.1		1.0	0.40	0.14
107-06-2	1,2-Dichloroethane	19.6		1.0	0.50	0.22
78-87-5	1,2-Dichloropropane	19.4		1.0	0.40	0.15
108-67-8	1,3,5-Trimethylbenzene	19.0		1.0	0.40	0.14
541-73-1	1,3-Dichlorobenzene	18.9		1.0	0.40	0.11
142-28-9	1,3-Dichloropropane	19.5		1.0	0.40	0.15
106-46-7	1,4-Dichlorobenzene	19.2		1.0	0.40	0.13
594-20-7	2,2-Dichloropropane	17.9		1.0	0.40	0.13
95-49-8	2-Chlorotoluene	18.9		1.0	0.40	0.15
106-43-4	4-Chlorotoluene	19.0		1.0	0.40	0.15
108-86-1	Bromobenzene	19.4		1.0	0.40	0.18
74-97-5	Bromochloromethane	19.7		1.0	0.40	0.14
75-27-4	Bromodichloromethane	19.4		1.0	0.40	0.14
75-25-2	Bromoform	18.8		1.0	0.40	0.10
74-83-9	Bromomethane	17.8		1.0	0.80	0.29
56-23-5	Carbon tetrachloride	16.8		1.0	0.40	0.15
108-90-7	Chlorobenzene	18.7		1.0	0.40	0.12
75-00-3	Chloroethane	18.3		1.0	0.80	0.34
67-66-3	Chloroform	19.1		1.0	0.40	0.12
74-87-3	Chloromethane	18.7		1.0	0.80	0.25
156-59-2	cis-1,2-Dichloroethene	18.1		1.0	0.40	0.10
10061-01-5	cis-1,3-Dichloropropene	19.9		1.0	0.80	0.22

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-134567/5

Matrix: Water Lab File ID: HSL102602.D

Analysis Method: 8260B Date Collected:

Sample wt/vol: 50(mL) Date Analyzed: 10/26/2016 11:39

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: DB-624 ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 134567 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
74-95-3	Dibromomethane	19.8		1.0	0.80	0.21
75-71-8	Dichlorodifluoromethane	16.1		1.0	0.40	0.16
100-41-4	Ethylbenzene	18.8		1.0	0.40	0.15
87-68-3	Hexachlorobutadiene	18.9		1.0	0.80	0.22
98-82-8	Isopropylbenzene	18.4		1.0	0.40	0.12
75-09-2	Methylene Chloride	18.8		1.0	0.80	0.35
179601-23-1	m-Xylene & p-Xylene	18.4		1.0	0.40	0.18
91-20-3	Naphthalene	19.5		1.0	0.40	0.15
104-51-8	n-Butylbenzene	19.4		1.0	0.40	0.12
103-65-1	N-Propylbenzene	19.1		1.0	0.40	0.15
95-47-6	o-Xylene	18.8		1.0	0.40	0.10
99-87-6	p-Isopropyltoluene	18.9		1.0	0.40	0.13
135-98-8	sec-Butylbenzene	18.6		1.0	0.40	0.12
100-42-5	Styrene	18.7		1.0	0.40	0.15
98-06-6	tert-Butylbenzene	18.4		1.0	0.40	0.14
127-18-4	Tetrachloroethene	18.3		1.0	0.40	0.15
108-88-3	Toluene	18.8		1.0	0.80	0.25
156-60-5	trans-1,2-Dichloroethene	17.9		1.0	0.40	0.11
10061-02-6	trans-1,3-Dichloropropene	19.7		1.0	0.40	0.15
79-01-6	Trichloroethene	17.7		1.0	0.40	0.13
75-69-4	Trichlorofluoromethane	19.4		1.0	0.80	0.23
75-01-4	Vinyl chloride	19.2		1.0	0.80	0.22

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	105		81-118
460-00-4	4-Bromofluorobenzene (Surr)	99		85-114
1868-53-7	Dibromofluoromethane (Surr)	98		80-119
2037-26-5	Toluene-d8 (Surr)	95		89-112

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\HSL102602.D
Lims ID: LCS HSL
Client ID:
Sample Type: LCS
Inject. Date: 26-Oct-2016 11:39:30 ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSL
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 09:53:34 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK015

First Level Reviewer: gipsonk Date: 26-Oct-2016 12:47:24

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.958	-0.006	0	491240	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	477518	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	237834	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	20440	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	88	173423	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	97	87866	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	122550	20.0	19.6	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	172643	20.0	21.0	
$ 11 Toluene-d8 (Surr)	98	6.373	6.372	0.001	97	439127	20.0	19.0	
$ 12 4-Bromofluorobenzene (Surr	174	8.762	8.768	-0.006	86	136087	20.0	19.7	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	98	133716	20.0	16.1	
14 Chloromethane	50	1.276	1.276	0.000	99	187674	20.0	18.7	
15 Vinyl chloride	62	1.374	1.373	0.001	98	163981	20.0	19.2	
17 Butadiene	54	1.410	1.410	0.000	98	159487	20.0	19.1	
18 Bromomethane	94	1.654	1.648	0.006	99	73859	20.0	17.8	
19 Chloroethane	64	1.745	1.745	0.000	99	86786	20.0	18.3	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	97	192371	20.0	19.4	
23 1,1-Dichloroethene	96	2.440	2.440	0.000	93	114709	20.0	17.3	
24 1,1,2-Trichloro-1,2,2-trif	101	2.471	2.465	0.006	97	88390	20.0	15.9	
25 Acetone	43	2.507	2.501	0.006	100	94798	20.0	18.8	
26 Iodomethane	142	2.568	2.568	0.000	98	185922	20.0	17.9	
27 Ethyl bromide	108	2.593	2.593	0.000	100	75598	20.0	18.0	
28 Carbon disulfide	76	2.617	2.617	0.000	99	347873	20.0	16.9	
29 Isopropyl alcohol	45	2.666	2.666	0.000	99	80377	100.0	82.2	
30 3-Chloro-1-propene	76	2.776	2.775	0.001	96	75715	20.0	19.3	
31 Methylene Chloride	84	2.892	2.891	0.001	97	124530	20.0	18.8	
33 2-Methyl-2-propanol	59	3.032	3.031	0.001	96	400574	200.0	163.2	
34 Acrylonitrile	53	3.117	3.117	0.000	94	1121298	200.0	210.7	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	94	128294	20.0	17.9	
36 Methyl tert-butyl ether	73	3.148	3.147	0.001	96	374893	20.0	19.6	
37 Hexane	57	3.391	3.391	0.000	92	188024	20.0	17.1	
38 1,1-Dichloroethane	63	3.513	3.507	0.006	99	268085	20.0	19.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
39 Vinyl acetate	43	3.574	3.574	0.000	100	296915	20.0	27.5	
43 2,2-Dichloropropane	79	4.013	4.013	0.000	88	44512	20.0	17.9	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	139003	20.0	18.1	
45 2-Butanone (MEK)	43	4.038	4.043	-0.005	99	184195	20.0	18.9	
48 Chlorobromomethane	128	4.221	4.220	0.000	98	64879	20.0	19.7	
49 Tetrahydrofuran	42	4.263	4.263	0.000	93	237664	40.0	40.0	
50 Chloroform	83	4.300	4.300	0.000	96	229454	20.0	19.1	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	97	189156	20.0	17.5	
52 Cyclohexane	56	4.495	4.489	0.006	94	219145	20.0	15.8	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	91	177780	20.0	17.8	
53 Carbon tetrachloride	117	4.586	4.586	0.000	93	169961	20.0	16.8	
55 Isobutyl alcohol	43	4.720	4.720	0.000	98	577406	500.0	493.6	
56 Benzene	78	4.763	4.763	0.000	97	492561	20.0	18.7	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	209331	20.0	19.6	
60 n-Heptane	43	5.007	5.007	0.000	94	187065	20.0	17.8	
61 Trichloroethene	95	5.318	5.318	0.000	97	138976	20.0	17.7	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	92	135403	20.0	19.4	
63 Dibromomethane	93	5.610	5.610	0.000	97	84830	20.0	19.8	
65 1,4-Dioxane	88	5.629	5.629	0.000	97	43950	400.0	351.7	
66 Dichlorobromomethane	83	5.751	5.750	0.001	97	172357	20.0	19.4	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	95	103636	20.0	20.0	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	97	196741	20.0	19.9	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	99	291439	20.0	19.6	
70 Toluene	92	6.433	6.433	0.000	94	314271	20.0	18.8	
72 trans-1,3-Dichloropropene	75	6.629	6.628	0.001	95	179052	20.0	19.7	
73 Ethyl methacrylate	69	6.720	6.720	0.000	86	165785	20.0	19.5	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	98	107965	20.0	20.2	
75 Tetrachloroethene	166	6.915	6.915	0.000	95	136655	20.0	18.3	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	96	188050	20.0	19.5	
77 2-Hexanone	43	7.025	7.025	0.000	93	248800	20.0	19.6	
78 Chlorodibromomethane	129	7.141	7.140	0.001	98	130079	20.0	19.7	
79 Ethylene Dibromide	107	7.238	7.238	0.000	97	120524	20.0	19.9	
80 1-Chlorohexane	91	7.677	7.677	0.000	92	156186	20.0	16.4	
81 Chlorobenzene	112	7.689	7.689	0.000	92	331579	20.0	18.7	
82 1,1,1,2-Tetrachloroethane	131	7.769	7.768	0.001	97	121712	20.0	19.0	
83 Ethylbenzene	91	7.799	7.799	0.000	99	598834	20.0	18.8	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	459845	20.0	18.4	
86 o-Xylene	91	8.275	8.274	0.001	96	471499	20.0	18.8	
87 Styrene	104	8.287	8.287	0.000	98	335536	20.0	18.7	
88 Bromoform	173	8.457	8.451	0.006	95	90126	20.0	18.8	
89 Isopropylbenzene	105	8.628	8.628	0.000	97	567605	20.0	18.4	
90 Bromobenzene	156	8.903	8.902	0.001	96	131232	20.0	19.4	
91 1,1,2,2-Tetrachloroethane	83	8.909	8.908	0.001	99	176476	20.0	21.2	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	95	62676	20.0	19.9	
93 trans-1,4-Dichloro-2-buten	89	8.970	8.969	0.001	76	41675	20.0	19.0	
94 N-Propylbenzene	91	9.018	9.018	0.000	98	687662	20.0	19.1	
95 2-Chlorotoluene	91	9.092	9.091	0.001	98	400062	20.0	18.9	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	92	465720	20.0	19.0	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	464326	20.0	19.0	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	398887	20.0	18.4	
100 1,2,4-Trimethylbenzene	105	9.543	9.549	-0.005	98	465824	20.0	18.9	
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	576726	20.0	18.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
102 1,3-Dichlorobenzene	146	9.805	9.805	0.000	98	249486	20.0	18.9	
103 4-Isopropyltoluene	119	9.854	9.859	-0.005	99	495425	20.0	18.9	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	93	246451	20.0	19.2	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	87	227003	20.0	19.1	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	448342	20.0	19.4	
108 1,2-Dibromo-3-Chloropropan	75	11.018	11.012	0.006	93	55666	20.0	19.8	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	94	140639	20.0	19.5	
111 Hexachlorobutadiene	225	12.012	12.011	0.001	96	69426	20.0	18.9	
112 Naphthalene	128	12.067	12.072	-0.005	99	496369	20.0	19.5	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	94	131469	20.0	19.3	
116 Methylcyclohexane	83		0.000				ND	ND	
128 Methyl acetate	43		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		40.0	36.0	
S 139 Xylenes, Total	106				0		40.0	37.1	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

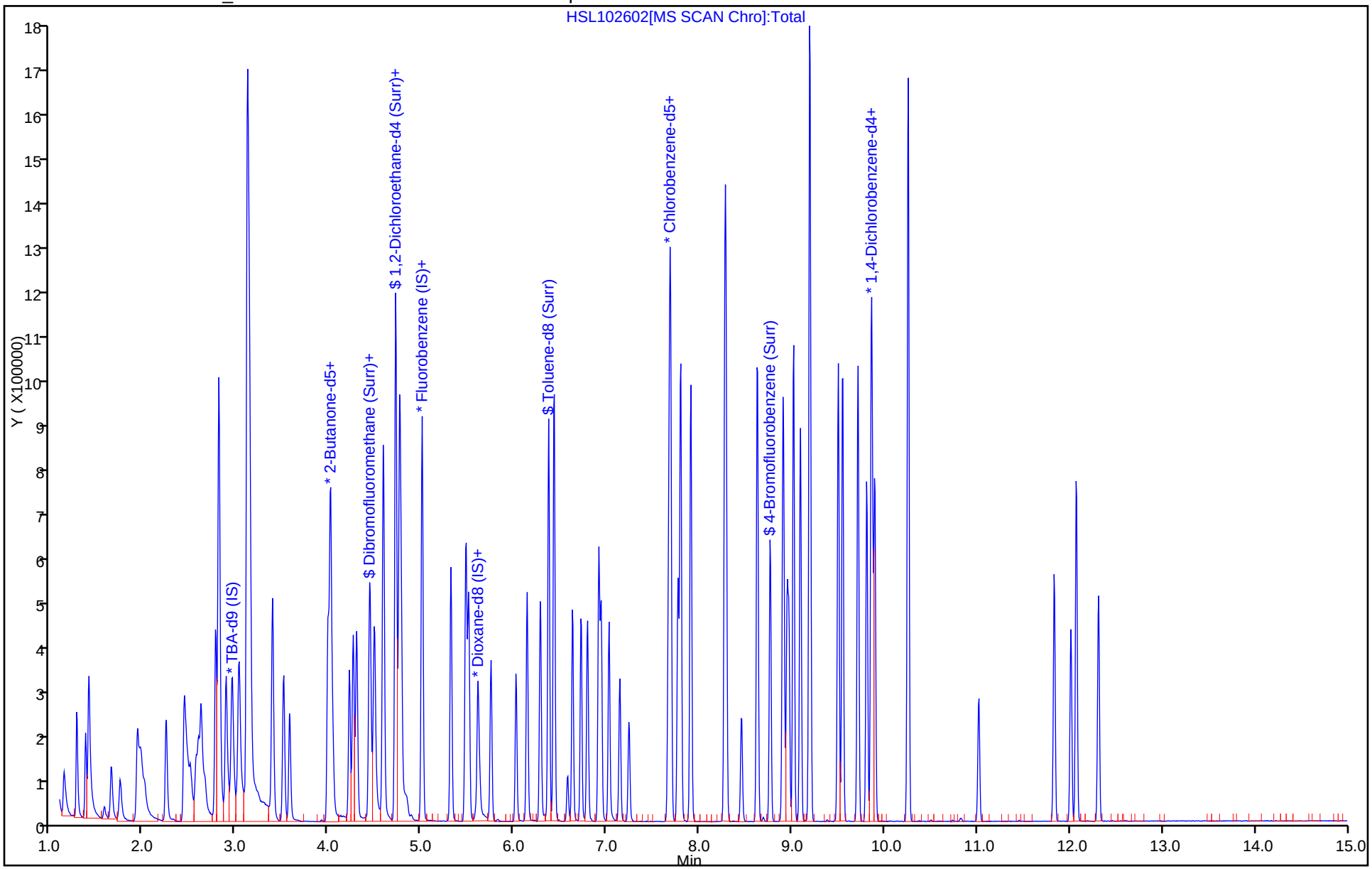
MVODDNEW_00081	Amount Added:	5.00	Units: uL		
MV8260MMIM_00096	Amount Added:	5.00	Units: uL		
MVGASESIM_00111	Amount Added:	5.00	Units: uL		
MVVAIM_00141	Amount Added:	5.00	Units: uL		
MVISIM_00055	Amount Added:	5.00	Units: uL	Run Reagent	
MV8260SUIM_00090	Amount Added:	5.00	Units: uL	Run Reagent	

Report Date: 27-Oct-2016 09:53:38 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\HSL102602.D

Injection Date:	26-Oct-2016 11:39:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	LCS HSL			Worklist Smp#:	5
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\HSL102602.D
Lims ID: LCS HSL
Client ID:
Sample Type: LCS
Inject. Date: 26-Oct-2016 11:39:30 ALS Bottle#: 4 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSL
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 09:53:34 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK015

First Level Reviewer: gipsonk Date: 26-Oct-2016 12:47:24

Compound	Amount Added	Amount Recovered	% Rec.
$ 8 Dibromofluoromethane (Surr)	20.0	19.6	97.78
$ 9 1,2-Dichloroethane-d4 (Surr)	20.0	21.0	104.84
$ 11 Toluene-d8 (Surr)	20.0	19.0	94.77
$ 12 4-Bromofluorobenzene (Surr)	20.0	19.7	98.69

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-134567/6

Matrix: Water | Lab File ID: HSL102603.D

Analysis Method: 8260B | Date Collected:

Sample wt/vol: 50(mL) | Date Analyzed: 10/26/2016 12:01

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 134567 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-43-2	Benzene	19.1		1.0	0.40	0.13
630-20-6	1,1,1,2-Tetrachloroethane	18.9		1.0	0.40	0.10
71-55-6	1,1,1-Trichloroethane	18.2		1.0	0.40	0.19
79-34-5	1,1,2,2-Tetrachloroethane	20.5		1.0	0.40	0.15
79-00-5	1,1,2-Trichloroethane	20.8		1.0	0.80	0.31
75-34-3	1,1-Dichloroethane	19.8		1.0	0.40	0.15
75-35-4	1,1-Dichloroethene	17.7		1.0	0.40	0.14
563-58-6	1,1-Dichloropropene	18.6		1.0	0.40	0.14
87-61-6	1,2,3-Trichlorobenzene	19.8		1.0	0.40	0.14
96-18-4	1,2,3-Trichloropropane	20.2		1.0	0.40	0.13
120-82-1	1,2,4-Trichlorobenzene	20.4		1.0	0.40	0.10
95-63-6	1,2,4-Trimethylbenzene	19.1		1.0	0.40	0.12
96-12-8	1,2-Dibromo-3-Chloropropane	20.2		2.0	0.80	0.32
106-93-4	1,2-Dibromoethane (EDB)	20.3		2.0	0.80	0.22
95-50-1	1,2-Dichlorobenzene	19.7		1.0	0.40	0.14
107-06-2	1,2-Dichloroethane	19.9		1.0	0.50	0.22
78-87-5	1,2-Dichloropropane	20.1		1.0	0.40	0.15
108-67-8	1,3,5-Trimethylbenzene	19.1		1.0	0.40	0.14
541-73-1	1,3-Dichlorobenzene	18.9		1.0	0.40	0.11
142-28-9	1,3-Dichloropropane	19.8		1.0	0.40	0.15
106-46-7	1,4-Dichlorobenzene	19.7		1.0	0.40	0.13
594-20-7	2,2-Dichloropropane	18.3		1.0	0.40	0.13
95-49-8	2-Chlorotoluene	18.8		1.0	0.40	0.15
106-43-4	4-Chlorotoluene	19.2		1.0	0.40	0.15
108-86-1	Bromobenzene	19.4		1.0	0.40	0.18
74-97-5	Bromochloromethane	20.6		1.0	0.40	0.14
75-27-4	Bromodichloromethane	19.6		1.0	0.40	0.14
75-25-2	Bromoform	19.3		1.0	0.40	0.10
74-83-9	Bromomethane	18.3		1.0	0.80	0.29
56-23-5	Carbon tetrachloride	18.0		1.0	0.40	0.15
108-90-7	Chlorobenzene	19.0		1.0	0.40	0.12
75-00-3	Chloroethane	18.5		1.0	0.80	0.34
67-66-3	Chloroform	20.0		1.0	0.40	0.12
74-87-3	Chloromethane	19.4		1.0	0.80	0.25
156-59-2	cis-1,2-Dichloroethene	18.8		1.0	0.40	0.10
10061-01-5	cis-1,3-Dichloropropene	20.8		1.0	0.80	0.22

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-134567/6

Matrix: Water | Lab File ID: HSL102603.D

Analysis Method: 8260B | Date Collected:

Sample wt/vol: 50(mL) | Date Analyzed: 10/26/2016 12:01

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-624 ID: 0.18(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 134567 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
74-95-3	Dibromomethane	20.4		1.0	0.80	0.21
75-71-8	Dichlorodifluoromethane	15.8		1.0	0.40	0.16
100-41-4	Ethylbenzene	18.9		1.0	0.40	0.15
87-68-3	Hexachlorobutadiene	20.2		1.0	0.80	0.22
98-82-8	Isopropylbenzene	18.8		1.0	0.40	0.12
75-09-2	Methylene Chloride	19.6		1.0	0.80	0.35
179601-23-1	m-Xylene & p-Xylene	18.7		1.0	0.40	0.18
91-20-3	Naphthalene	19.9		1.0	0.40	0.15
104-51-8	n-Butylbenzene	20.0		1.0	0.40	0.12
103-65-1	N-Propylbenzene	19.3		1.0	0.40	0.15
95-47-6	o-Xylene	19.4		1.0	0.40	0.10
99-87-6	p-Isopropyltoluene	19.4		1.0	0.40	0.13
135-98-8	sec-Butylbenzene	19.0		1.0	0.40	0.12
100-42-5	Styrene	19.1		1.0	0.40	0.15
98-06-6	tert-Butylbenzene	18.8		1.0	0.40	0.14
127-18-4	Tetrachloroethene	18.8		1.0	0.40	0.15
108-88-3	Toluene	19.0		1.0	0.80	0.25
156-60-5	trans-1,2-Dichloroethene	18.5		1.0	0.40	0.11
10061-02-6	trans-1,3-Dichloropropene	20.5		1.0	0.40	0.15
79-01-6	Trichloroethene	18.1		1.0	0.40	0.13
75-69-4	Trichlorofluoromethane	19.8		1.0	0.80	0.23
75-01-4	Vinyl chloride	19.3		1.0	0.80	0.22

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	109		81-118
460-00-4	4-Bromofluorobenzene (Surr)	102		85-114
1868-53-7	Dibromofluoromethane (Surr)	100		80-119
2037-26-5	Toluene-d8 (Surr)	99		89-112

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\HSL102603.D
Lims ID: LCSD HSL
Client ID:
Sample Type: LCSD
Inject. Date: 26-Oct-2016 12:01:30 ALS Bottle#: 5 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSL
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 09:53:34 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK015

First Level Reviewer: gipsonk Date: 26-Oct-2016 12:51:19

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 1 TBA-d9 (IS)	65	2.952	2.958	-0.006	0	494568	200.0	200.0	
* 2 2-Butanone-d5	46	3.989	3.989	0.000	0	500363	50.0	50.0	
* 3 Fluorobenzene (IS)	96	5.007	5.007	0.000	0	230312	10.0	10.0	
* 6 Dioxane-d8 (IS)	96	5.586	5.586	0.000	0	17635	200.0	200.0	
* 4 Chlorobenzene-d5	117	7.665	7.665	0.000	88	170717	10.0	10.0	
* 5 1,4-Dichlorobenzene-d4	152	9.872	9.872	0.000	98	88202	10.0	10.0	
$ 8 Dibromofluoromethane (Surr	113	4.434	4.434	0.000	96	120976	20.0	19.9	
$ 9 1,2-Dichloroethane-d4 (Sur	65	4.714	4.714	0.000	0	173553	20.0	21.8	
$ 11 Toluene-d8 (Surr)	98	6.372	6.372	0.000	98	444926	20.0	19.8	
$ 12 4-Bromofluorobenzene (Surr	174	8.768	8.768	0.000	93	137880	20.0	20.3	
13 Dichlorodifluoromethane	85	1.142	1.142	0.000	98	127457	20.0	15.8	
14 Chloromethane	50	1.276	1.276	0.000	99	188697	20.0	19.4	
15 Vinyl chloride	62	1.373	1.373	0.000	98	159041	20.0	19.3	
17 Butadiene	54	1.410	1.410	0.000	99	158485	20.0	19.6	
18 Bromomethane	94	1.648	1.648	0.000	98	73757	20.0	18.3	
19 Chloroethane	64	1.745	1.745	0.000	99	85041	20.0	18.5	
20 Trichlorofluoromethane	101	1.971	1.971	0.000	97	190139	20.0	19.8	
23 1,1-Dichloroethene	96	2.434	2.440	-0.006	94	113705	20.0	17.7	
24 1,1,2-Trichloro-1,2,2-trif	101	2.471	2.465	0.006	97	94877	20.0	17.6	
25 Acetone	43	2.501	2.501	0.000	98	90167	20.0	17.1	
26 Iodomethane	142	2.568	2.568	0.000	99	188051	20.0	18.7	
27 Ethyl bromide	108	2.593	2.593	0.000	99	75891	20.0	18.6	
28 Carbon disulfide	76	2.617	2.617	0.000	99	349586	20.0	17.6	
29 Isopropyl alcohol	45	2.660	2.666	-0.006	100	93104	100.0	94.6	
30 3-Chloro-1-propene	76	2.776	2.775	0.001	97	74462	20.0	19.6	
31 Methylene Chloride	84	2.891	2.891	0.000	97	125812	20.0	19.6	
33 2-Methyl-2-propanol	59	3.032	3.031	0.001	96	405379	200.0	164.1	
34 Acrylonitrile	53	3.117	3.117	0.000	94	1106539	200.0	214.7	
35 trans-1,2-Dichloroethene	96	3.135	3.135	0.000	93	128273	20.0	18.5	
36 Methyl tert-butyl ether	73	3.148	3.147	0.001	96	362932	20.0	19.6	
37 Hexane	57	3.391	3.391	0.000	92	215626	20.0	20.2	
38 1,1-Dichloroethane	63	3.507	3.507	0.000	99	265754	20.0	19.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
39 Vinyl acetate	43	3.574	3.574	0.000	100	285693	20.0	27.3	
43 2,2-Dichloropropane	79	4.013	4.013	0.000	91	44146	20.0	18.3	
44 cis-1,2-Dichloroethene	96	4.019	4.019	0.000	98	139506	20.0	18.8	
45 2-Butanone (MEK)	43	4.044	4.043	0.001	98	176134	20.0	17.3	
48 Chlorobromomethane	128	4.220	4.220	0.000	98	65685	20.0	20.6	
49 Tetrahydrofuran	42	4.263	4.263	0.000	92	232111	40.0	40.3	
50 Chloroform	83	4.300	4.300	0.000	96	232674	20.0	20.0	
51 1,1,1-Trichloroethane	97	4.446	4.446	0.000	96	190704	20.0	18.2	
52 Cyclohexane	56	4.489	4.489	0.000	94	238194	20.0	17.8	
54 1,1-Dichloropropene	75	4.586	4.586	0.000	88	179421	20.0	18.6	
53 Carbon tetrachloride	117	4.586	4.586	0.000	83	176647	20.0	18.0	
55 Isobutyl alcohol	43	4.720	4.720	0.000	97	587839	500.0	499.2	
56 Benzene	78	4.763	4.763	0.000	97	485484	20.0	19.1	
57 1,2-Dichloroethane	62	4.781	4.781	0.000	97	205733	20.0	19.9	
60 n-Heptane	43	5.007	5.007	0.000	94	211013	20.0	20.8	
61 Trichloroethene	95	5.318	5.318	0.000	96	137475	20.0	18.1	
62 1,2-Dichloropropane	63	5.507	5.507	0.000	92	135734	20.0	20.1	
63 Dibromomethane	93	5.604	5.610	-0.006	96	84729	20.0	20.4	
65 1,4-Dioxane	88	5.629	5.629	0.000	96	46263	400.0	433.5	
66 Dichlorobromomethane	83	5.751	5.750	0.001	97	168414	20.0	19.6	
67 2-Chloroethyl vinyl ether	63	6.019	6.019	0.000	96	103260	20.0	20.6	
68 cis-1,3-Dichloropropene	75	6.141	6.141	0.000	97	199139	20.0	20.8	
69 4-Methyl-2-pentanone (MIBK	43	6.281	6.281	0.000	99	292196	20.0	18.7	
70 Toluene	92	6.433	6.433	0.000	93	307363	20.0	19.0	
72 trans-1,3-Dichloropropene	75	6.629	6.628	0.001	95	180184	20.0	20.5	
73 Ethyl methacrylate	69	6.720	6.720	0.000	87	167159	20.0	20.3	
74 1,1,2-Trichloroethane	97	6.793	6.793	0.000	98	107664	20.0	20.8	
75 Tetrachloroethene	166	6.915	6.915	0.000	95	138260	20.0	18.8	
76 1,3-Dichloropropane	76	6.939	6.939	0.000	97	188322	20.0	19.8	
77 2-Hexanone	43	7.025	7.025	0.000	93	249632	20.0	18.7	
78 Chlorodibromomethane	129	7.141	7.140	0.001	97	129545	20.0	19.9	
79 Ethylene Dibromide	107	7.238	7.238	0.000	98	121145	20.0	20.3	
80 1-Chlorohexane	91	7.677	7.677	0.000	91	159249	20.0	17.0	
81 Chlorobenzene	112	7.689	7.689	0.000	91	333035	20.0	19.0	
82 1,1,1,2-Tetrachloroethane	131	7.769	7.768	0.001	96	119288	20.0	18.9	
83 Ethylbenzene	91	7.799	7.799	0.000	99	595197	20.0	18.9	
84 m-Xylene & p-Xylene	91	7.909	7.909	0.000	83	462218	20.0	18.7	
86 o-Xylene	91	8.275	8.274	0.001	98	481103	20.0	19.4	
87 Styrene	104	8.287	8.287	0.000	98	336913	20.0	19.1	
88 Bromoform	173	8.451	8.451	0.000	95	91148	20.0	19.3	
89 Isopropylbenzene	105	8.628	8.628	0.000	97	569622	20.0	18.8	
90 Bromobenzene	156	8.902	8.902	0.000	97	132296	20.0	19.4	
91 1,1,2,2-Tetrachloroethane	83	8.909	8.908	0.001	99	171506	20.0	20.5	
92 1,2,3-Trichloropropane	110	8.945	8.945	0.000	95	63788	20.0	20.2	
93 trans-1,4-Dichloro-2-buten	89	8.970	8.969	0.001	77	40407	20.0	18.4	
94 N-Propylbenzene	91	9.018	9.018	0.000	98	694392	20.0	19.3	
95 2-Chlorotoluene	91	9.091	9.091	0.000	98	401313	20.0	18.8	
96 1,3,5-Trimethylbenzene	105	9.189	9.189	0.000	97	470350	20.0	19.1	
98 4-Chlorotoluene	91	9.195	9.195	0.000	99	470824	20.0	19.2	
99 tert-Butylbenzene	119	9.500	9.500	0.000	93	410524	20.0	18.8	
100 1,2,4-Trimethylbenzene	105	9.549	9.549	0.001	98	472519	20.0	19.1	
101 sec-Butylbenzene	105	9.713	9.713	0.000	98	590973	20.0	19.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
102 1,3-Dichlorobenzene	146	9.811	9.805	0.006	98	249910	20.0	18.9	
103 4-Isopropyltoluene	119	9.860	9.859	0.001	97	508906	20.0	19.4	
104 1,4-Dichlorobenzene	146	9.896	9.896	0.000	94	254209	20.0	19.7	
106 1,2-Dichlorobenzene	146	10.256	10.256	0.000	93	234246	20.0	19.7	
105 n-Butylbenzene	91	10.256	10.256	0.000	98	464023	20.0	20.0	
108 1,2-Dibromo-3-Chloropropan	75	11.012	11.012	0.000	92	57204	20.0	20.2	
110 1,2,4-Trichlorobenzene	180	11.829	11.829	0.000	94	147742	20.0	20.4	
111 Hexachlorobutadiene	225	12.012	12.011	0.001	96	74336	20.0	20.2	
112 Naphthalene	128	12.073	12.072	0.001	99	507889	20.0	19.9	
113 1,2,3-Trichlorobenzene	180	12.310	12.310	0.000	95	135377	20.0	19.8	
116 Methylcyclohexane	83		0.000				ND	ND	
128 Methyl acetate	43		0.000				ND	ND	
120 Ethyl ether	59		0.000				ND	ND	
S 140 1,2-Dichloroethene, Total	96				0		40.0	37.3	
S 139 Xylenes, Total	106				0		40.0	38.2	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

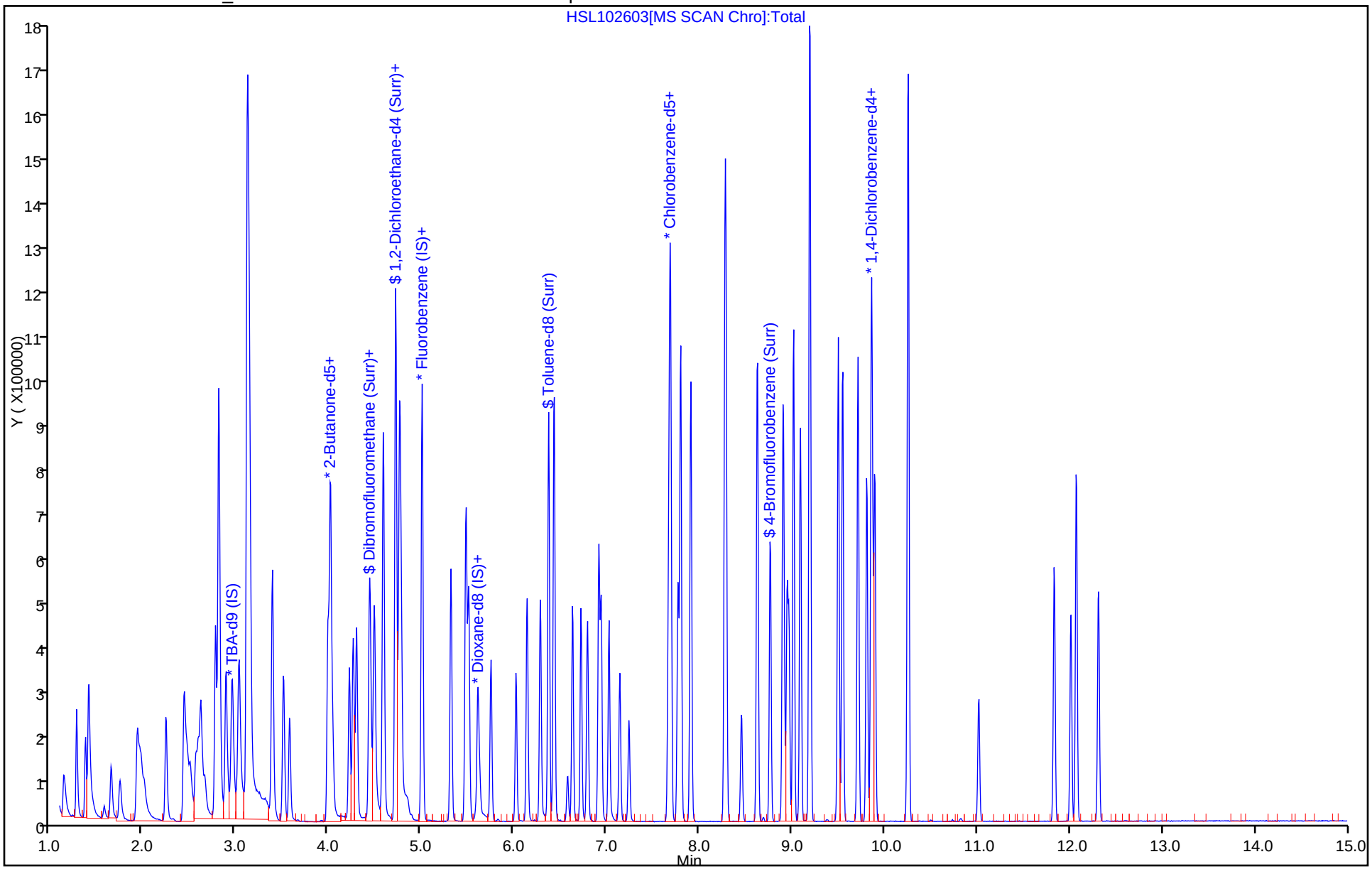
MVODDNEW_00081	Amount Added:	5.00	Units: uL		
MV8260MMIM_00096	Amount Added:	5.00	Units: uL		
MVGASESIM_00111	Amount Added:	5.00	Units: uL		
MVVAIM_00141	Amount Added:	5.00	Units: uL		
MVISIM_00055	Amount Added:	5.00	Units: uL	Run Reagent	
MV8260SUIM_00090	Amount Added:	5.00	Units: uL	Run Reagent	

Report Date: 27-Oct-2016 09:53:41 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\HSL102603.D

Injection Date:	26-Oct-2016 12:01:30	Instrument ID:	HP12	Operator ID:	KG
Lims ID:	LCSD HSL			Worklist Smp#:	6
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	8260B_HP12	Limit Group:	MSV - 8260B - ICAL		



11/14/2016

TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\HSL102603.D
Lims ID: LCSD HSL
Client ID:
Sample Type: LCSD
Inject. Date: 26-Oct-2016 12:01:30 ALS Bottle#: 5 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: HSL
Operator ID: KG Instrument ID: HP12

Method: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b\8260B_HP12.m
Limit Group: MSV - 8260B - ICAL
Last Update: 27-Oct-2016 09:53:34 Calib Date: 17-Oct-2016 23:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b\H1017IC8.D

Column 1 : Det: MS SCAN
Process Host: XAWRK015

First Level Reviewer: gipsonk Date: 26-Oct-2016 12:51:19

Compound	Amount Added	Amount Recovered	% Rec.
$ 8 Dibromofluoromethane (Surr)	20.0	19.9	99.68
$ 9 1,2-Dichloroethane-d4 (Surr)	20.0	21.8	108.83
$ 11 Toluene-d8 (Surr)	20.0	19.8	99.16
$ 12 4-Bromofluorobenzene (Surr)	20.0	20.3	101.57

GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: HP12 Start Date: 10/17/2016 14:22

Analysis Batch Number: 132993 End Date: 10/18/2016 00:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 320-132993/1		10/17/2016 14:22	1	BFB101705.D	DB-624 0.18(mm)
IC 320-132993/4		10/17/2016 20:59	1	H1017IC1.D	DB-624 0.18(mm)
IC 320-132993/5		10/17/2016 21:22	1	H1017IC2.D	DB-624 0.18(mm)
IC 320-132993/6		10/17/2016 21:44	1	H1017IC3.D	DB-624 0.18(mm)
IC 320-132993/7		10/17/2016 22:07	1	H1017IC4.D	DB-624 0.18(mm)
ICIS 320-132993/8		10/17/2016 22:29	1	H1017IC5.D	DB-624 0.18(mm)
IC 320-132993/9		10/17/2016 22:51	1	H1017IC6.D	DB-624 0.18(mm)
IC 320-132993/10		10/17/2016 23:13	1	H1017IC7.D	DB-624 0.18(mm)
IC 320-132993/11		10/17/2016 23:36	1	H1017IC8.D	DB-624 0.18(mm)
ICV 320-132993/14		10/18/2016 00:42	1	H1017ICV01.D	DB-624 0.18(mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: HP12 Start Date: 10/26/2016 10:34

Analysis Batch Number: 134567 End Date: 10/26/2016 21:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 320-134567/2		10/26/2016 10:34	1	BFB1026.D	DB-624 0.18(mm)
CCV 320-134567/4		10/26/2016 11:16	1	HSL102601.D	DB-624 0.18(mm)
LCS 320-134567/5		10/26/2016 11:39	1	HSL102602.D	DB-624 0.18(mm)
LCSD 320-134567/6		10/26/2016 12:01	1	HSL102603.D	DB-624 0.18(mm)
MB 320-134567/10		10/26/2016 13:30	1	MB102601.D	DB-624 0.18(mm)
ZZZZZ		10/26/2016 18:41	1		DB-624 0.18(mm)
ZZZZZ		10/26/2016 19:04	1		DB-624 0.18(mm)
ZZZZZ		10/26/2016 19:26	1		DB-624 0.18(mm)
320-22881-1		10/26/2016 19:48	10	SA102617.D	DB-624 0.18(mm)
ZZZZZ		10/26/2016 20:10	10		DB-624 0.18(mm)
CCVC 320-134567/31		10/26/2016 21:17	1	SA102621.D	DB-624 0.18(mm)

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GCMS Volatile CCV and Batch Data Review Checklist

Part 1: CCV Review 134565, 134566

LIMS Batch Number: 134567	**Worklist #:** 36129	**Instrument ID:** HP12
Analyst/1st Reviewer: SLp S 10/29/16	**Prep Method (circle):** 5030 5035-L (5035-H)	**Analytical Method (circle):** 624 (8260B) 8260C Other AX101MS, CALMS
QC Type (circle): (Standard) QAPP (DOD) Other-Explain_____		
Matrix (circle one): (Non-potable Water) (Solid) Waste		**Circle:** (5-ml) (Meth Ext) 5g/10mL TCLP/SPLP

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. Tune & Continuing Calibration					
1. Did BFB meet tune criteria?		✓		✓	Time of injection: 10:34
2. Was the correct ICAL used for quantitation? Date and instrument ID of ICAL verified? (Check in both Chrom/Target and TALS)		✓		✓	
3. Do RFs meet minimum criteria? (624 – not method defined) (8260B-SPCCs = Chloromethane, 1,1-Dichloroethane, Bromoform ≥0.1; Chlorobenzene, 1,1,2,2-Tetrachloroethane ≥0.3) (8260C- all cmpds have min RFs defined in method/SOP)		✓		✓	If no, list details:
4. Does %Difference/%Drift meet criteria? (624: cmpd specific-Table 5 Q value) (8260B: ≤20% for CCCs; ≤20% for all cmpds/surrogates if CCCs not on list) (8260C: ≤20% for all cmpds/surrogates)		✓		✓	If no, list details: (8260B: %D high, samples ND?) (8260C: <20% of cmpds fail criteria & for failed cmpds RL standard verifies sensitivity for NDs?)
5. Are the Internal Standard area responses within method limits? (624 – not method defined) (8260B & 8260C, 50% - 200% of ICAL mid pt)		✓		✓	If no, list details:
6. Are the internal standard retention times within method limits? (624, ±30 sec of ICAL mid pt) (8260B, ±30 sec of ICAL mid pt; 8260C, ±10 sec of ICAL mid pt)		✓		✓	If no, list details:
7. Isomeric pairs checked for elution order and correct peak assignment? • Vinyl Acetate / Isopropyl Ether/2-Butanone • 1,2- & 1,3-& 1,4-Dichlorobenzene • Ethylbenzene / Xylenes • Xylenes / Styrene • 1,3,5- & 1,2,4-Trimethylbenzene / Isopropylbenzene / sec-butylbenzene • 2- & 4-Chlorotoluene / n-Propylbenzene / n-butylbenzene • MIBK / 2-Hexanone • Methyl Methacrylate / Ethyl Methacrylate • 1,1-Dichloroethene / cis-1,2- & trans-1,2-Dichloroethene		✓		✓	

LIMS Batch Number: 134565, 134566 134569	Worklist #: 36129	Instrument ID: HP12

• 1,2,3- & 1,2,4-Trichlorobenzene • 1,1-Dichloropropene / cis-1,3- & trans-1,3-Dichloropropene / 1,2,3-Trichloropropane • Chlorobenzene-d5 / 1,1,1,2-Tetrachloroethane • Trichlorofluoromethane / Freon 113 • Hexane / Vinyl Acetate (Chrom: View/Documents/Methods/Isomers)		✓		✓	
8 Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	

2nd Reviewer: VSB Review Date: 11.4.16

Comments:

TestAmerica Sacramento **GCMS Volatile CCV and Batch Data Review Checklist**

LIMS Batch Number: 134565 134566 134567	Worklist #: 36129	Instrument ID: HP12

Part 2: Sample/Batch Review

LIMS Batch Number: 134565 134566	Worklist #: 36129	Instrument ID: HP12
Analyst/1st Reviewer: SLS 10/27/16 134567	Prep Method (circle): 5030 5035-L 5035-H	Analytical Method (circle): 624 8260B 8260C Other AK101 MS, CAWFTM
QC Type (circle): Standard QAPP DOD Other-Explain		
Matrix (circle one): Non-potable Water Solid Waste	Circle: 5-ml Meth Ext 5g/10mL TCLP/SPLP	
Job #(s): 320-22936, 320-22926, 320-22951, 320-22887, 320-22995-2	Batch #(s): 134565, 134566, 134567	

A. Batch - Sample & QC Review					
1. All samples & QC injected within 12 hours of BFB? (or 24 hrs for 624?)		✓		✓	Time of last injection: 21:39
2. LCS (LFB) %recovery within limits? (524.2= 70-130%, 624=cmpd specific – Table 5 'P' value) (8260B & 8260C=lab statistical limits)		✓		✓	
3. MS/MSD (LFM/LFMD) %recoveries within limits? (524.2= SOP defined; 624=cmpd specific-Table 5 'P' value) (8260B & 8260C=lab statistical limits)		✓		✓	Ncm 68368
4. MS/MSD (LFM/LFMD) RPD within limits? (624=cmpd specific-Table 6 or SOP defined)		✓		✓	
5. Do all spiked samples (LCS, MS, MSD) yield positive detections? (Concentrations of ND require evaluation, correction or explanation.)		✓		✓	
6. Are all duplicate or spiked duplicate sample RPDs <75%? (Excessive RPDs (>75%) require evaluation, correction or explanation.)		✓		✓	
7. Target cmpds in Method Blank are below method required conc? (524.2<RL; 624<RL; 8260B & 8260C<MDL or SOP defined)		✓		✓	e.g.; Conc in blk<5% of sample conc Ncm 68364
8. Surrogates within %Recovery acceptance limits for all samples and QC?			✓	✓	☐ Samples reanalyzed ☐ Confirmed by reanalysis ☐ Insufficient sample for reanalysis ☐ Surrogates high, samples ND ☐ Visual Matrix interference-Client notified- Explain
9. Area of Internal Standards in all samples and QC within method limits? (524.2, -30% of CCV or -50% of ICAL mid pt) (624 – not method defined) (8260B & 8260C, 50% - 200% of ICAL mid pt)			✓	✓	☐ High IS response. Sample(s) rerun to confirm, or at dilution ☐ Low IS response. Sample(s) reanalyzed. Explain Ncm 68366

TestAmerica Sacramento **GCMS Volatile CCV and Batch Data Review Checklist**

LIMS Batch Number: 134565, 134568, 134567	Worklist #: 36129	Instrument ID: HP12

10. Are internal standards <0.5 min of IS in last CCV? (524.2, 3SD of RT in ICAL; 624, ±30 sec of ICAL mid pt) (8260B, ±30 sec of ICAL mid pt; 8260C, ±10 sec of ICAL mid pt)		✓		✓	
11. Was pH of all aqueous samples (except TCLP/SPLP) measured and documented?		✓		✓	
12. Were preparation & analysis Holding Times met for all samples in the batch? (524.2, pH>2=24 hr, pH<2=14 d) (624, pH<2=14 d , A&A, pH7= 3 days, 2-CEVE, pH7=14d) (8260B&C water pH<2=14d, pH>2=7d, 2-CEVE, pH7=14d) (8260B&C soil: 48 hr to preserve; 14 d to analysis) (TCLP/SPLP: 14d to leach; 14d from leach to analysis)		✓		✓	
13. Were acid sensitive compounds analyzed from unpreserved sample vials? (624 – Acrolein, Acrylonitrile , 2-CEVE) (8260B&C – 2-CEVE) (See CA-T-TM-001)		✓		✓	e.g.; not cmpd of concern for project
14. Were spectra for all detections evaluated for correct identification?		✓		✓	
15. Was a review performed of all chromatographic peaks that were deleted to verify removal was appropriate? (perform review in Chrom – not TALS)		✓		✓	
16. Were unidentified peaks reviewed for missed target compounds?		✓		✓	
17. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	Reasons: 1)Split Peak; 2)Undetected peak; 3)Tailing; 4)RT shift; 5)Wrong peak selected; 6)Baseline Correction; 7)Other-explain
18. Were Isomeric pairs checked for correct assignment? (verify against ICAL & CCV)		✓		✓	
19. Are weights, volumes and dilution factors correct?		✓		✓	
20. Were results from diluted & undiluted runs comparable?			✓	✓	
21. Dilution: Is highest target analyte >20% of calibration range?			✓	✓	NCM 68367
6. Other – Final Report Data Review					
22. Were all project requirements met?		✓		✓	
23. Samples checked to ensure all requested targets uploaded and reported correctly?		✓		✓	
24. Results for Samples/LCS/MS/MSD calculated/reported correctly in TALS and in final report? Are recovery & RPD limits present in final report?		✓		✓	(Reagents associated correctly?) (Limits in reference data?)
25. NCMs reviewed for applicability, correct references to batches/analytes, grammatical/typographical errors?		✓		✓	
26. Raw Data					
a. Unused data is clearly identified		✓		✓	
b. All crossed out data is initialed and dated		✓		✓	
c. Out of control QC is clearly identified		✓		✓	

TestAmerica Sacramento **GCMS Volatile CCV and Batch Data Review Checklist**

LIMS Batch Number: 134585	Worklist #: 36129	Instrument ID: HP12

134566, 134567

d. Any data that has a qualifier tick is commented on with appropriate action taken		✓		✓	
e. The first page of the run includes the filename, instrument, and analyst initials/signature		✓		✓	
30. Run Log					If Chrom worklist is used for runlog, all runs upload to Worklist
a. Unused data is clearly identified		✓		✓	
b. All crossed out data is initialed and dated		✓		✓	
c. Analyst initials/signature provided		✓		✓	
31. TALS Samples Tab					
a. LIMS Sample IDs / Containers are correct		✓		✓	
b. Method and matrix are correct		✓		✓	
c. Date and time match raw data		✓		✓	
d. Dilutions are correct		✓		✓	
e. Correct suffix designated (where applicable)		✓		✓	
32. TALS Worksheet Tab is complete and correct		✓		✓	
33. TALS Reagent Tab is complete and correct		✓		✓	
34. TALS QC Links Tab is correct		✓		✓	Missing QC? □ Check QC links to samples and duplicates □ Check cross batch links □ QC at second level review? Missing limits? □ Check QC links □ Check spike (reagents) associated with appropriate analytes □ check limits in ref. data-QA
35. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted		✓		✓	
b. All reported analytes are marked Primary or Secondary		✓		✓	
c. Flags are correctly applied (no flags missing)		✓		✓	□ Apply manually □ Failing condition not propogated to samples- Re-calc
36. TALS Batch Information Screen documentation is complete		✓		✓	
37. Historical Data Checker: Check historical data. Print charts for outliners. Take corrective action as appropriate.		✓		✓	
38. TALS Status set to appropriate review level		✓			□ Check for "yellow calculator"

2nd Reviewer: VSB Review Date: 11.4.16

Comments: _____

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 102616 Worklist Number: 36129
Instrument Name: HP12 Chrom Method: 8260B_HP12
Data Directory: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	MSV - AK101_MS - ICAL Raw Batch: 134565	MSV - 8260B CALUFTMS ICAL Raw Batch: 134566	MSV - 8260B - ICAL Raw Batch: 134567	MSV - 8260C - ICAL Raw Batch: 134568	MSV - 624_PREC ICAL Raw Batch: 134569	MSV - 8260C D5 - ICAL Raw Batch: 134570
# 1 RTC	# 1 RTC	# 1 RTC				
# 2 BFB	# 2 BFB	# 2 BFB	# 2 BFB	# 2 BFB	# 2 BFB	# 2 BFB
# 3 CCV GAS	# 3 CCV GAS	# 3 CCV GAS				
# 4 CCV HSL			# 4 CCV HSL	# 4 CCV HSL	# 4 CCV HSL	# 4 CCV HSL
# 5 LCS HSL			# 5 LCS HSL	# 5 LCS HSL	# 5 LCS HSL	# 5 LCS HSL
# 6 LCSD HSL			# 6 LCSD HSL	# 6 LCSD HSL	# 6 LCSD HSL	# 6 LCSD HSL
# 7 LCS GAS	# 7 LCS GAS	# 7 LCS GAS				
# 8 LCSD GAS	# 8 LCSD GAS	# 8 LCSD GAS				
# 9 COB			# 9 COB	# 9 COB	# 9 COB	# 9 COB
#10 MB	#10 MB	#10 MB	#10 MB	#10 MB	#10 MB	#10 MB
#11	#11					
320-22926-A-11	320-22926-A-11					#12
#12	#12					320-22751-A-13-A
320-22751-A-13-A	320-22751-A-13-A					
#13	#13					
320-22926-A-1	320-22926-A-1					
#14	#14					
320-22926-A-2	320-22926-A-2					
#15	#15					
320-22926-A-3	320-22926-A-3					
#16	#16	#21 CCV GAS				
320-22926-A-4	320-22926-A-4					
#17	#17					
320-22926-A-5	320-22926-A-5	#24	#24			
#18	#18	320-22936-A-1	320-22936-A-1			
320-22926-A-6	320-22926-A-6	#25	#25			
#19	#19	320-22936-A-10	320-22936-A-10			
320-22926-A-7	320-22926-A-7	#26	#26			
#20	#20	320-22936-A-11	320-22936-A-11			
320-22926-A-8	320-22926-A-8		#27			
#21 CCV GAS	#21 CCV GAS		320-22881-A-1	#31 CCVC HSL	#31 CCVC HSL	
#22	#22		#28			#31 CCVC HSL
320-22926-A-9	320-22926-A-9		320-22915-A-9			
#23	#23					
320-22926-A-10	320-22926-A-10	#32 CCV GAS				
#24		#33 COB	#31 CCVC HSL			
320-22936-A-1		#34 Samp 49				
#25			#33 COB			
320-22936-A-10			#34 Samp 49			
#26						
320-22936-A-11	#29					
#27	320-22926-A-3					
320-22881-A-1	MS					
#28	#30					
320-22915-A-9	320-22926-A-3					
#29	MSD					
320-22926-A-3						
MS	#32 CCV GAS					
#30						
320-22926-A-3						
MSD						
#31 CCVC HSL						
#32 CCV GAS						
#33 COB						
#34 Samp 49						

TestAmerica Laboratories
Worklist Run Log Report

seq ✓ LD 10-27-16
pH ✓ LD 10-27-16

Worklist Name: 102616 Worklist Num: 36129
Instrument: HP12 Method: 8260B_HP12
Batch Directory: \\ChromNA\Sacramento\ChromData\HP12\20161026-36129.b
Anaylysis Type: VOA Creator: Gipson, Karlaina A
Inj Volume: 5.00 Inj Vol Units: mL
Run Reagents:
MVISIM_00055, Amount Added: 5.00 , Units: uL
MV8260SUIM_00090, Amount Added: 5.00 , Units: uL

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Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract	pH	Std Lot	Comments
RTC	320-0036129-001	RTC	26-Oct-2016 10:07:30	RTC1026.D	1	1.0		voaWater			
BFB	320-0036129-002	BFB	26-Oct-2016 10:34:30	BFB1026.D	100	1.0		DirectInj			
CCV GAS	320-0036129-003	CCV	26-Oct-2016 10:54:30	GAS102601.D	2	1.0		voaWater			
CCV HSL	320-0036129-004	CCV	26-Oct-2016 11:16:30	HSL102601.D	3	1.0		voaWater			
LCS HSL	320-0036129-005	LCS	26-Oct-2016 11:39:30	HSL102602.D	4	1.0		voaWater			
LCSD HSL	320-0036129-006	LCSD	26-Oct-2016 12:01:30	HSL102603.D	5	1.0		voaWater			
LCS GAS	320-0036129-007	LCS	26-Oct-2016 12:23:30	GAS102602.D	6	1.0		voaWater			
LCSD GAS	320-0036129-008	LCSD	26-Oct-2016 12:45:30	GAS102603.D	7	1.0		voaWater			
COB	320-0036129-009	Client	26-Oct-2016 13:08:30	COB102601.D	8	1.0		voaWater			
MB	320-0036129-010	MB	26-Oct-2016 13:30:30	MB102601.D	9	1.0		voaWater	✓		
320-22926-A-11	320-0036129-011	Client	26-Oct-2016 13:53:30	SA102601.D	10	1.0	OT01-TB-102016	voaWater	✓		
320-22751-A-13-A	320-0036129-012	Client	26-Oct-2016 14:15:30	SA102602.D	11	1.0	16TA616-SD01-0	voaSoilML	✓		VSB 11.4.16
320-22926-A-1	320-0036129-013	Client	26-Oct-2016 14:37:30	SA102603.D	12	10.0	OT01-16-MW04	voaWater	✓		
320-22926-A-2	320-0036129-014	Client	26-Oct-2016 14:59:30	SA102604.D	13	10.0	OT01-16-MW01	voaWater	✓		
320-22926-A-3	320-0036129-015	Client	26-Oct-2016 15:21:30	SA102605.D	14	10.0	OT01-16-MW03	voaWater	✓		
320-22926-A-4	320-0036129-016	Client	26-Oct-2016 15:43:30	SA102606.D	15	10.0	OT01-16-MW05	voaWater	✓		
320-22926-A-5	320-0036129-017	Client	26-Oct-2016 16:05:30	SA102607.D	16	10.0	OT01-16-MW35	voaWater	✓		
320-22926-A-6	320-0036129-018	Client	26-Oct-2016 16:27:30	SA102608.D	17	10.0	OT01-16-MW02	voaWater	✓		
320-22926-A-7	320-0036129-019	Client	26-Oct-2016 16:49:30	SA102609.D	18	10.0	OT01-16-MW07	voaWater	✓		
320-22926-A-8	320-0036129-020	Client	26-Oct-2016 17:12:30	SA102610.D	19	10.0	OT01-16-MW15	voaWater	✓		
CCV GAS	320-0036129-021	CCV	26-Oct-2016 17:35:30	SA102611.D	20	1.0		voaWater	–		
320-22926-A-9	320-0036129-022	Client	26-Oct-2016 17:57:30	SA102612.D	21	10.0	OT01-16-MW17	voaWater	✓		
320-22926-A-10	320-0036129-023	Client	26-Oct-2016 18:19:30	SA102613.D	22	1.0	OT01-16-MW08	voaWater	✓		
320-22936-A-1	320-0036129-024	Client	26-Oct-2016 18:41:30	SA102614.D	23	1.0	010	voaWater	✓		
320-22936-A-10	320-0036129-025	Client	26-Oct-2016 19:04:30	SA102615.D	24	1.0	025	voaWater	✓		
320-22936-A-11	320-0036129-026	Client	26-Oct-2016 19:26:30	SA102616.D	25	1.0	026	voaWater	✓		
320-22881-A-1	320-0036129-027	Client	26-Oct-2016 19:48:30	SA102617.D	26	10.0	JBER-WW001	voaWater	✓		
320-22915-A-9	320-0036129-028	Client	26-Oct-2016 20:10:30	SA102618.D	27	10.0	IDW5820PFC	voaWater	✓		
320-22926-A-3 MS	320-0036129-029	MS	26-Oct-2016 20:32:30	SA102619.D	28	10.0	OT01-16-MW03	voaWater	✓		
320-22926-A-3 MSD	320-0036129-030	MSD	26-Oct-2016 20:55:30	SA102620.D	29	10.0	OT01-16-MW03	voaWater	✓		
CCVC HSL	320-0036129-031	CCVC	26-Oct-2016 21:17:30	SA102621.D	30	1.0		voaWater	–		
CCV GAS	320-0036129-032	CCV	26-Oct-2016 21:39:30	SA102622.D	31	1.0		voaWater	–		

seq ✓ h.D 10-27-16
pH NA h.D 10-27-16

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract	pH	Std Lot	Comments
COB	320-0036129-033	Client	26-Oct-2016 22:01:30	SA102623.D	32	1.0		voaWater			
Samp 49	320-0036129-034	Client									

WL#36129

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Sacramento
Dilution Tracking form 8260B/624

This form must be used when making dilutions.
All dilutions are based on removing sample from the original container; medium level soil and waste samples are removed from methanol extractions. Lab preserved low level soil samples can be diluted up to 5 times.

This form must be attached to worklist runlog/QC batch reports and submitted for sequence check.

Dilutions for aquatic samples (AQ)	Initial Volume (mL)	Final Volume (mL)
2X	25	50
5X	10	50
10X	5	50
Medium level soil samples (MeOH)	**Initial Volume (uL)**	**Final Volume (mL)**
2X	500	50
5X	200	50
10X	100	50

10-26-16 KG

Sample ID	Screen Level	Dilution Factor	Initial Amount	Final Amount	Analyst	Date
22926-1	20x	10x	5mL	50mL	KG	10-26-16
22926-2	20x	10x	5mL	50mL	KG	10-26-16
22926-3	20x	10x	5mL	50mL	KG	10-26-16
22926-4	20x	10x	5mL	50mL	KG	10-26-16
22926-5	20x	10x	5mL	50mL	KG	10-26-16
22926-6	20x	10x	5mL	50mL	KG	10-26-16
22926-7	20x	10x	5mL	50mL	KG	10-26-16
22926-8	20x	10x	5mL	50mL	KG	10-26-16
22926-9	20x	10x	5mL	50mL	KG	10-26-16
L2881-1	20x	10x	5mL	50mL	KG	10-26-16
22915-9	20x	10x	5mL	50mL	KG	10-26-16

Foaming

Foaming

22915

Job 22926 diluted Due to foaming
22881

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

GCMS Volatile ICAL Data Review Checklist

LIMS Batch Number: 132993 132994 132995 132996 132997 132998		Worklist #: WL# 35759
		Instrument ID: HP 12
Analyst/1st Reviewer: KG 10-18-16	Prep Method (circle): 5030 5035A 5035-H	Analytical Method (circle): Other_____ 624 8260B 8260C 8260B-CALUFT AK101
QC Type (circle): Standard QAPP DOD Other-Explain_____		
Matrix (circle one): Non-potable Water MeOH Solid Waste		Circle: 5-ml Meth Ext 5g/10mL TCLP/SPLP

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. Tune / Calibration					
1. Did BFB meet tune criteria?		✓		✓	
2. Were all standards injected within 12 hours of the BFB? (or 24 hours for 624?)		✓		✓	
3. ICAL date and instrument ID verified?		✓		✓	
4. Were ≥ 5 levels of each compound analyzed? (≥ 3 levels for 624) (≥ 5 levels of surrogate analyzed for DoD?)		✓		✓	
5. Was low level standard at or below RL?		✓		✓	
6. If calibration points removed, were reasons for removal documented? Did sufficient calibration points remain? (removal from middle of curve not allowed)		✓		✓	(e.g.; some points <RL removed)
7. Do the average RFs meet minimum RF requirements? (524.2 & 624 – not method defined) (8260B-SPCCs = Chloromethane, 1,1-Dichloroethane, Bromoform ≥0.1; Chlorobenzene, 1,1,2,2-Tetrachloroethane ≥0.3) (8260C- all cmpds have min RFs defined in method/SOP)		✓		✓	
8. Did the calibration %RSD meet method requirements? (524.2: ≤20% all cmpds/surrogates) (624: ≤35% all cmpds) (8260B: ≤30% for CCCs & ≤15% for all other cmpds/surrogates) (8260C: ≤20% for all cmpds/surrogates)		✓		✓	
9. Was a linear or quadratic regression fit used for analytes that exceeded the %RSD requirements?		✓		✓	
10. If regression fit used, is correlation coefficient ≥0.990?		✓		✓	
11. Does the low point of a linear regression fit meet the ±30% read-back criteria? (8260C required) (8260B, 624-recommended)		✓		✓	
12. At least 6 consecutive points used for quadratic curves?		✓		✓	
13. For quadratic – examine plot: Is a tangent's slope to the curve entirely positive or negative and continuous? (does not flatten or recurve within the range of calibration)		✓		✓	
14. For quadratic – evaluate curve fitting errors: Does each point fall within criteria when 'read-back' against the curve? (TA requirement – CA-Q-S-005);(recommended limits ±30% low point & ±20% all other points) (Chrom Report = Details of Calibration per Analyte)		✓		✓	

LIMS Batch Number:	Worklist #: WL # 35759	Instrument ID: MP12

15. Is the concentration intercept <RL for each cmpd? ("X" intercept in Chrom; "Y" intercept in Target)

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
16. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	Reasons: 1)Split Peak; 2)Undetected peak; 3)Tailing; 4)RT shift; 5)Wrong peak selected; 6)Baseline Correction; 7)Other-explain
17. Was the high point checked for detector saturation?		✓		✓	
18. Isomeric pairs checked for elution order/correct peak assignment? • Vinyl Acetate / Isopropyl Ether/2-Butanone • 1,2- & 1,3-& 1,4-Dichlorobenzene • Ethylbenzene / Xylenes • Xylenes / Styrene • 1,3,5- & 1,2,4-Trimethylbenzene / Isopropylbenzene / sec-butylbenzene • 2- & 4-Chlorotoluene / n-Propylbenzene / n-butylbenzene • MIBK / 2-Hexanone • Methyl Methacrylate / Ethyl Methacrylate • 1,1-Dichloroethene / cis-1,2- & trans-1,2-Dichloroethene • 1,2,3- & 1,2,4-Trichlorobenzene • 1,1-Dichloropropene / cis-1,3- & trans-1,3-Dichloropropene / 1,2,3-Trichloropropane • Chlorobenzene-d5 / 1,1,1,2-Tetrachloroethane • Trichlorofluoromethane / Freon 113 • Hexane / Vinyl Acetate (Chrom: View/Documents/Methods/Isomers)		✓		✓	
19. Was the 2nd source initial calibration verification standard (ICV) within required criteria? (624 = QCS method defined/Table5) (8260B = SOP defined; 8260C = ±30%, poor performers <50%) (DoD or QAPP specific = ±20%)		✓		✓	
20. If any criteria from items 1-18 were not met, was a NCM generated & approved by supervisor?		✓		✓	
21. Are all files and QC linked and processed correctly?		✓		✓	☐ Files linked properly to calibration levels? ☐ All points are in the most recent active calibration event? [Calibration Events – 'fix ICAL linkage' if needed] ☐ Runs linked to BFB? [QC links] ☐ Checklist & run log scanned, attached & assigned properly? ☐ Is the ICAL locked in TALS? (2nd Level Review) ☐ Is the ICAL locked in Chrome? (1st Level Review)

LIMS Batch Number:	Worklist #: WLH 35759	Instrument ID: MP12

2nd Reviewer: VSP Review Date: 10.20.16

Comments:

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 101716 HSL ICAL
Instrument: HP12
Batch Directory: \\ChromNA\Sacramento\ChromData\HP12\20161017-35759.b
Anaylysis Type: VOA
Inj Volume: 5.00
Run Reagents:
MVISIM_00054, Amount Added: 5.00 , Units: uL

Worklist Num: 35759
Method: 8260B_HP12
Creator: Gipson, Karlaina A
Inj Vol Units: mL

Seq ✓ DT 10-18-16
pH ✓

Lab ID	Worklist ID	Sample Type	Cal Lvl	Inj Date/Time	File Name	Vial	Dil Factor	Fract	pH	Std Lot	Comments
BFB	320-0035759-001	BFB	0	17-Oct-2016 14:22:30	BFB101705.D	100	1.0	DirectInj	NA		
COB	320-0035759-002	Client	0	17-Oct-2016 19:53:30	COB1016704.D	15	1.0	voaWater			
ICB	320-0035759-003	ICB	0	17-Oct-2016 20:15:30	ICBH101101.D	16	1.0	voaWater			
IC 1	320-0035759-004	IC	1	17-Oct-2016 20:59:30	H1017IC1.D	18	1.0	voaWater			
IC 2	320-0035759-005	IC	2	17-Oct-2016 21:22:30	H1017IC2.D	19	1.0	voaWater			
IC 3	320-0035759-006	IC	3	17-Oct-2016 21:44:30	H1017IC3.D	20	1.0	voaWater			
IC 4	320-0035759-007	IC	4	17-Oct-2016 22:07:30	H1017IC4.D	21	1.0	voaWater			
ICIS	320-0035759-008	ICIS	5	17-Oct-2016 22:29:30	H1017IC5.D	22	1.0	voaWater			
IC 5	320-0035759-009	IC	6	17-Oct-2016 22:51:30	H1017IC6.D	23	1.0	voaWater			
IC 7	320-0035759-010	IC	7	17-Oct-2016 23:13:30	H1017IC7.D	24	1.0	voaWater			
IC 8	320-0035759-011	IC	8	17-Oct-2016 23:36:30	H1017IC8.D	25	1.0	voaWater			
COB	320-0035759-012	Client	0	17-Oct-2016 23:58:30	COB101705.D	26	1.0	voaWater			
COB	320-0035759-013	Client	0	18-Oct-2016 00:20:30	COB101706.D	27	1.0	voaWater			
ICV HSL	320-0035759-014	ICV	0	18-Oct-2016 00:42:30	H1017ICV01.D	28	1.0	voaWater			
COB	320-0035759-015	Client									
Samp 21	320-0035759-016	Client									

11/14/2016

TestAmerica *Sacramento*

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC/MS Volatile TPH ICAL Data Review Checklist

LIMS Batch Number: 133013 133011	Work List: 357160	Instrument ID: HP12
Analyst/1st Reviewer: KG 10-18-16	Prep Method (circle): (5030) 5035-L (5035-H)	Analytical Method (circle): (8260B CA-LUFT) (AK101) Other___
QC Type (circle): (Standard) (QAPP) Other-Explain___		
Matrix (circle one): (Non-potable Water) (Solid) (Waste)		Circle: (5-ml) 20-ml (Meth Ext) TCLP/SPLP

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. Tune / Calibration					
1. Is an alkane standard run with ICAL to establish the RT?		✓		✓	
2. Is the RT established based on Method/State criteria? (Method 8260B CA-LUFT GRO beginning of C6 to end of C10) (AK102 beginning of C6 to beginning of C10)		✓		✓	
3. Are appropriate hydrocarbon standards used according to the Method or State requirements?		✓		✓	
4. Do the standards include the Method/State specific surrogate?		✓		✓	
5. Were ≥ 5 levels of each compound analyzed? (≥ 5 levels of surrogate analyzed for DoD?)		✓		✓	
6. Is the integration of the TPH horizontal along the baseline? Is the surrogate valley to valley, and subtracted from the TPH area? (Or according to Method /State requirements)		✓		✓	
7. Was low level standard at or below RL?		✓		✓	(e.g.; some points <RL removed)
8. If calibration points removed, were reasons for removal documented? Did sufficient calibration points remain? (removal from middle of curve not allowed)?		✓		✓	(e.g.; some points <RL removed)
9. Did the calibration %RSD meet method requirements? (8260B CA-LUFT ≤20% for for all cmpds/surrogates) (AK101: ≤25% for all cmpds/surrogates)		✓		✓	
10. Was a linear or quadratic regression fit used for analytes that exceeded the %RSD requirements?		✓		✓	
11. If regression fit used, is correlation coefficient ≥0.990?		✓		✓	
12. Does the low point of a linear regression fit meet the ±20% read-back criteria? (8000C)		✓		✓	
13. At least 6 consecutive points used for quadratic curves?	✓			✓	
14. For quadratic – examine plot: Is a tangent's slope to the curve entirely positive or negative and continuous? (does not flatten or recurve within the range of calibration)	✓			✓	
15. For quadratic – evaluate curve fitting errors: Does each point fall within criteria when 'read-back' against the curve? (TA requirement – CA-Q-S-005);(recommended limits ±30% low point & ±20% all other points) (Chrom	✓			✓	

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
Report = Details of Calibration per Analyte)		✓		✓	
16. Is the concentration intercept <RL for each cmpd? ("X" intercept in Chrom; "Y" intercept in Target)		✓		✓	
17. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	Reasons: 1)Split Peak; 2)Undetected peak; 3)Tailing; 4)RT shift; 5)Wrong peak selected; 6)Baseline Correction; 7)Other-explain
18. Was the high point checked for detector saturation?		✓		✓	
19. Was the 2nd source initial calibration verification standard (ICV) within required criteria? (8015C = SOP defined; AK101 = ±25%) (DoD or QAPP specific = ±20%)		✓		✓	
20. ICAL date and instrument ID verified?		✓		✓	
21. If any criteria from items 1-20 were not met, was a NCM generated & approved by supervisor?		✓		✓	
22. Are all files and QC linked and processed correctly?		✓		✓	□ Files linked properly to calibration levels? □ All points are in the most recent active calibration event? [Calibration Events –'Fix ICAL linkage' if needed] □ Runs linked to Alkane marker? [QC links] □ Checklist & run log scanned, attached & assigned properly? □ Is the ICAL locked in TALS?

2nd Reviewer: KSP Review Date: 10.20.16

Comments: _____

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 101716B GAS ICAL
Worklist Num: 35760
Instrument: HP12
Method: 8260B_HP12
Batch Directory: \\ChromNA\Sacramento\ChromData\HP12\20161017-35760.b
Anaylysis Type: VOA
Creator: Gipson, Karlaina A
Inj Volume: 5.00
Inj Vol Units: mL
Run Reagents:
MV8260SUIM_00087, Amount Added: 6.00 , Units: uL
MVISIM_00054, Amount Added: 5.00 , Units: uL

pH ✓ 3-9 ✓ DT 10-18-16

Lab ID	Worklist ID	Sample Type	Cal Lvl	Inj Date/Time	File Name	Vial	Dil Factor	Fract	pH	Std Lot	Comments
BFB	320-0035760-001	BFB	0	17-Oct-2016 14:22:30	BFB101705.D	100	1.0	DirectInj			
RTC	320-0035760-002	RTC	0	17-Oct-2016 14:40:30	RTC101701.D	1	1.0	voaWater			
COB	320-0035760-003	Client	0	17-Oct-2016 15:02:30	COB101701.D	2	1.0	voaWater			
ICB	320-0035760-004	ICB	0	17-Oct-2016 15:24:30	ICBG101701.D	3	1.0	voaWater			
IC 1 GAS	320-0035760-005	IC	1	17-Oct-2016 15:46:30	G1017IC1.D	4	1.0	voaWater			
IC 2 GAS	320-0035760-006	IC	2	17-Oct-2016 16:09:30	G1017IC2.D	5	1.0	voaWater			
IC 3 GAS	320-0035760-007	IC	3	17-Oct-2016 16:31:30	G1017IC3.D	6	1.0	voaWater			
IC 4 GAS	320-0035760-008	IC	4	17-Oct-2016 16:54:30	G1017IC4.D	7	1.0	voaWater			
IC 5 GAS	320-0035760-009	IC	5	17-Oct-2016 17:16:30	G1017IC5A.D	8	1.0	voaWater			
IC 6 GAS	320-0035760-010	IC	6	17-Oct-2016 17:38:30	G1017IC6A.D	9	1.0	voaWater			
IC 7 GAS	320-0035760-011	IC	7	17-Oct-2016 18:01:30	G1017IC7A.D	10	1.0	voaWater			
IC 8 GAS	320-0035760-012	IC	8	17-Oct-2016 18:23:30	G1017IC8A.D	11	1.0	voaWater			
COB	320-0035760-013	Client	0	17-Oct-2016 18:46:30	COB101702.D	12	1.0	voaWater			
ICV GAS	320-0035760-014	ICV	0	17-Oct-2016 19:31:30	G1017ICV01A.D	14	1.0	voaWater			
COB	320-0035760-015	Client									

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Method 8270 DOD

Semivolatile Compounds (GC/MS) by Method 8270/DOD

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): HP-5MS ID: 0.25(mm)

Client Sample ID	Lab Sample ID	2FP #	PHL #	NBZ #	FBP #	TBP #	TPHL #
JBER-WW001	320-22881-1	38	24	67	67	80	53
	MB 320-134119/1-A	49	33	75	77	77	86
	LCS 320-134119/2-A	55	36	76	82	94	91
	LCSD 320-134119/3-A	56	37	79	80	92	90

	QC LIMITS
2FP = 2-Fluorophenol (Surr)	19-119
PHL = Phenol-d5 (Surr)	10-50
NBZ = Nitrobenzene-d5 (Surr)	44-120
FBP = 2-Fluorobiphenyl (Surr)	44-119
TBP = 2,4,6-Tribromophenol (Surr)	43-140
TPHL = Terphenyl-d14 (Surr)	50-134

Column to be used to flag recovery values

FORM II 8270D

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: S102711.D

Lab ID: LCS 320-134119/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Acenaphthene	100	76.3	76	47-122	
Acenaphthylene	100	74.4	74	41-130	
Anthracene	100	78.1	78	57-123	
Azobenzene	100	75.2	75	61-116	
Benzo[a]anthracene	100	83.9	84	58-125	
Benzo[b]fluoranthene	100	84.5	84	53-131	
Benzo[k]fluoranthene	100	81.4	81	57-129	
Benzoic acid	100	28.8 J	29	10-40	
Benzo[g,h,i]perylene	100	85.7	86	50-134	
Benzo[a]pyrene	100	86.9	87	54-128	
Benzyl alcohol	100	68.8	69	31-112	
Bis(2-chloroethoxy)methane	100	74.5	74	48-120	
Bis(2-chloroethyl)ether	100	71.6	72	43-118	
2,2'-oxybis[1-chloropropane]	100	82.2	82	37-130	
Bis(2-ethylhexyl) phthalate	100	88.7	89	55-135	
4-Bromophenyl phenyl ether	100	79.7	80	55-124	
Butyl benzyl phthalate	100	87.6	88	53-134	
Carbazole	100	80.4	80	60-122	
4-Chloroaniline	100	73.7	74	33-117	
4-Chloro-3-methylphenol	100	82.7	83	52-119	
2-Chlorophenol	100	72.1	72	38-117	
2-Chloronaphthalene	100	77.1	77	40-116	
4-Chlorophenyl phenyl ether	100	83.3	83	53-121	
Chrysene	100	83.5	84	59-123	
Dibenz(a,h)anthracene	100	84.9	85	51-134	
Dibenzofuran	100	75.7	76	53-118	
Di-n-butyl phthalate	100	82.0	82	59-127	
1,2-Dichlorobenzene	100	67.1	67	32-111	
1,3-Dichlorobenzene	100	65.5	66	28-110	
1,4-Dichlorobenzene	100	66.2	66	29-112	
3,3'-Dichlorobenzidine	100	85.8	86	27-129	
2,4-Dichlorophenol	100	82.3	82	47-121	
Diethyl phthalate	100	86.2	86	56-125	
Dimethyl phthalate	100	85.7	86	45-127	
4,6-Dinitro-2-methylphenol	200	166	83	44-137	
2,4-Dinitrophenol	200	134	67	23-143	
2,4-Dinitrotoluene	100	91.3	91	57-128	
2,6-Dinitrotoluene	100	86.7	87	57-124	
Di-n-octyl phthalate	100	88.3	88	51-140	
Fluoranthene	100	81.8	82	57-128	
Fluorene	100	77.2	77	52-124	
Hexachlorobenzene	100	79.9	80	53-125	

Column to be used to flag recovery and RPD values

FORM III 8270D

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: S102711.D

Lab ID: LCS 320-134119/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Hexachlorobutadiene	100	65.7	66	22-124	
Hexachloroethane	100	62.0	62	21-115	
Indeno[1,2,3-cd]pyrene	100	92.7	93	52-134	
Isophorone	100	77.9	78	42-124	
2-Methylnaphthalene	100	71.2	71	40-121	
2-Methylphenol	100	70.1	70	30-117	
3 & 4 Methylphenol	100	65.1	65	29-110	
Naphthalene	100	69.6	70	40-121	
2-Nitroaniline	100	90.0	90	55-127	
3-Nitroaniline	100	80.0	80	41-128	
4-Nitroaniline	100	89.9	90	62-126	
Nitrobenzene	100	78.6	79	45-121	
2-Nitrophenol	100	84.2	84	47-123	
4-Nitrophenol	200	113	56	21-80	
N-Nitrosodimethylamine	100	48.4	48	29-78	
N-Nitrosodiphenylamine	100	77.5	77	51-123	
N-Nitrosodi-n-propylamine	100	75.6	76	49-119	
Pentachlorophenol	200	173	86	35-138	
Phenanthrene	100	78.0	78	59-120	
Phenol	100	37.7	38	25-59	
Pyrene	100	84.8	85	57-126	
1,2,4-Trichlorobenzene	100	71.5	71	29-116	
2,4,5-Trichlorophenol	100	89.1	89	53-123	
2,4,6-Trichlorophenol	100	90.5	91	50-125	

Column to be used to flag recovery and RPD values

FORM III 8270D

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: S102712.D

Lab ID: LCSD 320-134119/3-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Acenaphthene	100	78.4	78	3	20	47-122	
Acenaphthylene	100	74.2	74	0	20	41-130	
Anthracene	100	79.0	79	1	20	57-123	
Azobenzene	100	76.6	77	2	20	61-116	
Benzo[a]anthracene	100	84.9	85	1	20	58-125	
Benzo[b]fluoranthene	100	84.4	84	0	20	53-131	
Benzo[k]fluoranthene	100	80.9	81	1	20	57-129	
Benzoic acid	100	33.6 J	34	16	20	10-40	
Benzo[g,h,i]perylene	100	85.6	86	0	20	50-134	
Benzo[a]pyrene	100	86.4	86	1	20	54-128	
Benzyl alcohol	100	73.2	73	6	20	31-112	
Bis(2-chloroethoxy)methane	100	76.6	77	3	20	48-120	
Bis(2-chloroethyl)ether	100	76.1	76	6	20	43-118	
2,2'-oxybis[1-chloropropane]	100	87.5	87	6	20	37-130	
Bis(2-ethylhexyl) phthalate	100	89.1	89	0	20	55-135	
4-Bromophenyl phenyl ether	100	80.2	80	1	20	55-124	
Butyl benzyl phthalate	100	88.2	88	1	20	53-134	
Carbazole	100	80.5	80	0	20	60-122	
4-Chloroaniline	100	74.4	74	1	20	33-117	
4-Chloro-3-methylphenol	100	85.1	85	3	20	52-119	
2-Chlorophenol	100	77.3	77	7	20	38-117	
2-Chloronaphthalene	100	78.1	78	1	20	40-116	
4-Chlorophenyl phenyl ether	100	82.3	82	1	20	53-121	
Chrysene	100	83.9	84	0	20	59-123	
Dibenz(a,h)anthracene	100	85.1	85	0	20	51-134	
Dibenzofuran	100	75.8	76	0	20	53-118	
Di-n-butyl phthalate	100	82.4	82	1	20	59-127	
1,2-Dichlorobenzene	100	70.6	71	5	20	32-111	
1,3-Dichlorobenzene	100	68.3	68	4	20	28-110	
1,4-Dichlorobenzene	100	70.8	71	7	20	29-112	
3,3'-Dichlorobenzidine	100	85.0	85	1	20	27-129	
2,4-Dichlorophenol	100	86.3	86	5	20	47-121	
Diethyl phthalate	100	85.6	86	1	20	56-125	
Dimethyl phthalate	100	84.8	85	1	20	45-127	
4,6-Dinitro-2-methylphenol	200	179	89	7	20	44-137	
2,4-Dinitrophenol	200	158	79	17	20	23-143	
2,4-Dinitrotoluene	100	90.1	90	1	20	57-128	
2,6-Dinitrotoluene	100	90.2	90	4	20	57-124	
Di-n-octyl phthalate	100	88.1	88	0	20	51-140	
Fluoranthene	100	82.6	83	1	20	57-128	
Fluorene	100	78.1	78	1	20	52-124	
Hexachlorobenzene	100	80.2	80	0	20	53-125	

Column to be used to flag recovery and RPD values

FORM III 8270D

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: S102712.D

Lab ID: LCSD 320-134119/3-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Hexachlorobutadiene	100	68.8	69	5	20	22-124	
Hexachloroethane	100	65.7	66	6	20	21-115	
Indeno[1,2,3-cd]pyrene	100	88.6	89	4	20	52-134	
Isophorone	100	79.7	80	2	20	42-124	
2-Methylnaphthalene	100	73.4	73	3	20	40-121	
2-Methylphenol	100	74.6	75	6	20	30-117	
3 & 4 Methylphenol	100	67.9	68	4	20	29-110	
Naphthalene	100	72.6	73	4	20	40-121	
2-Nitroaniline	100	90.4	90	0	20	55-127	
3-Nitroaniline	100	75.9	76	5	20	41-128	
4-Nitroaniline	100	86.6	87	4	20	62-126	
Nitrobenzene	100	82.5	83	5	20	45-121	
2-Nitrophenol	100	88.4	88	5	20	47-123	
4-Nitrophenol	200	115	58	2	20	21-80	
N-Nitrosodimethylamine	100	51.1	51	5	20	29-78	
N-Nitrosodiphenylamine	100	78.1	78	1	20	51-123	
N-Nitrosodi-n-propylamine	100	81.0	81	7	20	49-119	
Pentachlorophenol	200	177	89	3	20	35-138	
Phenanthrene	100	79.7	80	2	20	59-120	
Phenol	100	40.1	40	6	20	25-59	
Pyrene	100	86.0	86	1	20	57-126	
1,2,4-Trichlorobenzene	100	76.3	76	6	20	29-116	
2,4,5-Trichlorophenol	100	87.1	87	2	20	53-123	
2,4,6-Trichlorophenol	100	91.5	91	1	20	50-125	

Column to be used to flag recovery and RPD values

FORM III 8270D

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab File ID: S102710.D Lab Sample ID: MB 320-134119/1-A

Matrix: Water Date Extracted: 10/24/2016 10:38

Instrument ID: SV5 Date Analyzed: 10/27/2016 15:19

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-134119/2-A	S102711.D	10/27/2016 15:47
	LCSD 320-134119/3-A	S102712.D	10/27/2016 16:15
JBER-WW001	320-22881-1	S102713.D	10/27/2016 16:43

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab File ID: DFT1005.D DFTPP Injection Date: 10/05/2016

Instrument ID: SV5 DFTPP Injection Time: 10:14

Analysis Batch No.: 130823

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0 % of mass 198	44.3	
68	Less than 2.0 % of mass 69	0.7	(1.7) 1
69	Mass 69 relative abundance	42.2	
70	Less than 2.0 % of mass 69	0.2	(0.5) 1
127	40.0 - 60.0 % of mass 198	49.3	
197	Less than 1.0 % of mass 198	0.0	
198	Base Peak, 100 % relative abundance	100.0	
199	5.0- 9.0 % of mass 198	7.0	
275	10.0 - 30.0 % of mass 198	23.2	
365	Greater than 1.0 % of mass 198	2.5	
441	Present but less than mass 443	11.3	(80.8) 3
442	Greater than 40.0 % of mass 198	72.4	
443	17.0 - 23.0 % of mass 442	14.0	(19.4) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 320-130823/2	ODD1005A.D	10/05/2016	10:35
	IC 320-130823/3	ODD1005B.D	10/05/2016	11:03
	IC 320-130823/4	ODD1005C.D	10/05/2016	11:31
	IC 320-130823/5	ODD1005D.D	10/05/2016	11:58
	IC 320-130823/6	ODD1005E.D	10/05/2016	12:26
	IC 320-130823/7	ODD1005F.D	10/05/2016	12:53
	IC 320-130823/8	ODD1005G.D	10/05/2016	13:21
	IC 320-130823/9	ODD1005H.D	10/05/2016	13:49
	IC 320-130823/10	ODD1005I.D	10/05/2016	14:16
	ICV 320-130823/11	ODD1005.D	10/05/2016	14:46
	IC 320-130823/12	HSL1005A.D	10/05/2016	15:14
	IC 320-130823/13	HSL1005B.D	10/05/2016	15:41
	IC 320-130823/14	HSL1005C.D	10/05/2016	16:09
	IC 320-130823/15	HSL1005D.D	10/05/2016	16:37
	IC 320-130823/16	HSL1005E.D	10/05/2016	17:04
	IC 320-130823/17	HSL1005F.D	10/05/2016	17:32
	ICIS 320-130823/18	HSL1005G.D	10/05/2016	18:00
	IC 320-130823/19	HSL1005H.D	10/05/2016	18:27
	IC 320-130823/20	HSL1005I.D	10/05/2016	18:55
	IC 320-130823/21	HSL1005J.D	10/05/2016	19:23
	ICV 320-130823/22	HSL1005.D	10/05/2016	19:58

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab File ID: DFT1027.D DFTPP Injection Date: 10/27/2016

Instrument ID: SV5 DFTPP Injection Time: 09:52

Analysis Batch No.: 134817

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0 % of mass 198	51.7	
68	Less than 2.0 % of mass 69	0.8	(1.8) 1
69	Mass 69 relative abundance	44.1	
70	Less than 2.0 % of mass 69	0.3	(0.6) 1
127	40.0 - 60.0 % of mass 198	52.2	
197	Less than 1.0 % of mass 198	0.5	
198	Base Peak, 100 % relative abundance	100.0	
199	5.0- 9.0 % of mass 198	7.3	
275	10.0 - 30.0 % of mass 198	25.3	
365	Greater than 1.0 % of mass 198	2.9	
441	Present but less than mass 443	11.8	(81.0) 3
442	Greater than 40.0 % of mass 198	73.9	
443	17.0 - 23.0 % of mass 442	14.5	(19.6) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCV 320-134817/2	HSL1027.D	10/27/2016	10:14
	CCV 320-134817/3	ODD1027.D	10/27/2016	10:42
	MB 320-134119/1-A	S102710.D	10/27/2016	15:19
	LCS 320-134119/2-A	S102711.D	10/27/2016	15:47
	LCSD 320-134119/3-A	S102712.D	10/27/2016	16:15
JBER-WW001	320-22881-1	S102713.D	10/27/2016	16:43
	CCVC 320-134817/17	HSL1005L.D	10/27/2016	17:42
	CCVC 320-134817/18	ODD1005L.D	10/27/2016	18:09

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Sample No.: ICIS 320-130823/18 Date Analyzed: 10/05/2016 18:00

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm)

Lab File ID (Standard): HSL1005G.D Heated Purge: (Y/N) N

Calibration ID: 25605

		DCBd4		NPT		ANT	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		195577	5.59	775410	6.53	570070	7.91
UPPER LIMIT		391154	6.09	1550820	7.03	1140140	8.41
LOWER LIMIT		97789	5.09	387705	6.03	285035	7.41
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-130823/22		227038	5.59	892164	6.54	485385	7.91
CCV 320-134817/2		254749	5.67	965204	6.61	580346	7.99
CCV 320-134817/3		255072	5.66	929308	6.61	560313	7.99
MB 320-134119/1-A		265901	5.66	986199	6.61	596813	7.99
LCS 320-134119/2-A		265060	5.66	1003620	6.61	597225	7.99
LCSD 320-134119/3-A		265313	5.67	1012507	6.61	607040	7.99
320-22881-1	JBER-WW001	267108	5.66	981005	6.61	582806	7.99
CCVC 320-134817/17		254306	5.66	957039	6.61	572420	7.99
CCVC 320-134817/18		272618	5.66	988103	6.61	607386	7.99

DCBd4 = 1,4-Dichlorobenzene-d4
NPT = Naphthalene-d8
ANT = Acenaphthene-d10

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Sample No.: ICIS 320-130823/18 Date Analyzed: 10/05/2016 18:00

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm)

Lab File ID (Standard): HSL1005G.D Heated Purge: (Y/N) N

Calibration ID: 25605

		PHN		CRY		PRY	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		1004883	9.24	990336	12.40	828975	15.89
UPPER LIMIT		2009766	9.74	1980672	12.90	1657950	16.39
LOWER LIMIT		502442	8.74	495168	11.90	414488	15.39
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-130823/22		819205	9.24	794126	12.41	839605	15.89
CCV 320-134817/2		1021368	9.33	1048561	12.57	1085073	16.17
CCV 320-134817/3		976327	9.32	1003164	12.56	991316	16.16
MB 320-134119/1-A		1054446	9.32	1096194	12.55	1112067	16.16
LCS 320-134119/2-A		1085730	9.33	1076826	12.57	1104582	16.17
LCSD 320-134119/3-A		1086897	9.33	1074327	12.57	1108311	16.17
320-22881-1	JBER-WW001	1017782	9.32	1055619	12.55	1059567	16.16
CCVC 320-134817/17		1005010	9.33	1044430	12.56	1063807	16.17
CCVC 320-134817/18		1073053	9.32	1113473	12.56	1143162	16.16

PHN = Phenanthrene-d10
CRY = Chrysene-d12
PRY = Perylene-d12

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: JBER-WW001 | Lab Sample ID: 320-22881-1

Matrix: Water | Lab File ID: S102713.D

Analysis Method: 8270D | Date Collected: 10/20/2016 10:40

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1055.9(mL) | Date Analyzed: 10/27/2016 16:43

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
83-32-9	Acenaphthene	2.8	U	9.5	2.8	1.0
208-96-8	Acenaphthylene	2.8	U	9.5	2.8	1.0
120-12-7	Anthracene	2.8	U	9.5	2.8	0.95
103-33-3	Azobenzene	2.8	U	9.5	2.8	0.95
56-55-3	Benzo[a]anthracene	2.8	U	9.5	2.8	0.95
205-99-2	Benzo[b]fluoranthene	2.8	U	9.5	2.8	1.1
207-08-9	Benzo[k]fluoranthene	2.8	U	9.5	2.8	0.91
65-85-0	Benzoic acid	47	U	71	47	19
191-24-2	Benzo[g,h,i]perylene	2.8	U	9.5	2.8	1.3
50-32-8	Benzo[a]pyrene	2.8	U	9.5	2.8	0.95
100-51-6	Benzyl alcohol	5.7	U	9.5	5.7	2.5
111-91-1	Bis(2-chloroethoxy)methane	2.8	U	9.5	2.8	0.95
111-44-4	Bis(2-chloroethyl)ether	2.8	U	9.5	2.8	1.4
108-60-1	2,2'-oxybis[1-chloropropane]	2.8	U	9.5	2.8	1.2
117-81-7	Bis(2-ethylhexyl) phthalate	1.4	J	9.5	2.8	0.95
101-55-3	4-Bromophenyl phenyl ether	2.8	U	9.5	2.8	1.0
85-68-7	Butyl benzyl phthalate	2.8	U	9.5	2.8	1.3
86-74-8	Carbazole	2.8	U	9.5	2.8	1.1
106-47-8	4-Chloroaniline	5.7	U	9.5	5.7	1.9
59-50-7	4-Chloro-3-methylphenol	5.7	U	9.5	5.7	1.9
95-57-8	2-Chlorophenol	5.7	U	9.5	5.7	1.5
91-58-7	2-Chloronaphthalene	2.8	U	9.5	2.8	1.2
7005-72-3	4-Chlorophenyl phenyl ether	2.8	U	9.5	2.8	1.0
218-01-9	Chrysene	2.8	U	9.5	2.8	0.95
53-70-3	Dibenz(a,h)anthracene	5.7	U	9.5	5.7	1.9
132-64-9	Dibenzofuran	2.8	U	9.5	2.8	1.0
84-74-2	Di-n-butyl phthalate	2.8	U	9.5	2.8	1.0
95-50-1	1,2-Dichlorobenzene	2.8	U	9.5	2.8	1.4
541-73-1	1,3-Dichlorobenzene	2.8	U	9.5	2.8	1.4
106-46-7	1,4-Dichlorobenzene	2.8	U	9.5	2.8	1.3
91-94-1	3,3'-Dichlorobenzidine	2.8	U	47	2.8	0.91
120-83-2	2,4-Dichlorophenol	5.7	U	9.5	5.7	2.5
84-66-2	Diethyl phthalate	2.8	U	9.5	2.8	0.88
105-67-9	2,4-Dimethylphenol	5.7	U	9.5	5.7	2.1

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: JBER-WW001 | Lab Sample ID: 320-22881-1

Matrix: Water | Lab File ID: S102713.D

Analysis Method: 8270D | Date Collected: 10/20/2016 10:40

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1055.9(mL) | Date Analyzed: 10/27/2016 16:43

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
131-11-3	Dimethyl phthalate	2.8	U	9.5	2.8	0.83
534-52-1	4,6-Dinitro-2-methylphenol	5.7	U	57	5.7	2.1
51-28-5	2,4-Dinitrophenol	47	U	57	47	19
121-14-2	2,4-Dinitrotoluene	5.7	U	9.5	5.7	1.9
606-20-2	2,6-Dinitrotoluene	5.7	U	9.5	5.7	1.9
117-84-0	Di-n-octyl phthalate	2.8	U	9.5	2.8	1.4
206-44-0	Fluoranthene	2.8	U	9.5	2.8	0.95
86-73-7	Fluorene	2.8	U	9.5	2.8	0.88
118-74-1	Hexachlorobenzene	2.8	U	9.5	2.8	1.3
87-68-3	Hexachlorobutadiene	2.8	U	9.5	2.8	1.2
67-72-1	Hexachloroethane	2.8	U	9.5	2.8	1.3
193-39-5	Indeno[1,2,3-cd]pyrene	9.5	U	14	9.5	3.2
78-59-1	Isophorone	2.8	U	9.5	2.8	0.95
91-57-6	2-Methylnaphthalene	2.8	U	9.5	2.8	1.4
95-48-7	2-Methylphenol	2.8	U	9.5	2.8	0.88
15831-10-4	3 & 4 Methylphenol	2.8	U	9.5	2.8	1.1
91-20-3	Naphthalene	2.8	U	9.5	2.8	1.2
88-74-4	2-Nitroaniline	5.7	U	47	5.7	1.9
99-09-2	3-Nitroaniline	2.8	U	47	2.8	1.3
100-01-6	4-Nitroaniline	2.8	U	47	2.8	1.4
98-95-3	Nitrobenzene	5.7	U	9.5	5.7	1.5
88-75-5	2-Nitrophenol	5.7	U	9.5	5.7	1.8
100-02-7	4-Nitrophenol	19	U	57	19	5.8
62-75-9	N-Nitrosodimethylamine	2.8	U	14	2.8	0.91
86-30-6	N-Nitrosodiphenylamine	2.8	U	9.5	2.8	0.95
621-64-7	N-Nitrosodi-n-propylamine	2.8	U	9.5	2.8	1.3
87-86-5	Pentachlorophenol	19	U	57	19	4.7
85-01-8	Phenanthrene	2.8	U	9.5	2.8	0.95
108-95-2	Phenol	2.8	U	9.5	2.8	1.0
129-00-0	Pyrene	2.8	U	9.5	2.8	1.3
120-82-1	1,2,4-Trichlorobenzene	2.8	U	9.5	2.8	1.3
95-95-4	2,4,5-Trichlorophenol	5.7	U	9.5	5.7	1.9
88-06-2	2,4,6-Trichlorophenol	5.7	U	9.5	5.7	1.9

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: JBER-WW001 | Lab Sample ID: 320-22881-1

Matrix: Water | Lab File ID: S102713.D

Analysis Method: 8270D | Date Collected: 10/20/2016 10:40

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1055.9(mL) | Date Analyzed: 10/27/2016 16:43

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	80		43-140
321-60-8	2-Fluorobiphenyl (Surr)	67		44-119
367-12-4	2-Fluorophenol (Surr)	38		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	67		44-120
4165-62-2	Phenol-d5 (Surr)	24		10-50
1718-51-0	Terphenyl-d14 (Surr)	53		50-134

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102713.D
Lims ID: 320-22881-F-1-A
Client ID: JBER-WW001
Sample Type: Client
Inject. Date: 27-Oct-2016 16:43:30 ALS Bottle#: 13 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-22881-f-1-a
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:02:28 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:02:45

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.660	5.660	0.000	100	267108	40.0	
* 2 Naphthalene-d8	136	6.612	6.612	0.000	100	981005	40.0	
* 3 Acenaphthene-d10	164	7.987	7.987	0.000	100	582806	40.0	
* 4 Phenanthrene-d10	188	9.324	9.324	0.000	100	1017782	40.0	
* 5 Chrysene-d12	240	12.549	12.555	-0.006	100	1055619	40.0	
* 6 Perylene-d12	264	16.160	16.160	0.000	100	1059567	40.0	
$ 7 2-Fluorophenol	112	4.510	4.510	0.000	0	176713	19.0	
$ 8 Phenol-d5	99	5.350	5.355	-0.005	0	137192	12.2	
$ 10 Nitrobenzene-d5	82	6.072	6.077	-0.005	0	362408	33.4	
$ 11 2-Fluorobiphenyl (Surr)	172	7.409	7.409	0.000	0	629760	33.7	
$ 12 2,4,6-Tribromophenol	330	8.677	8.682	-0.005	0	105946	39.9	
$ 13 Terphenyl-d14	244	10.902	10.907	-0.005	0	563427	26.6	
149 Bis(2-ethylhexyl) phthalat	149	12.501	12.512	-0.011	0	31775	1.46	

Reagents:

MS8270IS_00014 Amount Added: 20.00 Units: uL Run Reagent

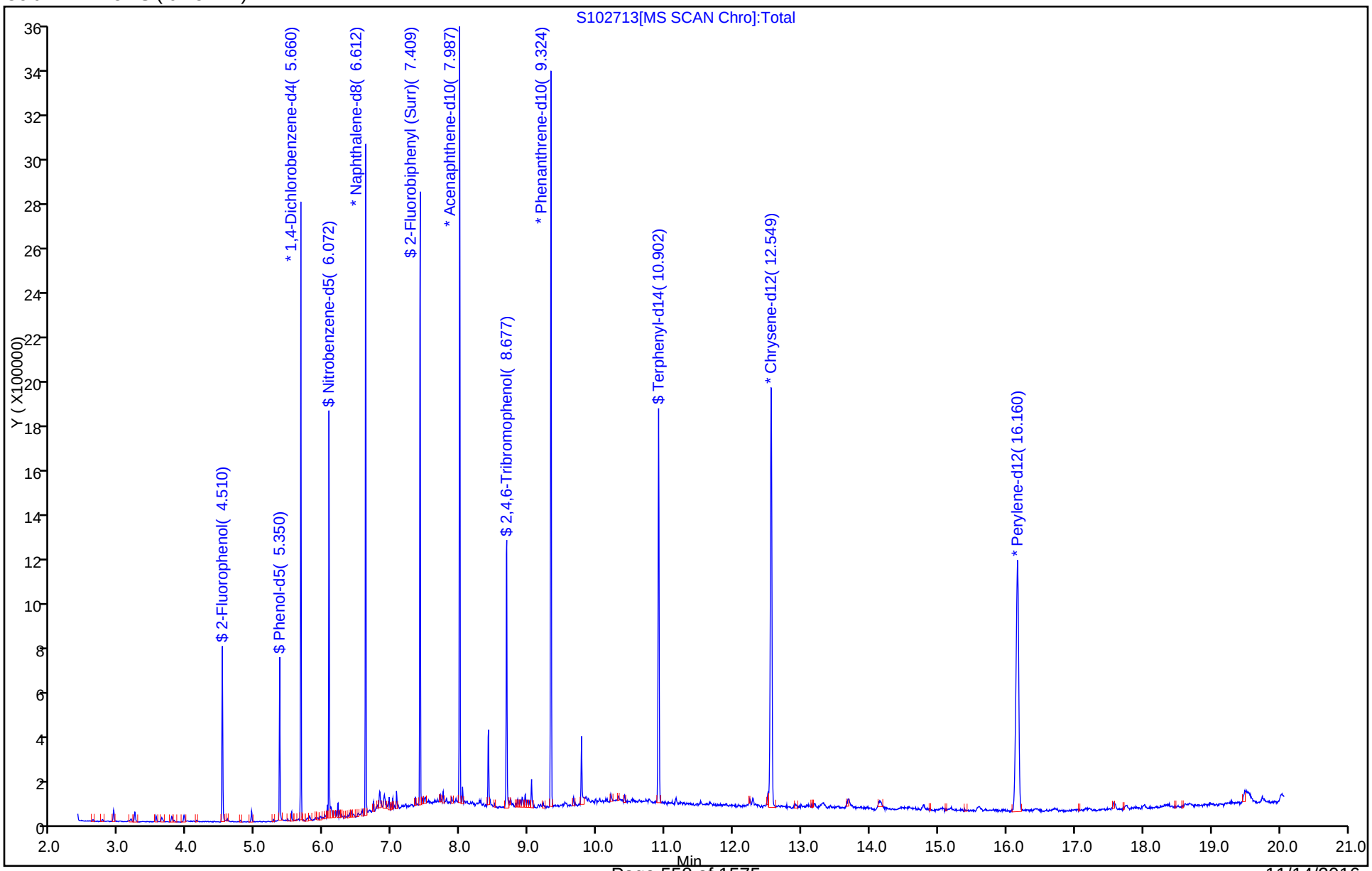
Report Date: 28-Oct-2016 14:02:46 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102713.D

Injection Date:	27-Oct-2016 16:43:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	320-22881-F-1-A	Lab Sample ID:	320-22881-1	Worklist Smp#:	16
Client ID:	JBER-WW001				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	13
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102713.D
Lims ID: 320-22881-F-1-A
Client ID: JBER-WW001
Sample Type: Client
Inject. Date: 27-Oct-2016 16:43:30 ALS Bottle#: 13 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-22881-f-1-a
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:02:28 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:02:45

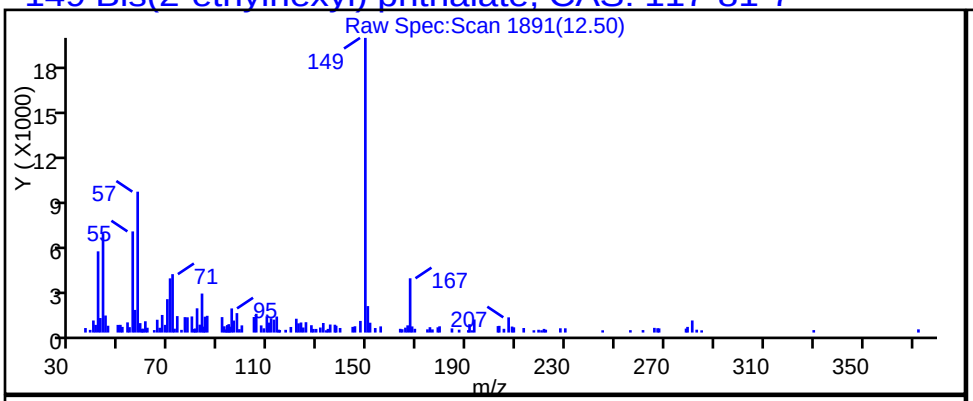
Compound	Amount Added	Amount Recovered	% Rec.
$ 7 2-Fluorophenol	50.0	19.0	38.04
$ 8 Phenol-d5	50.0	12.2	24.34
$ 10 Nitrobenzene-d5	50.0	33.4	66.84
$ 11 2-Fluorobiphenyl (Surr)	50.0	33.7	67.33
$ 12 2,4,6-Tribromophenol	50.0	39.9	79.74
$ 13 Terphenyl-d14	50.0	26.6	53.18

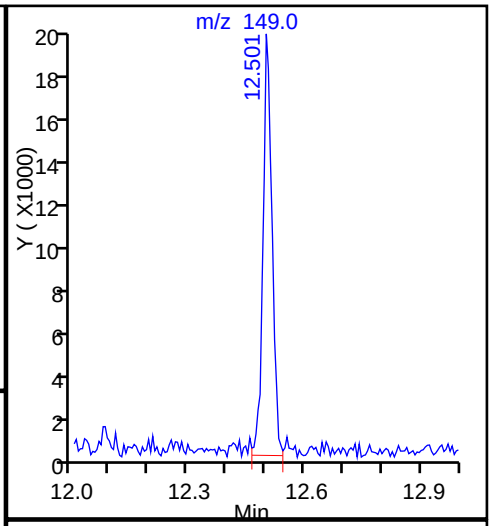
TestAmerica Sacramento

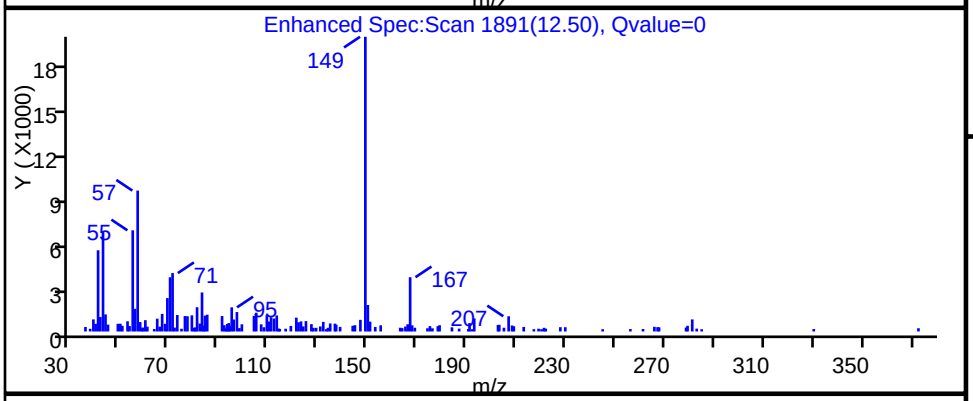
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102713.D

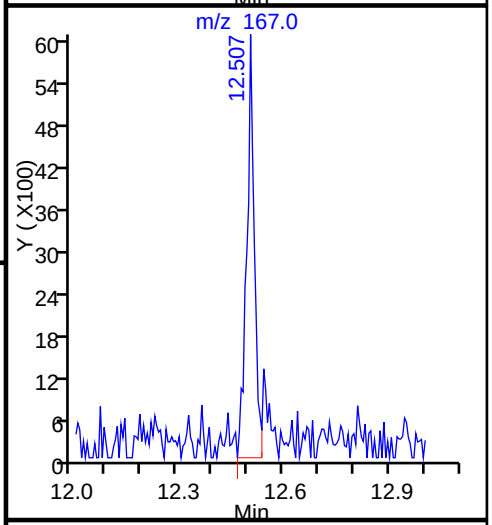
Injection Date:	27-Oct-2016 16:43:30	Instrument ID:	SV5		
Lims ID:	320-22881-F-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:		ALS Bottle#:	13	Worklist Smp#:	16
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		
Column:	HP-5MS (0.25 mm)	Detector	MS SCAN		

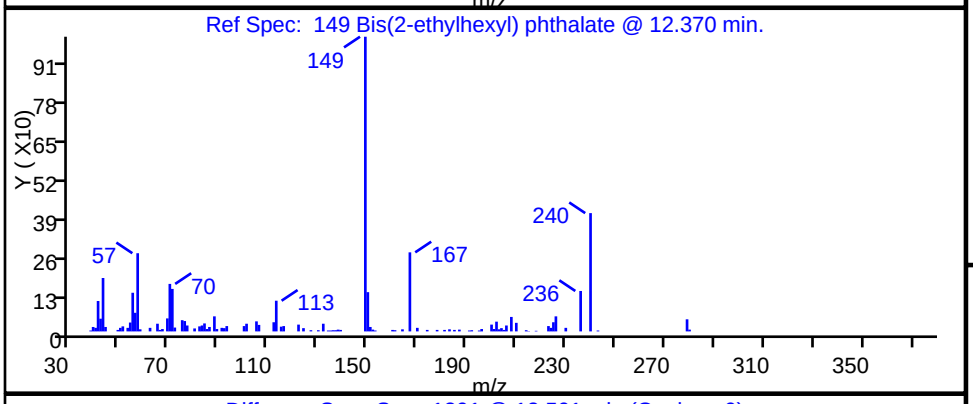
149 Bis(2-ethylhexyl) phthalate, CAS: 117-81-7

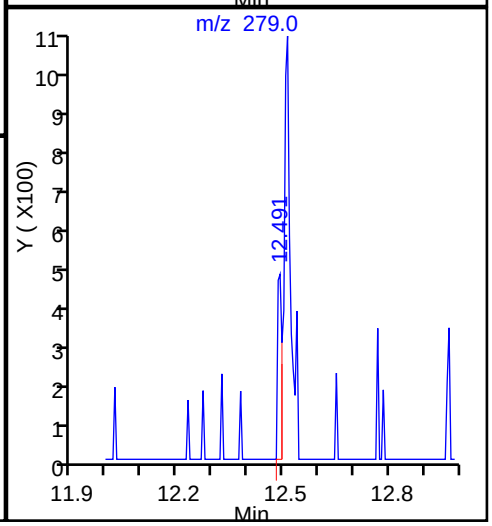


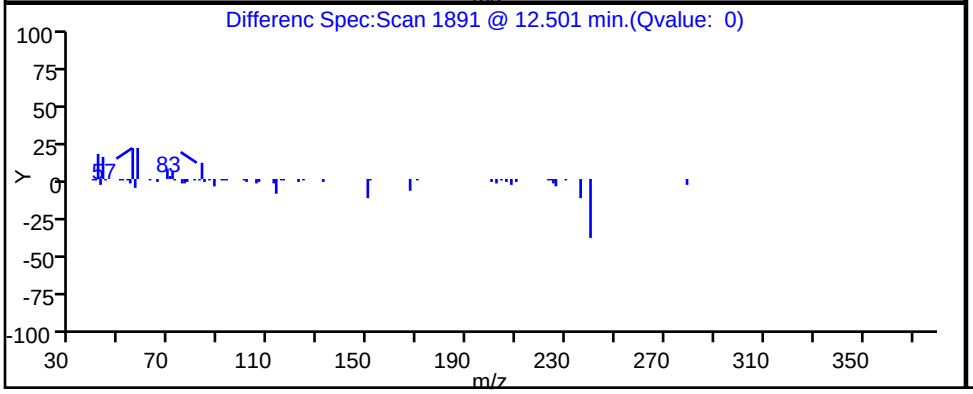












FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 10:35 Calibration End Date: 10/05/2016 14:16 Calibration ID: 25600

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-130823/2	ODD1005A.D
Level 2	IC 320-130823/3	ODD1005B.D
Level 3	IC 320-130823/4	ODD1005C.D
Level 4	IC 320-130823/5	ODD1005D.D
Level 5	IC 320-130823/6	ODD1005E.D
Level 6	IC 320-130823/7	ODD1005F.D
Level 7	IC 320-130823/8	ODD1005G.D
Level 8	IC 320-130823/9	ODD1005H.D
Level 9	IC 320-130823/10	ODD1005I.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
Benzoic acid	+++++ 0.2013	0.1150 0.2277	0.1278 0.2365	0.1635 0.2338	0.1910	Qua2	-0.643	0.1700	0.0002483		0.0100				0.9970		0.9900
3,3'-Dichlorobenzidine	+++++ 0.4582	0.4322 0.4324	0.4251 0.4339	0.4794 0.4252	0.4547	Ave		0.4426			0.0100	4.4		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 10:35 Calibration End Date: 10/05/2016 14:16 Calibration ID: 25600

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-130823/2	ODD1005A.D
Level 2	IC 320-130823/3	ODD1005B.D
Level 3	IC 320-130823/4	ODD1005C.D
Level 4	IC 320-130823/5	ODD1005D.D
Level 5	IC 320-130823/6	ODD1005E.D
Level 6	IC 320-130823/7	ODD1005F.D
Level 7	IC 320-130823/8	ODD1005G.D
Level 8	IC 320-130823/9	ODD1005H.D
Level 9	IC 320-130823/10	ODD1005I.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
Benzoic acid	NPT	Qua2	+++++ 699840	26663 1141570	58796 1354323	159568 1407073	435826	+++++ 150	10.0 200	20.0 240	40.0 320	100
3,3'-Dichlorobenzidine	CRY	Ave	+++++ 736986	45763 942294	83445 1349972	186270 1401277	543435	+++++ 75.0	5.00 100	10.0 120	20.0 160	50.0

Curve Type Legend:

Ave = Average ISTD
Qua2 = Quadratic 1/conc^2 ISTD

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005A.D
Lims ID: IC CS-1 ODD
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 05-Oct-2016 10:35:30 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-1 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:46:34 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 11:09:46

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	98	250299	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	99	914567	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	527886	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	930138	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	97	841737	40.0	40.0	
* 6 Perylene-d12	264	15.887	15.881	0.006	99	818819	40.0	40.0	
21 1,4-Oxathiane	46	4.591	4.590	0.001	39	21559	NC	NC	
25 Benzaldehyde	106	5.222	5.222	0.000	37	17129	2.00	2.53	
37 Indene	115	5.789	5.788	0.001	45	70573	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	51	14643	NC	NC	M
53 Benzoic acid	105	6.313	6.350	-0.037	72	6445	4.00	5.40	M
56 Thiodiglycol	61	6.452	6.436	0.016	51	10692	NC	NC	M
66 Caprolactam	113	6.805	6.837	-0.032	1	4394	NC	NC	
118 Atrazine	200	8.907	8.912	-0.005	20	10627	NC	NC	
135 Benzidine	184	10.512	10.517	-0.005	51	27575	2.00	1.51	
147 3,3'-Dichlorobenzidine	252	12.298	12.303	-0.005	35	23107	2.00	2.48	M

QC Flag Legend

Processing Flags
NC - Not Calibrated
Review Flags
M - Manually Integrated

Reagents:

MSODDL1_00008 Amount Added: 1.00 Units: mL

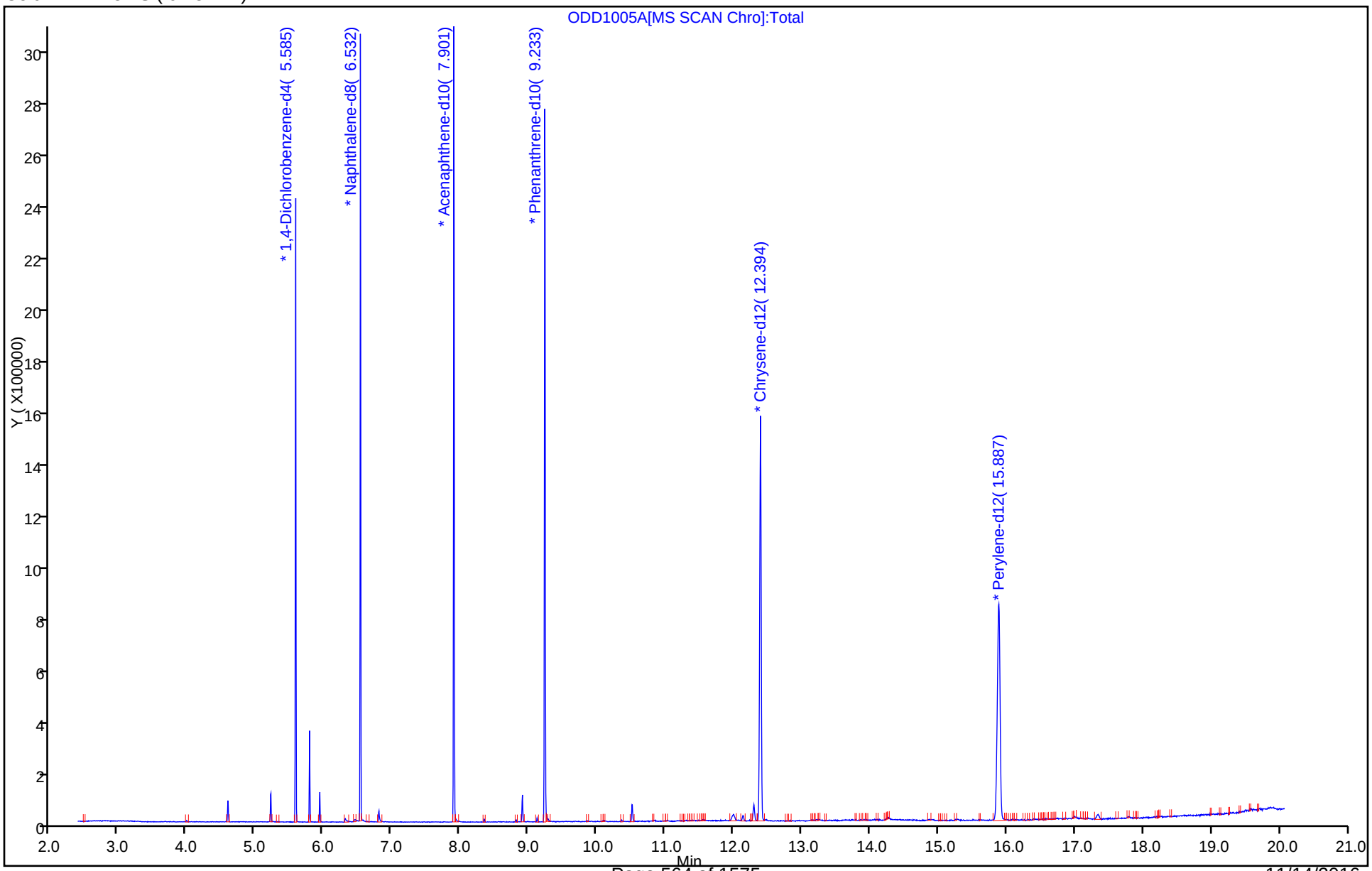
Report Date: 05-Oct-2016 14:46:37 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005A.D

Injection Date:	05-Oct-2016 10:35:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-1 ODD			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	1
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

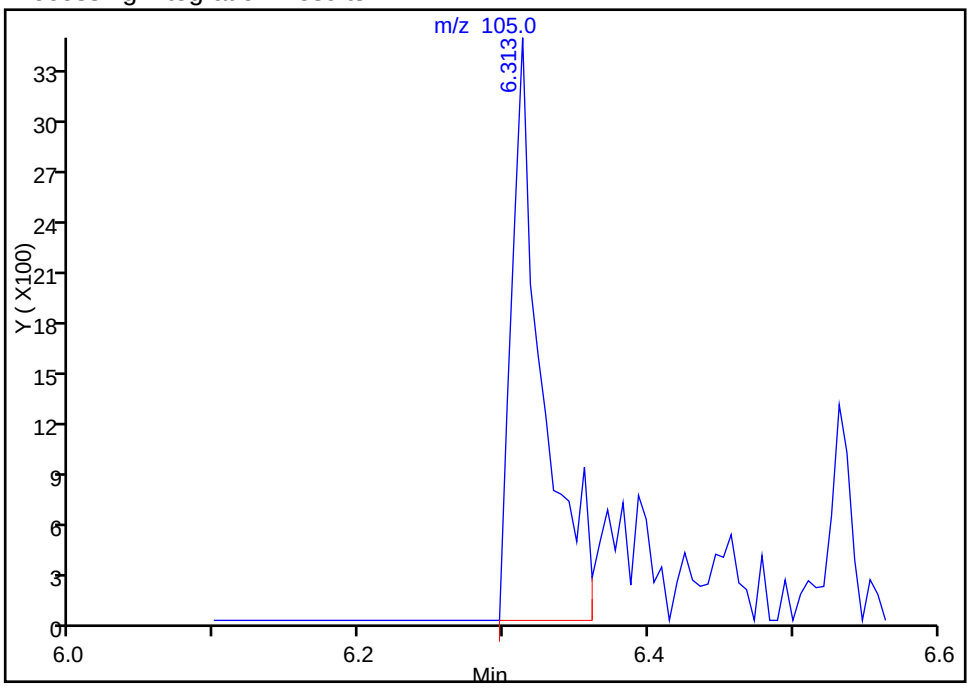
Data File:	\\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005A.D				
Injection Date:	05-Oct-2016 10:35:30	Instrument ID:	SV5		
Lims ID:	IC CS-1 ODD				
Client ID:					
Operator ID:		ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		
Column:	HP-5MS (0.25 mm)	Detector	MS SCAN		

53 Benzoic acid, CAS: 65-85-0

Signal: 1

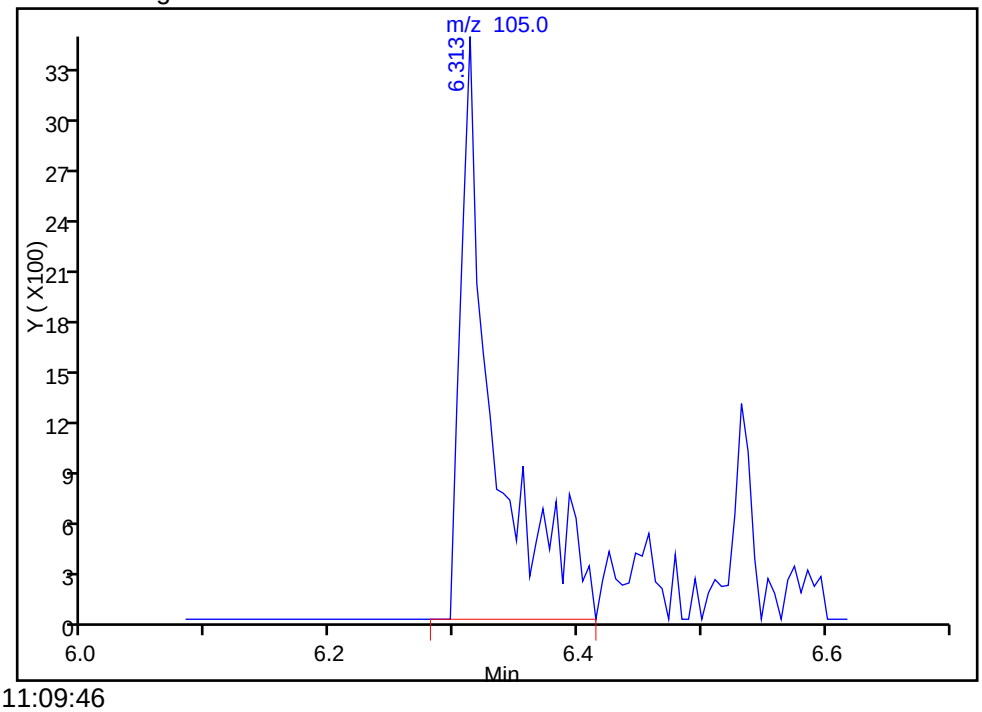
Processing Integration Results

RT: 6.31
Area: 5059
Amount: 4.000000
Amount Units: ug/ml



Manual Integration Results

RT: 6.31
Area: 6445
Amount: 5.399734
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 11:09:46

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

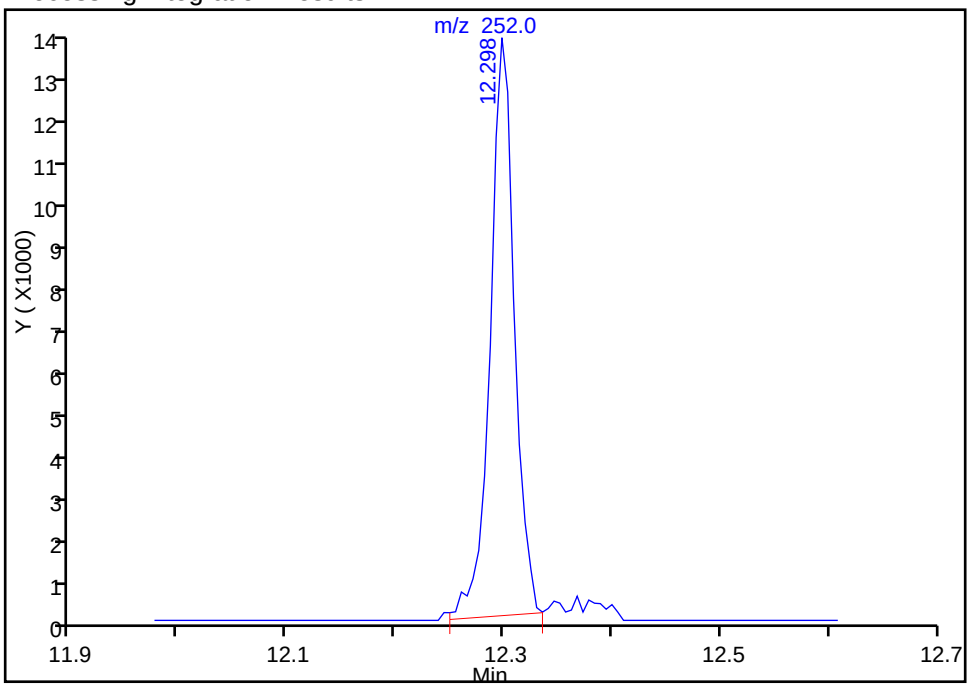
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005A.D
Injection Date: 05-Oct-2016 10:35:30 Instrument ID: SV5
Lims ID: IC CS-1 ODD
Client ID:
Operator ID: ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

147 3,3'-Dichlorobenzidine, CAS: 91-94-1

Signal: 1

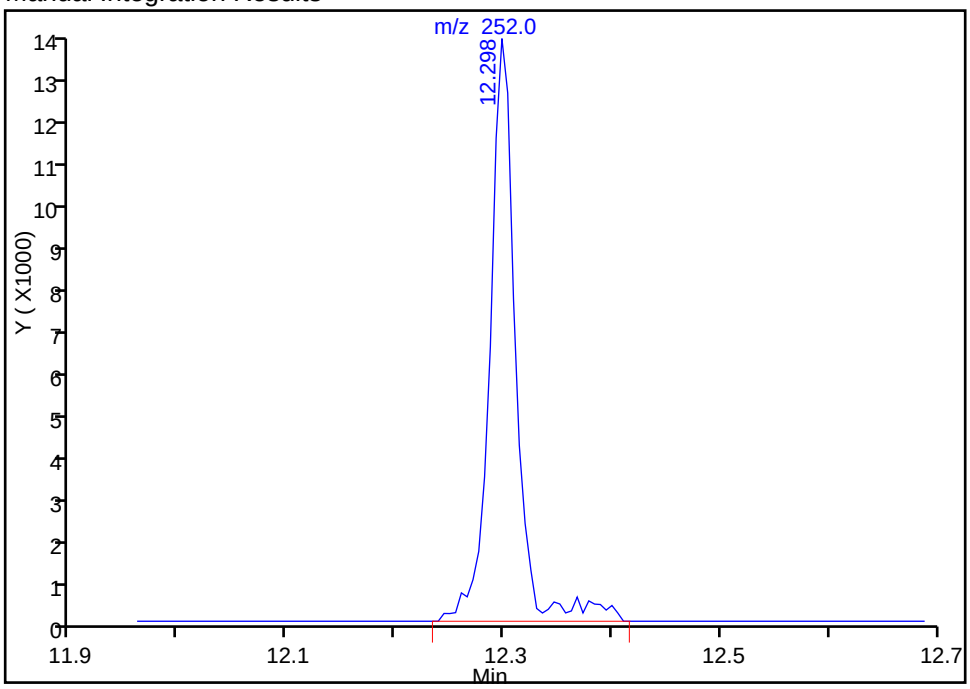
Processing Integration Results

RT: 12.30
Area: 21069
Amount: 2.000000
Amount Units: ug/ml



Manual Integration Results

RT: 12.30
Area: 23107
Amount: 2.480876
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 11:09:46
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005B.D
Lims ID: IC CS-2 ODD
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 05-Oct-2016 11:03:30 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-2 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:46:41 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 11:29:14

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	99	271495	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	99	927501	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	543479	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	804939	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	98	847158	40.0	40.0	
* 6 Perylene-d12	264	15.882	15.881	0.001	99	813370	40.0	40.0	
21 1,4-Oxathiane	46	4.591	4.590	0.001	38	49882	NC	NC	
25 Benzaldehyde	106	5.222	5.222	0.000	37	41130	5.00	5.61	
37 Indene	115	5.789	5.788	0.001	45	173392	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	51	36026	NC	NC	
53 Benzoic acid	105	6.308	6.350	-0.042	62	26663	10.0	10.4	M
56 Thiodiglycol	61	6.441	6.436	0.005	52	32658	NC	NC	M
66 Caprolactam	113	6.805	6.837	-0.032	41	14307	NC	NC	M
118 Atrazine	200	8.907	8.912	-0.005	20	21774	NC	NC	
135 Benzidine	184	10.512	10.517	-0.005	51	104428	5.00	5.69	
147 3,3'-Dichlorobenzidine	252	12.298	12.303	-0.005	35	45763	5.00	4.88	

QC Flag Legend

Processing Flags
NC - Not Calibrated
Review Flags
M - Manually Integrated

Reagents:

MSODDL2_00008 Amount Added: 1.00 Units: mL

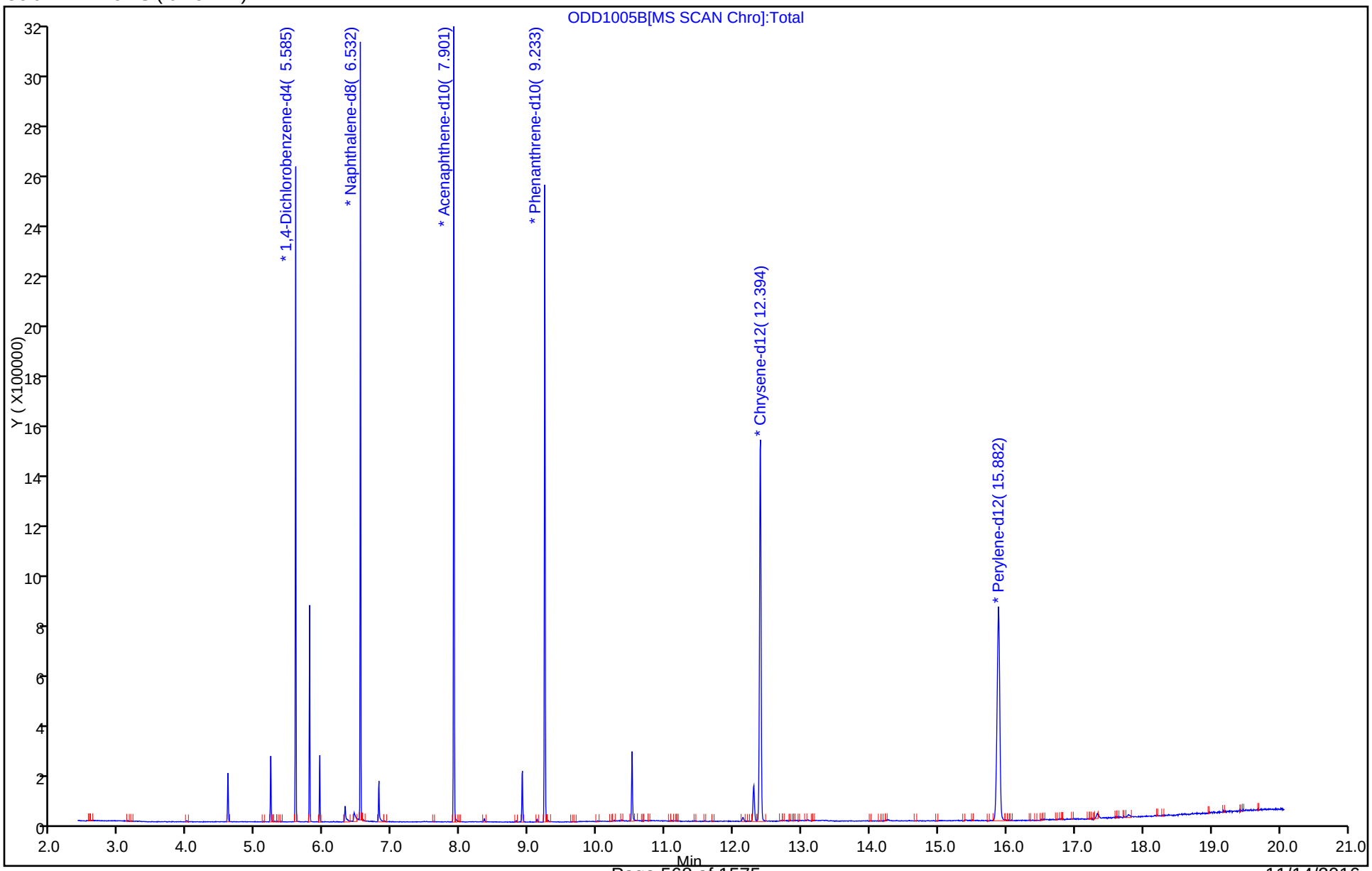
Report Date: 05-Oct-2016 14:46:43 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005B.D

Injection Date:	05-Oct-2016 11:03:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-2 ODD			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

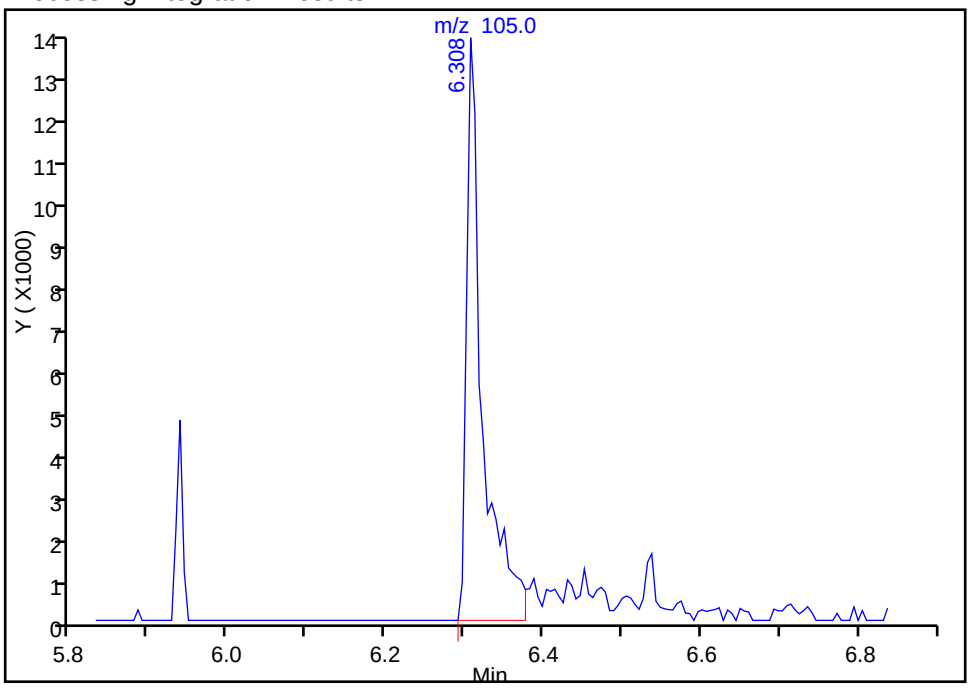
Data File:	\\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005B.D				
Injection Date:	05-Oct-2016 11:03:30	Instrument ID:	SV5		
Lims ID:	IC CS-2 ODD				
Client ID:					
Operator ID:		ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		
Column:	HP-5MS (0.25 mm)	Detector	MS SCAN		

53 Benzoic acid, CAS: 65-85-0

Signal: 1

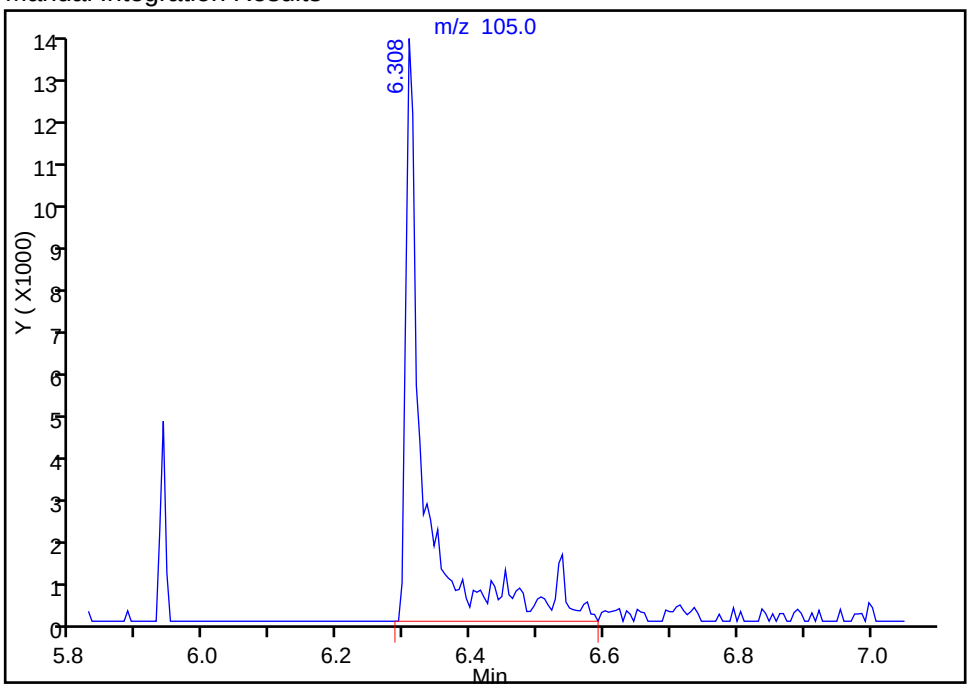
Processing Integration Results

RT: 6.31
Area: 19454
Amount: 10.869867
Amount Units: ug/ml



Manual Integration Results

RT: 6.31
Area: 26663
Amount: 10.391952
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 11:29:14

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005C.D
Lims ID: IC CS-3 ODD
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 05-Oct-2016 11:31:30 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-3 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:46:46 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 12:23:04

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	99	240495	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	99	920302	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	539572	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	927278	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	98	785269	40.0	40.0	
* 6 Perylene-d12	264	15.887	15.881	0.006	99	884789	40.0	40.0	
21 1,4-Oxathiane	46	4.590	4.590	0.000	38	84802	NC	NC	
25 Benzaldehyde	106	5.216	5.222	-0.006	37	67251	10.0	10.4	
37 Indene	115	5.788	5.788	0.000	49	297437	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	50	65341	NC	NC	
53 Benzoic acid	105	6.313	6.350	-0.037	63	58796	20.0	18.3	M
56 Thiodiglycol	61	6.436	6.436	0.000	52	54767	NC	NC	M
66 Caprolactam	113	6.805	6.837	-0.032	41	23295	NC	NC	
118 Atrazine	200	8.907	8.912	-0.005	20	40329	NC	NC	
135 Benzidine	184	10.511	10.517	-0.006	51	146090	10.0	8.59	
147 3,3'-Dichlorobenzidine	252	12.292	12.303	-0.011	36	83445	10.0	9.60	

QC Flag Legend

Processing Flags
NC - Not Calibrated
Review Flags
M - Manually Integrated

Reagents:

MSODDL3_00008 Amount Added: 1.00 Units: mL

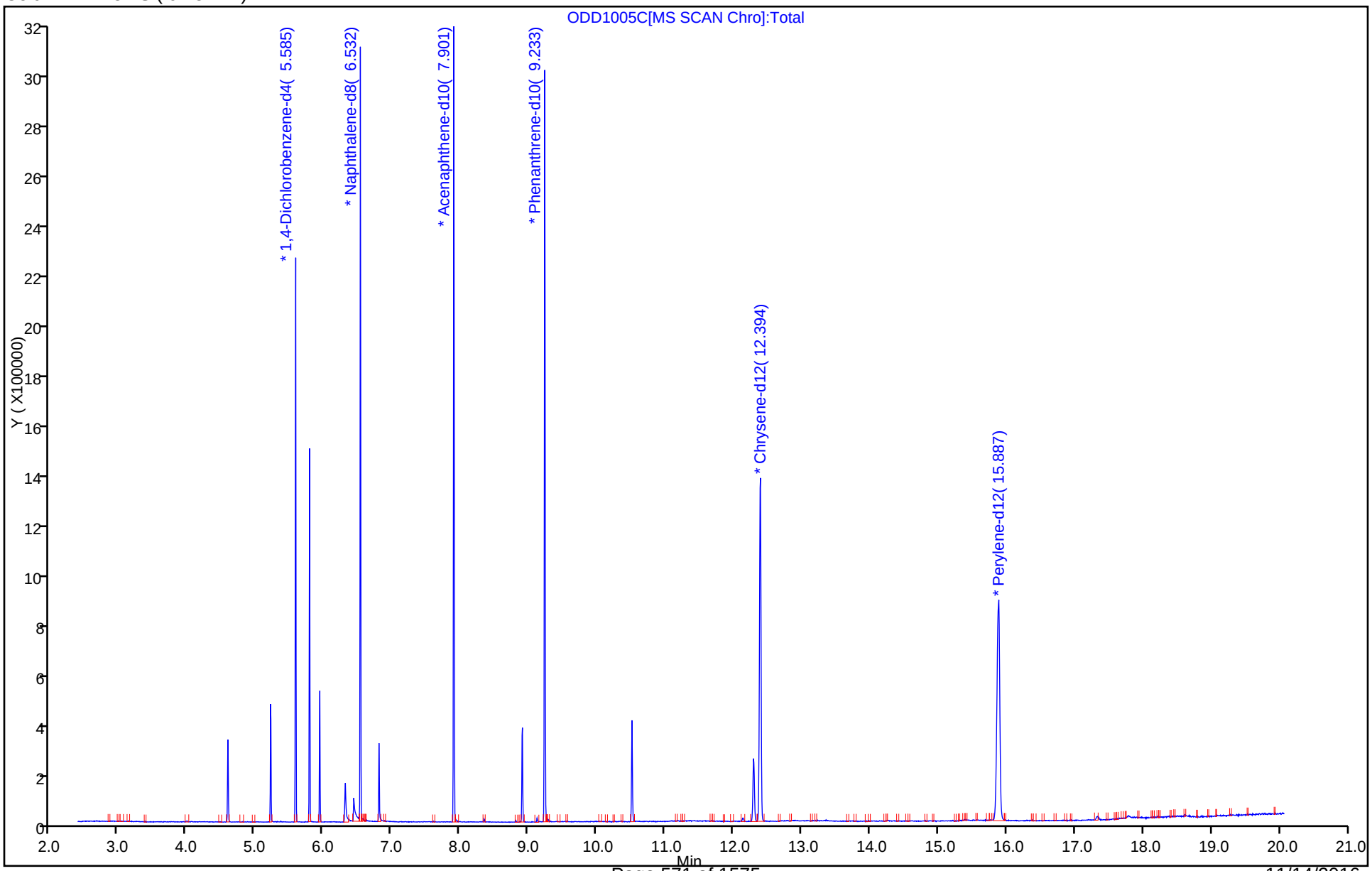
Report Date: 05-Oct-2016 14:46:47 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005C.D

Injection Date:	05-Oct-2016 11:31:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-3 ODD			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

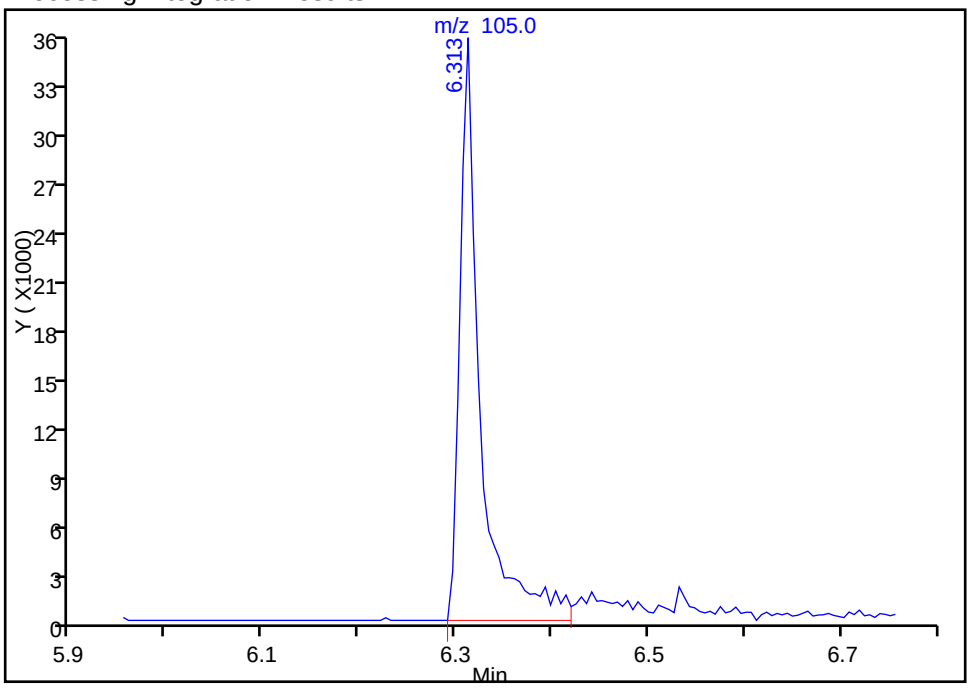
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005C.D
Injection Date: 05-Oct-2016 11:31:30 Instrument ID: SV5
Lims ID: IC CS-3 ODD
Client ID:
Operator ID: ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

53 Benzoic acid, CAS: 65-85-0

Signal: 1

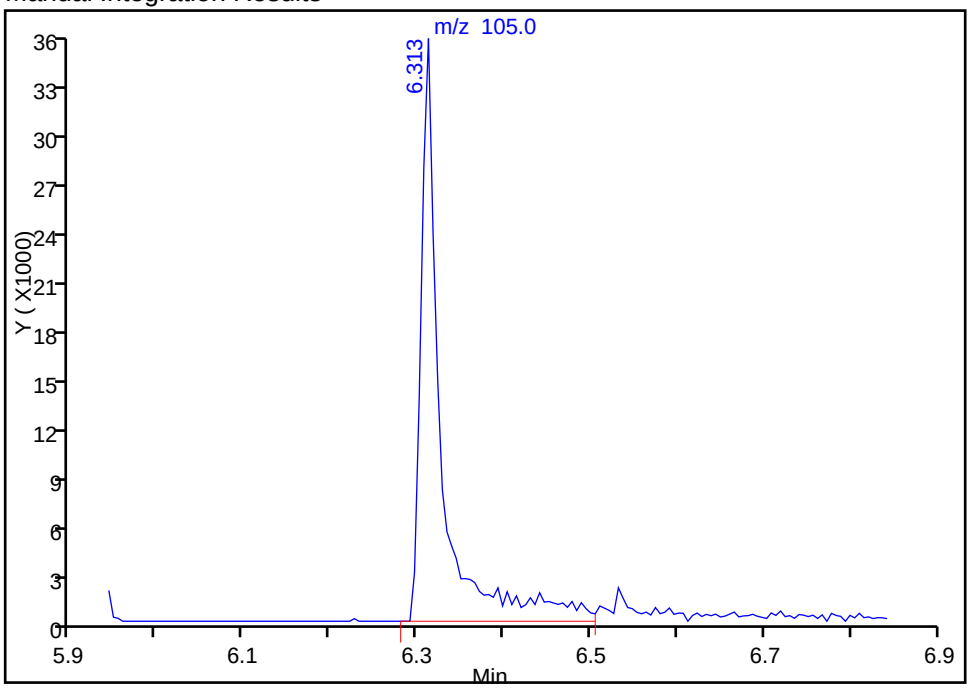
Processing Integration Results

RT: 6.31
Area: 53472
Amount: 23.112837
Amount Units: ug/ml



Manual Integration Results

RT: 6.31
Area: 58796
Amount: 18.329665
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 12:23:04
Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005D.D
Lims ID: IC CS-4 ODD
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 05-Oct-2016 11:58:30 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-4 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:46:51 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 12:23:54

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	99	263860	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	99	975782	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	99	511746	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	892003	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	98	777169	40.0	40.0	
* 6 Perylene-d12	264	15.881	15.881	0.000	100	934743	40.0	40.0	
21 1,4-Oxathiane	46	4.590	4.590	0.000	38	197662	NC	NC	
25 Benzaldehyde	106	5.216	5.222	-0.006	37	161418	20.0	22.6	
37 Indene	115	5.789	5.788	0.001	50	662702	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	50	150767	NC	NC	
53 Benzoic acid	105	6.318	6.350	-0.032	63	159568	40.0	39.9	
56 Thiodiglycol	61	6.436	6.436	0.000	52	134066	NC	NC	M
66 Caprolactam	113	6.815	6.837	-0.022	41	52710	NC	NC	
118 Atrazine	200	8.907	8.912	-0.005	20	100632	NC	NC	
135 Benzidine	184	10.511	10.517	-0.006	51	403643	20.0	24.0	
147 3,3'-Dichlorobenzidine	252	12.298	12.303	-0.005	35	186270	20.0	21.7	

QC Flag Legend

Processing Flags
NC - Not Calibrated
Review Flags
M - Manually Integrated

Reagents:

MSODDL4_00009 Amount Added: 1.00 Units: mL

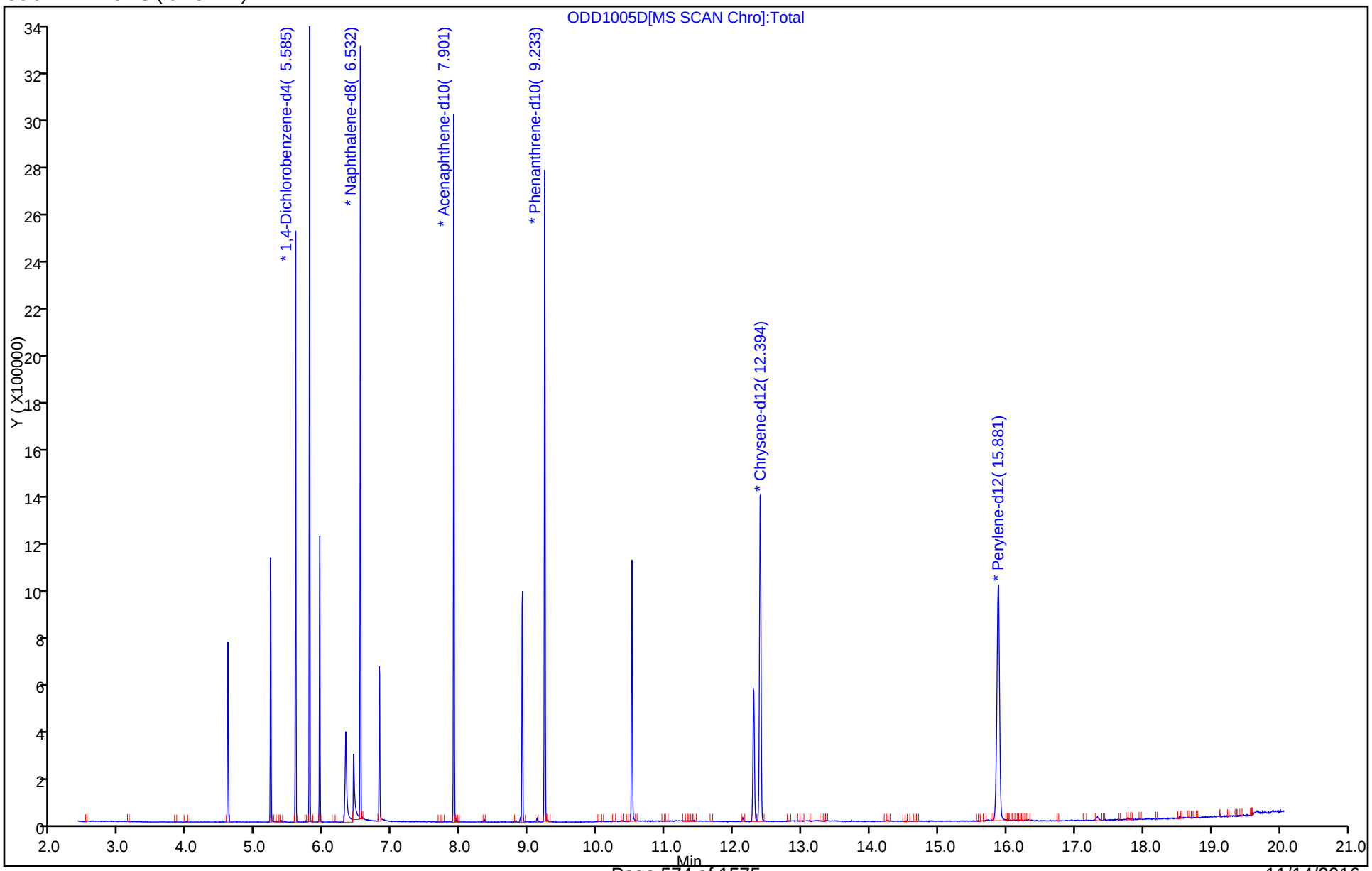
Report Date: 05-Oct-2016 14:46:53 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005D.D

Injection Date:	05-Oct-2016 11:58:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-4 ODD			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005E.D
Lims ID: IC CS-5 ODD
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 05-Oct-2016 12:26:30 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-5 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:46:57 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 13:44:04

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	252354	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	912508	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	517770	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	768111	40.0	40.0	
* 5 Chrysene-d12	240	12.389	12.394	-0.005	100	956154	40.0	40.0	
* 6 Perylene-d12	264	15.881	15.881	0.000	100	1005395	40.0	40.0	
21 1,4-Oxathiane	46	4.590	4.590	0.000	99	436240	NC	NC	
25 Benzaldehyde	106	5.216	5.222	-0.006	100	356738	50.0	52.3	
37 Indene	115	5.789	5.788	0.001	98	1299990	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	100	319769	NC	NC	
53 Benzoic acid	105	6.339	6.350	-0.011	99	435826	100.0	101.2	
56 Thiodiglycol	61	6.436	6.436	0.000	99	276310	NC	NC	
66 Caprolactam	113	6.826	6.837	-0.011	99	131312	NC	NC	
118 Atrazine	200	8.907	8.912	-0.005	99	257085	NC	NC	
135 Benzidine	184	10.517	10.517	0.000	100	1032899	50.0	49.9	
147 3,3'-Dichlorobenzidine	252	12.298	12.303	-0.005	100	543435	50.0	51.4	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

MSODDL5_00008 Amount Added: 1.00 Units: mL

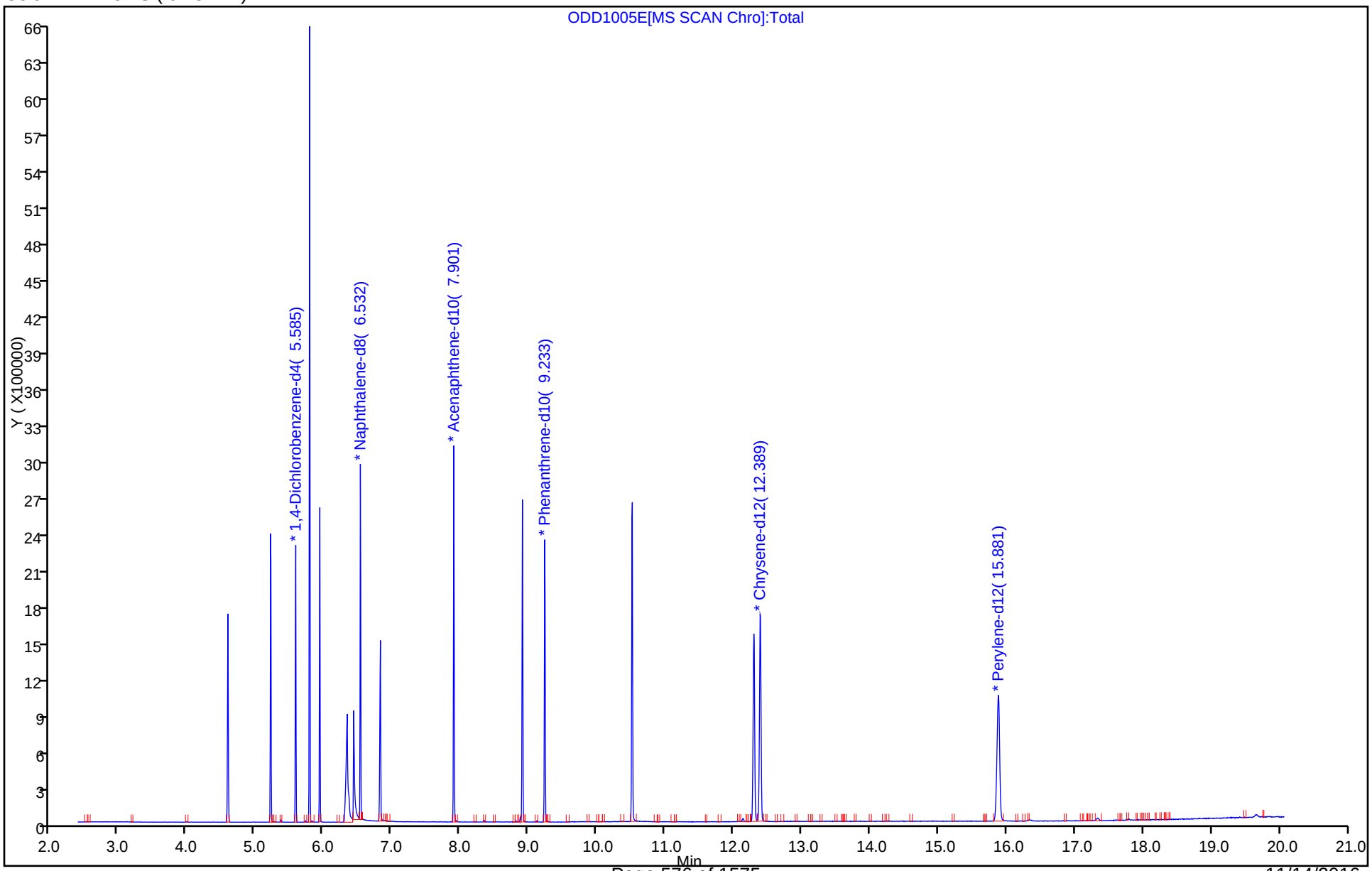
Report Date: 05-Oct-2016 14:46:58 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005E.D

Injection Date:	05-Oct-2016 12:26:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-5 ODD			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005F.D
Lims ID: IC CS-6 ODD
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 05-Oct-2016 12:53:30 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-6 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:47:01 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 13:44:14

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	257303	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	926932	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	99	552036	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	961571	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	100	857812	40.0	40.0	
* 6 Perylene-d12	264	15.881	15.881	0.000	99	851726	40.0	40.0	
21 1,4-Oxathiane	46	4.590	4.590	0.000	99	589047	NC	NC	
25 Benzaldehyde	106	5.222	5.222	0.000	100	474608	75.0	68.3	
37 Indene	115	5.788	5.788	0.000	27	1801599	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	100	450350	NC	NC	
53 Benzoic acid	105	6.350	6.350	0.000	99	699840	150.0	149.0	
56 Thiodiglycol	61	6.436	6.436	0.000	99	419146	NC	NC	
66 Caprolactam	113	6.837	6.837	0.000	99	189718	NC	NC	
118 Atrazine	200	8.912	8.912	0.000	99	364109	NC	NC	
135 Benzidine	184	10.517	10.517	0.000	100	1373398	75.0	73.9	
147 3,3'-Dichlorobenzidine	252	12.303	12.303	0.000	100	736986	75.0	77.6	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

MSODDL6_00008 Amount Added: 1.00 Units: mL

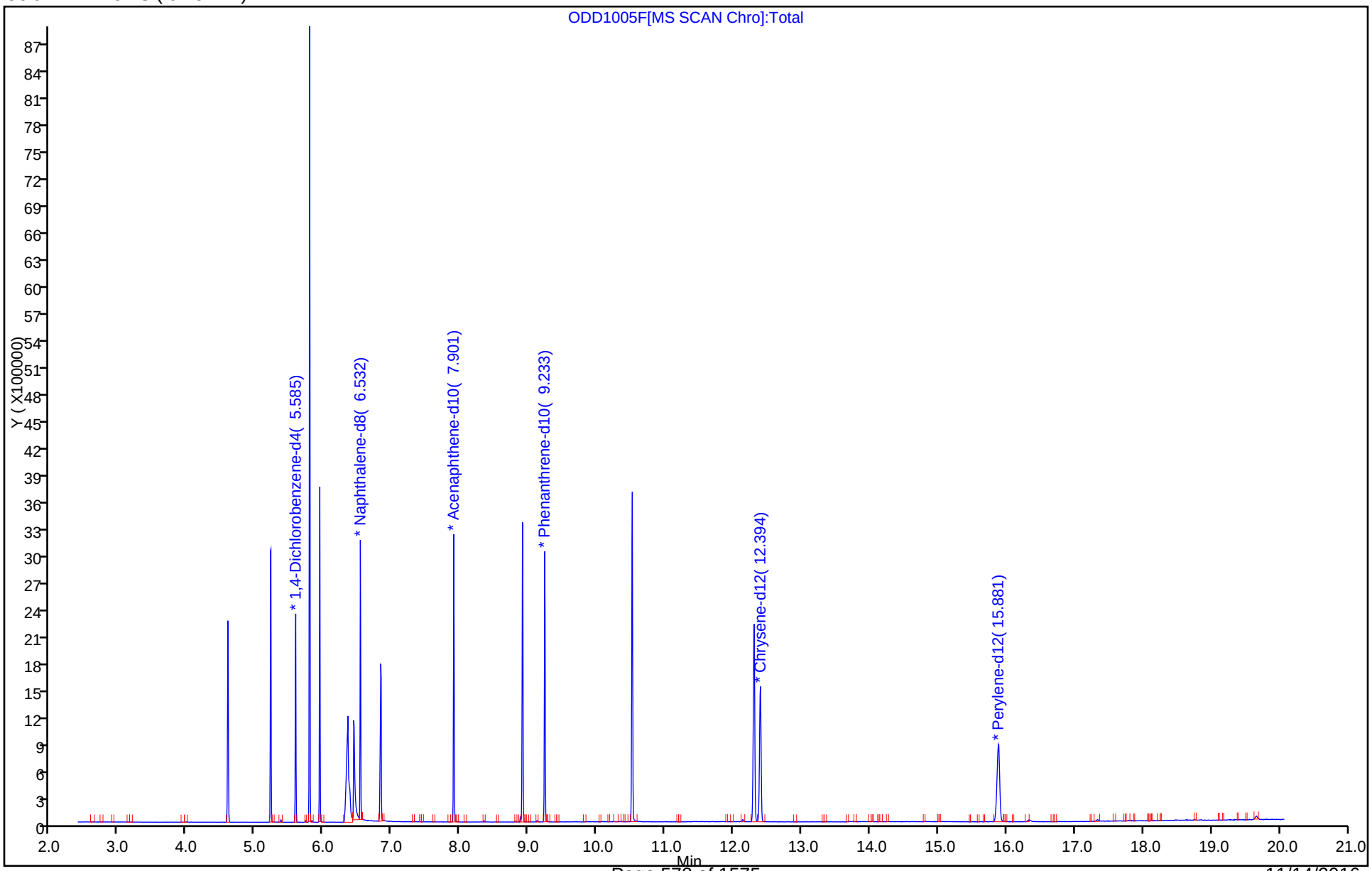
Report Date: 05-Oct-2016 14:47:03 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005F.D

Injection Date:	05-Oct-2016 12:53:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-6 ODD			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005G.D
Lims ID: IC CS-7 ODD
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 05-Oct-2016 13:21:30 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-7 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:47:06 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 13:55:24

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	274375	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	1002798	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	554044	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	953962	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	100	871757	40.0	40.0	
* 6 Perylene-d12	264	15.881	15.881	0.000	100	1019493	40.0	40.0	
21 1,4-Oxathiane	46	4.590	4.590	0.000	99	836576	NC	NC	
25 Benzaldehyde	106	5.222	5.222	0.000	100	654068	100.0	88.2	
37 Indene	115	5.789	5.788	0.001	98	2360259	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	99	648120	NC	NC	
53 Benzoic acid	105	6.361	6.350	0.011	99	1141570	200.0	208.3	
56 Thiodiglycol	61	6.446	6.436	0.010	98	645475	NC	NC	
66 Caprolactam	113	6.842	6.837	0.005	99	267580	NC	NC	
118 Atrazine	200	8.912	8.912	0.000	99	511193	NC	NC	
135 Benzidine	184	10.517	10.517	0.000	100	1555175	100.0	82.3	
147 3,3'-Dichlorobenzidine	252	12.303	12.303	0.000	100	942294	100.0	97.7	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

MSODDL7_00008 Amount Added: 1.00 Units: mL

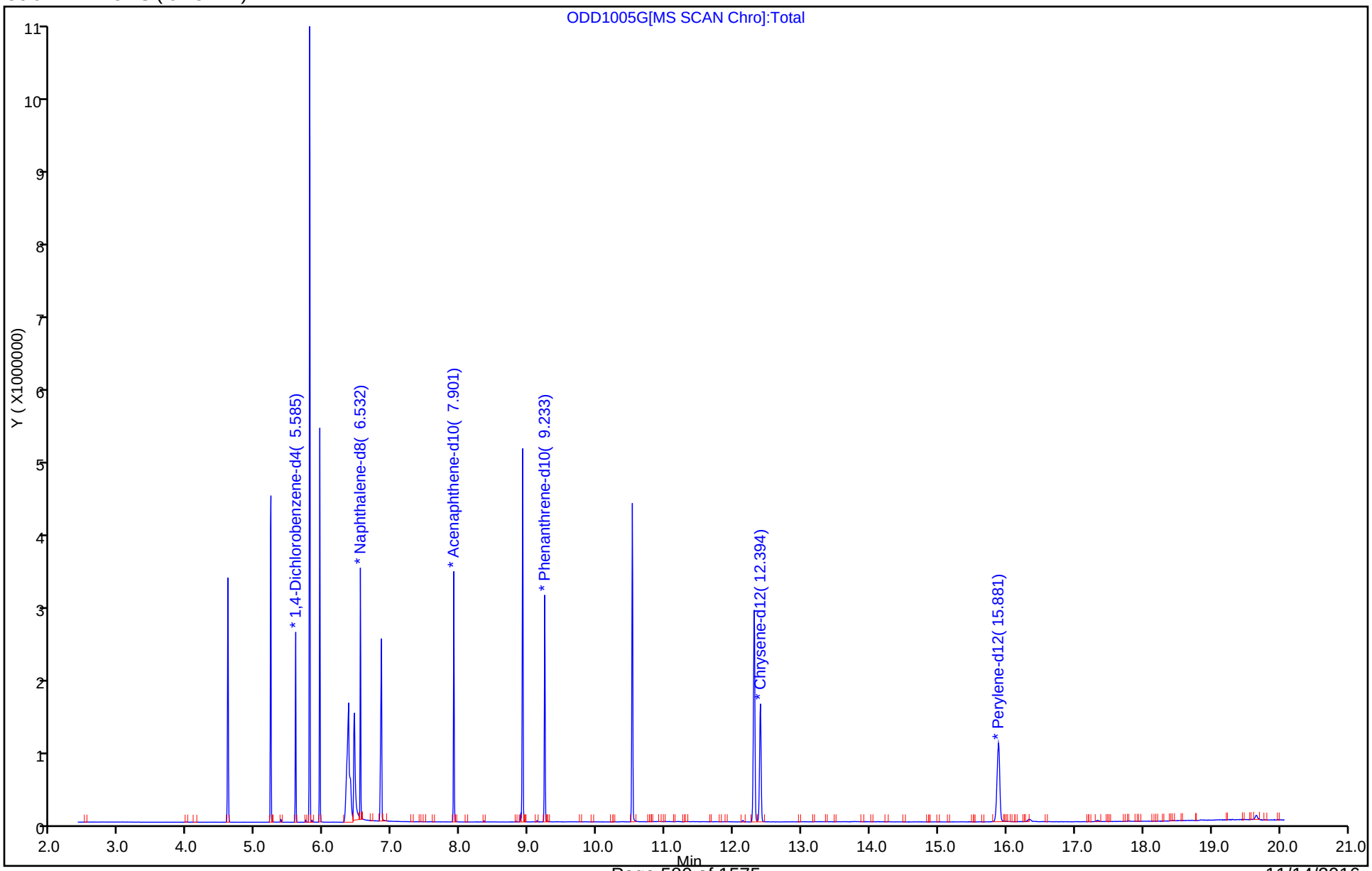
Report Date: 05-Oct-2016 14:47:07 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005G.D

Injection Date:	05-Oct-2016 13:21:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-7 ODD			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005H.D
Lims ID: IC CS-8 ODD
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 05-Oct-2016 13:49:30 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-8 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:47:11 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 14:40:23

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	262984	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	954601	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	570749	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	983720	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	100	1037119	40.0	40.0	
* 6 Perylene-d12	264	15.882	15.881	0.001	100	1027819	40.0	40.0	
21 1,4-Oxathiane	46	4.591	4.590	0.001	99	976928	NC	NC	
25 Benzaldehyde	106	5.222	5.222	0.000	99	743635	120.0	104.7	
37 Indene	115	5.789	5.788	0.001	98	2644658	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	99	750735	NC	NC	
53 Benzoic acid	105	6.366	6.350	0.016	99	1354323	240.0	247.9	
56 Thiodiglycol	61	6.447	6.436	0.011	98	742112	NC	NC	
66 Caprolactam	113	6.848	6.837	0.011	100	313986	NC	NC	
118 Atrazine	200	8.912	8.912	0.000	99	634781	NC	NC	
135 Benzidine	184	10.517	10.517	0.000	100	2177386	120.0	96.9	
147 3,3'-Dichlorobenzidine	252	12.303	12.303	0.000	100	1349972	120.0	117.6	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

MSODDL8_00008 Amount Added: 1.00 Units: mL

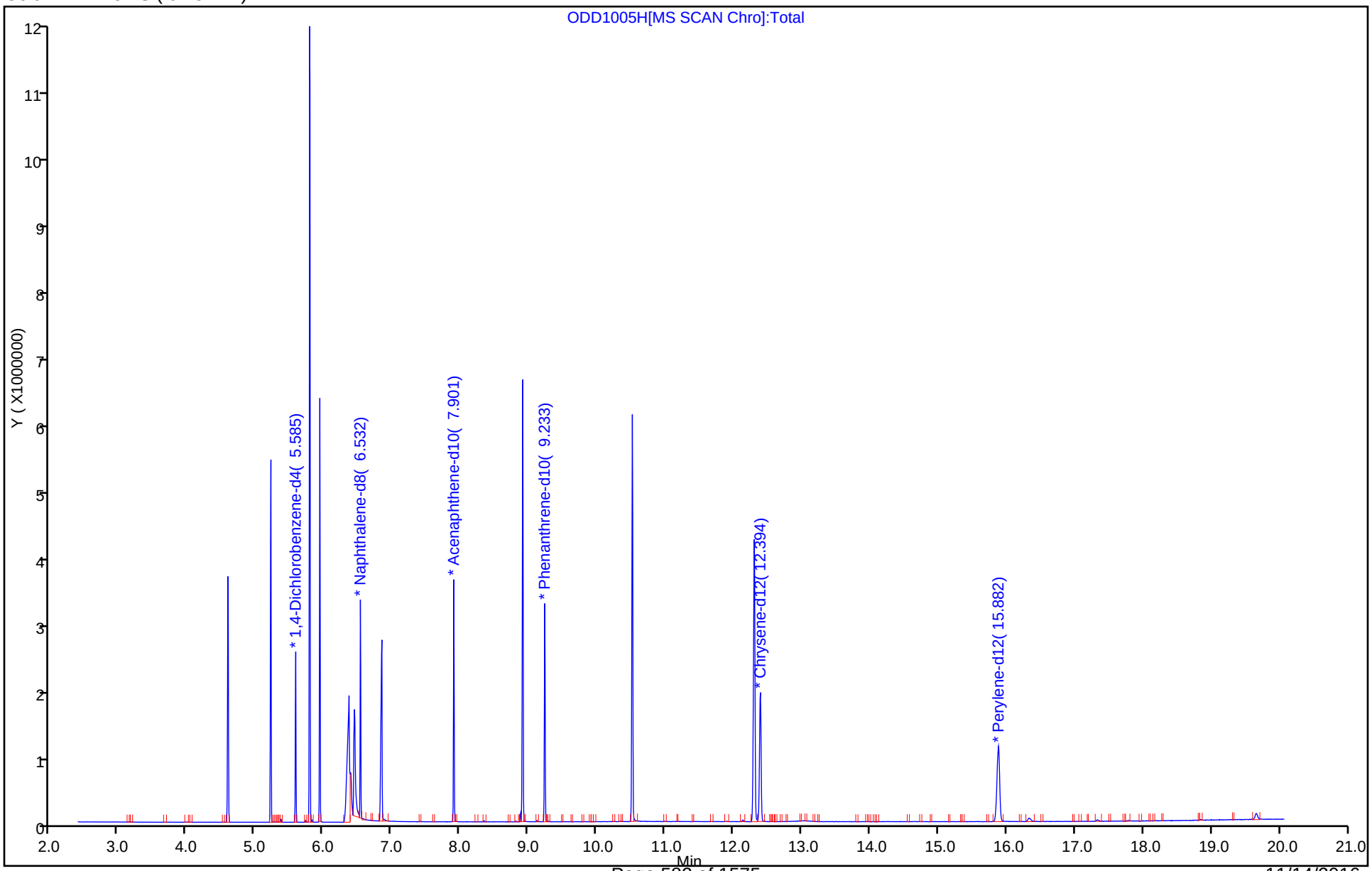
Report Date: 05-Oct-2016 14:47:13 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005H.D

Injection Date:	05-Oct-2016 13:49:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-8 ODD			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D
Lims ID: IC CS-9 ODD
Client ID:
Sample Type: IC Calib Level: 9
Inject. Date: 05-Oct-2016 14:16:30 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-9 odd
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 14:47:18 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 14:46:08

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	263960	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	752299	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	531017	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	819066	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	100	823936	40.0	40.0	
* 6 Perylene-d12	264	15.887	15.881	0.006	100	966665	40.0	40.0	
21 1,4-Oxathiane	46	4.590	4.590	0.000	99	1096217	NC	NC	
25 Benzaldehyde	106	5.222	5.222	0.000	99	772122	160.0	108.3	
37 Indene	115	5.794	5.788	0.006	28	2829475	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	99	738696	NC	NC	
53 Benzoic acid	105	6.377	6.350	0.027	100	1407073	320.0	306.6	
56 Thiodiglycol	61	6.457	6.436	0.021	98	745925	NC	NC	
66 Caprolactam	113	6.853	6.837	0.016	99	336929	NC	NC	
118 Atrazine	200	8.918	8.912	0.006	99	681308	NC	NC	
135 Benzidine	184	10.522	10.517	0.005	100	2466085	160.0	138.1	
147 3,3'-Dichlorobenzidine	252	12.309	12.303	0.006	100	1401277	160.0	153.7	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

MSODDL9_00006 Amount Added: 1.00 Units: mL

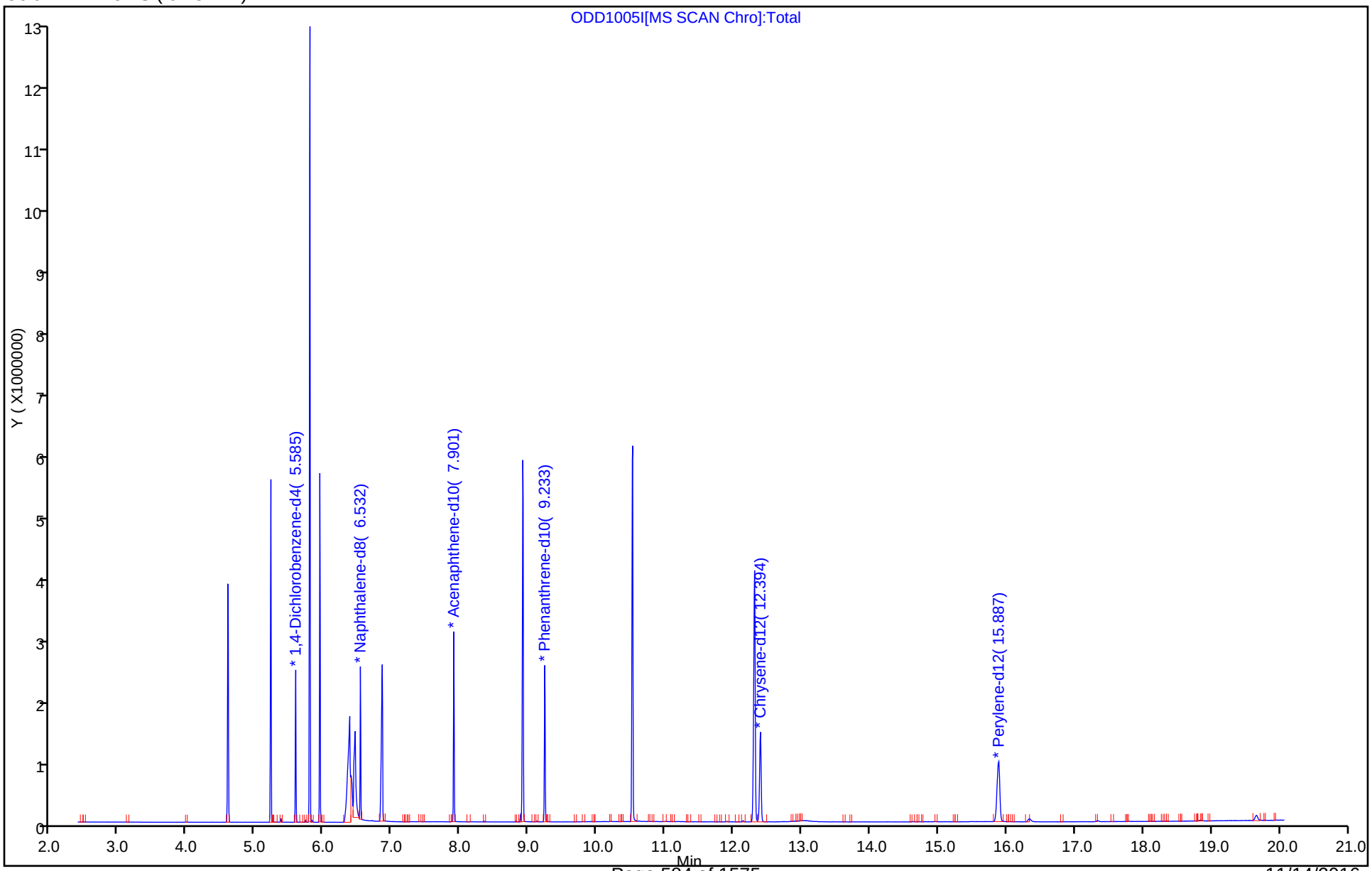
Report Date: 05-Oct-2016 14:47:19 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Injection Date:	05-Oct-2016 14:16:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-9 ODD			Worklist Smp#:	10
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-130823/12	HSL1005A.D
Level 2	IC 320-130823/13	HSL1005B.D
Level 3	IC 320-130823/14	HSL1005C.D
Level 4	IC 320-130823/15	HSL1005D.D
Level 5	IC 320-130823/16	HSL1005E.D
Level 6	IC 320-130823/17	HSL1005F.D
Level 7	ICIS 320-130823/18	HSL1005G.D
Level 8	IC 320-130823/19	HSL1005H.D
Level 9	IC 320-130823/20	HSL1005I.D
Level 10	IC 320-130823/21	HSL1005J.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
N-Nitrosodimethylamine	+++++ 0.9401	1.0397 1.2387	1.0022 1.1594	1.1055 0.9776	1.0271 1.0140	Ave		1.0560			0.1000	9.0		15.0			
Phenol	+++++ 1.7577	1.7441 1.6286	1.6958 1.5141	1.8470 1.5926	1.8651 1.5055	Ave		1.6834			0.8000	7.9		15.0			
Aniline	+++++ 2.1743	2.3343 2.0208	2.2249 1.8731	2.3587 1.9830	2.3073 1.8687	Ave		2.1272			0.9000	9.2		15.0			
Bis(2-chloroethyl)ether	+++++ 1.3709	1.5123 1.2495	1.4053 1.2259	1.5511 1.2833	1.4793 1.2430	Ave		1.3690			0.7000	9.1		15.0			
2-Chlorophenol	+++++ 1.4011	1.5072 1.3011	1.3489 1.2886	1.5826 1.2940	1.4785 1.2575	Ave		1.3844			0.8000	8.3		15.0			
1,3-Dichlorobenzene	+++++ 1.5634	1.6548 1.4843	1.5848 1.3999	1.7111 1.4143	1.6804 1.3449	Ave		1.5376			0.9000	8.6		15.0			
1,4-Dichlorobenzene	+++++ 1.5261	1.6408 1.4647	1.5924 1.4353	1.5644 1.3938	1.6369 1.3288	Ave		1.5092			0.9000	7.3		15.0			
Benzyl alcohol	+++++ 0.9561	0.8550 0.8923	0.8454 1.1030	1.0223 0.8977	0.9619 0.8572	Ave		0.9323			0.1000	9.3		15.0			
1,2-Dichlorobenzene	+++++ 1.4503	1.4599 1.3908	1.5380 1.6134	1.6231 1.2986	1.6075 1.2366	Ave		1.4687			0.9000	9.6		15.0			
2-Methylphenol	+++++ 1.2847	1.1325 1.2062	1.2292 1.3752	1.3870 1.2126	1.3472 1.1258	Ave		1.2556			0.7000	7.9		15.0			
2,2'-oxybis[1-chloropropane]	+++++ 2.1513	2.0441 1.9384	2.4609 2.3110	2.4257 1.9484	2.3759 1.8533	Ave		2.1676			0.0100	10.7		15.0			
3 & 4 Methylphenol	+++++ 1.3215	+++++ 1.2573	1.4887 1.4440	1.6193 1.2124	1.4291 1.1684	Ave		1.3676			0.6000	11.2		15.0			
N-Nitrosodi-n-propylamine	+++++ 1.0820	+++++ 1.0077	1.1878 1.1714	1.2563 0.9943	1.1553 0.9634	Ave		1.1023			0.5000	9.6		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
Hexachloroethane	+++++ 0.6198	0.5464 0.6172	0.6861 0.7108	0.7326 0.6059	0.6649 0.5995	Ave		0.6426			0.3000	9.3		15.0			
Nitrobenzene	+++++ 0.4062	0.4025 0.3721	0.4604 0.3487	0.4631 0.3670	0.4446 0.3474	Ave		0.4013			0.2000	11.5		15.0			
Isophorone	+++++ 0.7199	0.7375 0.6610	0.7517 0.6116	0.8044 0.6486	0.7874 0.6467	Ave		0.7076			0.4000	9.6		15.0			
2-Nitrophenol	+++++ 0.2059	0.1559 0.1898	0.1745 0.1841	0.2102 0.1935	0.2069 0.1832	Ave		0.1893			0.1000	9.2		15.0			
2,4-Dimethylphenol	+++++ 0.3747	0.3529 0.3483	0.3648 0.3229	0.4269 0.3383	0.4032 0.3297	Ave		0.3624			0.2000	9.5		15.0			
Bis(2-chloroethoxy)methane	+++++ 0.4516	0.4740 0.4070	0.4582 0.4046	0.5044 0.3986	0.4783 0.3820	Ave		0.4399			0.3000	9.7		15.0			
2,4-Dichlorophenol	+++++ 0.2991	0.2851 0.2792	0.2995 0.2807	0.3212 0.2805	0.3227 0.2653	Ave		0.2926			0.2000	6.7		15.0			
1,2,4-Trichlorobenzene	+++++ 0.3364	0.3495 0.3284	0.3560 0.3058	0.3866 0.3003	0.3558 0.2865	Ave		0.3340			0.1000	9.6		15.0			
Naphthalene	+++++ 0.9654	+++++ 0.9186	1.0787 0.8183	1.0535 0.7804	1.0808 +++++	Ave		0.9565			0.7000	12.9		15.0			
4-Chloroaniline	+++++ 0.4528	0.4787 0.4426	0.4795 0.4141	0.4542 0.4116	0.4818 0.3732	Ave		0.4432			0.0100	8.4		15.0			
2,6-Dichlorophenol	+++++ 0.2947	0.2975 0.2849	0.2854 0.2712	0.2894 0.2702	0.3082 0.2548	Ave		0.2841			0.0400	5.7		15.0			
Hexachlorobutadiene	+++++ 0.1925	0.2186 0.2064	0.2163 0.1792	0.2016 0.1788	0.2092 0.1787	Ave		0.1979			0.0100	8.2		15.0			
4-Chloro-3-methylphenol	+++++ 0.3308	0.3524 0.4005	0.3191 0.3134	0.2908 0.3104	0.3454 0.3272	Ave		0.3322			0.2000	9.5		15.0			
2-Methylnaphthalene	+++++ 0.6851	0.8284 0.7336	0.7544 0.6008	0.7413 0.5921	0.7526 0.6108	Ave		0.6999			0.4000	11.8		15.0			
1-Methylnaphthalene	+++++ 0.6435	0.7988 0.6439	0.6931 0.5659	0.6496 0.5549	0.6989 0.5757	Ave		0.6471			0.2000	12.0		15.0			
Hexachlorocyclopentadiene	+++++ 0.3749	0.3488 0.3713	0.3122 0.3677	0.3660 0.3689	0.3910 0.3517	Ave		0.3614			0.0500	6.1		15.0			
1,2,4,5-Tetrachlorobenzene	+++++ 0.5669	0.7121 0.5459	0.5830 0.5196	0.6080 0.5124	0.6207 0.4849	Ave		0.5726			0.0100	12.0		15.0			
2,4,6-Trichlorophenol	+++++ 0.3718	0.3393 0.3760	0.3372 0.3679	0.3641 0.3678	0.4047 0.3486	Ave		0.3642			0.2000	5.7		15.0			
2,4,5-Trichlorophenol	+++++ 0.3907	0.4156 0.3809	0.3587 0.3780	0.3794 0.3705	0.4128 0.3653	Ave		0.3835			0.2000	5.1		15.0			
Biphenyl	+++++ 1.3673	1.6413 1.3079	1.4452 1.2244	1.5364 1.1806	1.5673 +++++	Ave		1.4088			0.0100	11.8		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
2-Chloronaphthalene	+++++ 1.0947	1.2902 1.0516	1.1394 1.0020	1.1713 0.9736	1.2435 0.9047	Ave		1.0968			0.8000	11.6		15.0			
2-Nitroaniline	+++++ 0.4250	0.4100 0.4221	0.3626 0.4085	0.4179 0.4100	0.4389 0.3921	Ave		0.4097				5.3		15.0			
Dimethyl phthalate	+++++ 1.2722	1.3236 1.2321	1.3188 1.1658	1.3661 1.1415	1.4300 1.0696	Ave		1.2577			0.0100	9.2		15.0			
1,3-Dinitrobenzene	+++++ 0.2231	+++++ 0.2236	0.1813 0.2215	0.2041 0.2203	0.2264 0.2149	Ave		0.2144			0.0500	7.0		15.0			
2,6-Dinitrotoluene	+++++ 0.3154	0.2783 0.3058	0.2571 0.3004	0.3179 0.2992	0.3297 0.2853	Ave		0.2988			0.2000	7.5		15.0			
Acenaphthylene	+++++ 1.7142	1.9798 1.5955	1.7226 1.4916	1.7823 1.4354	1.8735 +++++	Ave		1.6994			0.9000	10.9		15.0			
3-Nitroaniline	+++++ 0.3564	0.3213 0.3577	0.3121 0.3437	0.3557 0.3476	0.3628 0.3345	Ave		0.3435			0.0100	5.1		15.0			
2,4-Dinitrophenol	+++++ 0.1815	+++++ 0.1865	+++++ 0.1851	+++++ 0.1879	0.1618 0.1856	Ave		0.1814			0.0500	5.4		15.0			
Acenaphthene	+++++ 1.0868	1.2492 1.0289	1.1311 0.9609	1.1695 0.9462	1.2109 +++++	Ave		1.0979			0.9000	10.2		15.0			
4-Nitrophenol	+++++ 0.1870	0.1611 0.1853	0.1493 0.1852	0.1768 0.1869	0.1783 0.1829	Ave		0.1770			0.0500	7.5		15.0			
2,4-Dinitrotoluene	+++++ 0.4329	0.3622 0.4187	0.3600 0.4110	0.4208 0.4069	0.4541 0.3994	Ave		0.4073			0.2000	7.5		15.0			
Dibenzofuran	+++++ 1.5265	1.8520 1.4486	1.5714 1.3582	1.6777 1.3075	1.7250 +++++	Ave		1.5583			0.8000	12.0		15.0			
2,3,4,6-Tetrachlorophenol	+++++ 0.3192	+++++ 0.3159	0.2362 0.3140	0.2968 0.3176	0.3290 0.3036	Ave		0.3040			0.0100	9.6		15.0			
Diethyl phthalate	+++++ 1.2714	1.3889 1.2204	1.3046 1.1608	1.4438 1.1174	1.4352 1.0441	Ave		1.2652			0.0100	11.2		15.0			
4-Chlorophenyl phenyl ether	+++++ 0.6446	0.6911 0.6297	0.6316 0.6004	0.6962 0.5928	0.7273 0.5377	Ave		0.6390			0.4000	9.2		15.0			
4-Nitroaniline	+++++ 0.3722	0.3414 0.3611	0.3064 0.3474	0.3671 0.3491	0.3894 0.3099	Ave		0.3493			0.0100	7.9		15.0			
Fluorene	+++++ 1.2437	1.4920 1.1887	1.3127 1.1242	1.4096 1.0900	1.4045 +++++	Ave		1.2832			0.9000	11.3		15.0			
4,6-Dinitro-2-methylphenol	+++++ 0.1404	+++++ 0.1394	+++++ 0.1380	0.1295 0.1392	0.1369 0.1407	Ave		0.1377			0.0100	2.8		15.0			
N-Nitrosodiphenylamine	+++++ 0.5589	0.5965 0.5363	0.5667 0.5013	0.7191 0.4997	0.6246 0.4835	Ave		0.5652			0.0100	13.1		15.0			
Azobenzene	+++++ 0.8074	0.9063 0.7592	0.8430 0.7082	1.0096 0.6969	0.8991 0.6669	Ave		0.8107			0.2000	14.1		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
4-Bromophenyl phenyl ether	+++++ 0.2234	0.2317 0.2167	0.2373 0.2072	0.2881 0.2069	0.2426 0.2143	Ave		0.2298			0.1000	11.0		15.0			
Hexachlorobenzene	+++++ 0.2280	0.2610 0.2179	0.2574 0.2119	0.2784 0.2137	0.2484 0.2088	Ave		0.2362			0.1000	10.8		15.0			
Pentachlorophenol	+++++ 0.1348	+++++ 0.1300	+++++ 0.1286	0.1016 0.1311	0.1199 0.1319	Ave		0.1254			0.0500	9.2		15.0			
Phenanthrene	+++++ 1.0359	1.2394 0.9715	1.0847 0.9053	1.1203 0.8818	1.1588 0.8513	Ave		1.0277			0.7000	13.1		15.0			
Anthracene	+++++ 1.0949	1.2375 1.0009	1.1602 0.9382	1.1358 0.9032	1.2131 0.8749	Ave		1.0621			0.7000	12.9		15.0			
Carbazole	+++++ 1.0231	1.1206 0.9527	1.0241 0.8873	1.0243 0.8581	1.1343 0.8337	Ave		0.9843			0.0100	11.1		15.0			
Di-n-butyl phthalate	+++++ 1.2856	1.2476 1.1840	1.2063 1.1000	1.3139 1.0646	1.4397 1.0040	Ave		1.2051			0.0100	11.2		15.0			
Fluoranthene	+++++ 1.2310	1.2078 1.1352	1.0634 1.0664	1.4642 1.0346	1.3549 0.9813	Ave		1.1710			0.6000	13.6		15.0			
Pyrene	+++++ 1.2816	1.1174 1.1869	0.9792 1.1003	1.3363 1.0611	1.3628 1.0223	Ave		1.1609			0.6000	12.0		15.0			
Butyl benzyl phthalate	+++++ 0.6458	+++++ 0.6232	0.5034 0.6013	0.6548 0.5933	0.6300 0.5639	Ave		0.6020			0.0100	8.2		15.0			
Bis(2-ethylhexyl) phthalate	+++++ 0.8825	0.7475 0.8637	0.7973 0.8320	0.7965 0.8250	0.8937 0.7774	Ave		0.8240			0.0100	6.0		15.0			
Benzo[a]anthracene	+++++ 1.1958	1.2497 1.1694	1.1754 1.1048	1.1921 1.0887	1.2749 1.0526	Ave		1.1671			0.8000	6.3		15.0			
Chrysene	+++++ 1.1086	1.1672 1.1214	1.1594 1.0541	1.1347 1.0532	1.2006 1.0229	Ave		1.1136			0.7000	5.4		15.0			
Di-n-octyl phthalate	+++++ 1.3719	+++++ 1.5609	+++++ 1.5114	1.1708 1.5127	1.5404 1.3575	Ave		1.4322			0.0100	9.8		15.0			
Benzo[b]fluoranthene	+++++ 1.1849	+++++ 1.5038	1.1314 1.1127	1.1501 1.1226	1.2502 1.1590	Ave		1.2018			0.7000	10.8		15.0			
Benzo[k]fluoranthene	+++++ 1.1585	+++++ 1.4627	1.1497 1.0870	1.1816 1.0842	1.2822 1.0710	Ave		1.1846			0.7000	11.1		15.0			
Benzo[a]pyrene	+++++ 1.1593	1.0681 1.1924	1.0737 1.1007	1.1058 1.1164	1.2227 1.1103	Ave		1.1277			0.7000	4.7		15.0			
Indeno[1,2,3-cd]pyrene	+++++ 1.0479	0.9075 1.0665	0.9805 0.8818	0.9643 0.9052	0.9323 0.9739	Ave		0.9622			0.1000	6.6		15.0			
Dibenz(a,h)anthracene	+++++ 1.1173	0.9729 1.0905	1.0235 0.8995	1.0496 0.8982	0.9642 0.9448	Ave		0.9956			0.4000	8.0		15.0			
Benzo[g,h,i]perylene	+++++ 0.9019	1.0807 0.9480	1.0291 0.8370	1.0367 0.8364	0.9338 0.8614	Ave		0.9406			0.5000	9.7		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
2-Fluorophenol (Surr)	+++++ 1.3387	1.3874 1.6097	1.3821 1.4153	1.3503 1.2739	1.4042 1.3597	Ave		1.3912			0.3000	6.6		15.0			
Phenol-d5 (Surr)	+++++ 1.7585	1.6830 1.6409	1.6328 1.5397	1.8405 1.6621	1.8598 1.5750	Ave		1.6880			0.4000	6.6		15.0			
Nitrobenzene-d5 (Surr)	+++++ 0.4485	0.4612 0.4199	0.5113 0.3753	0.5013 0.4025	0.4730 0.3866	Ave		0.4422			0.0500	11.1		15.0			
2-Fluorobiphenyl (Surr)	+++++ 1.3127	+++++ 1.2560	1.4323 1.1649	1.4594 1.1308	1.4661 1.0488	Ave		1.2839			0.2000	12.5		15.0			
2,4,6-Tribromophenol (Surr)	+++++ 0.1863	0.1801 0.1829	0.1809 0.1850	0.1805 0.1848	0.1886 0.1723	Ave		0.1824			0.0200	2.6		15.0			
Terphenyl-d14 (Surr)	+++++ 0.8583	+++++ 0.8124	0.6696 0.7595	0.9603 0.7455	0.8987 0.7193	Ave		0.8030			0.1000	12.2		15.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-130823/12	HSL1005A.D
Level 2	IC 320-130823/13	HSL1005B.D
Level 3	IC 320-130823/14	HSL1005C.D
Level 4	IC 320-130823/15	HSL1005D.D
Level 5	IC 320-130823/16	HSL1005E.D
Level 6	IC 320-130823/17	HSL1005F.D
Level 7	ICIS 320-130823/18	HSL1005G.D
Level 8	IC 320-130823/19	HSL1005H.D
Level 9	IC 320-130823/20	HSL1005I.D
Level 10	IC 320-130823/21	HSL1005J.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
N-Nitrosodimethylamine	DCBd 4	Ave	+++++ 306126	13205 454239	31589 591697	63491 748381	135091 917643	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Phenol	DCBd 4	Ave	+++++ 572345	22150 597201	53449 772749	106074 1219127	245310 1362464	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Aniline	DCBd 4	Ave	+++++ 707997	29646 741059	70127 955979	135467 1517974	303469 1691176	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Bis(2-chloroethyl)ether	DCBd 4	Ave	+++++ 446394	19206 458213	44293 625626	89084 982369	194568 1124932	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2-Chlorophenol	DCBd 4	Ave	+++++ 456237	19142 477136	42515 657631	90894 990584	194459 1138029	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
1,3-Dichlorobenzene	DCBd 4	Ave	+++++ 509059	21017 544307	49953 714460	98274 1082656	221013 1217121	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
1,4-Dichlorobenzene	DCBd 4	Ave	+++++ 496927	20838 537099	50190 732542	89849 1066984	215290 1202557	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Benzyl alcohol	DCBd 4	Ave	+++++ 311320	10859 327195	26646 562938	58713 687164	126516 775745	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
1,2-Dichlorobenzene	DCBd 4	Ave	+++++ 472240	18541 510033	48477 823438	93218 994079	211431 1119104	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2-Methylphenol	DCBd 4	Ave	+++++ 418335	14383 442307	38744 701847	79660 928267	177197 1018804	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2,2'-oxybis[1-chloropropane]	DCBd 4	Ave	+++++ 700492	25960 710814	77565 1179427	139313 1491492	312495 1677172	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
3 & 4 Methylphenol	DCBd 4	Ave	+++++ 430319	+++++ 461051	46921 736964	93002 928125	187958 1057417	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160
N-Nitrosodi-n-propylamine	DCBd 4	Ave	+++++ 352335	+++++ 369517	37438 597854	72151 761161	151947 871853	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160
Hexachloroethane	DCBd 4	Ave	+++++ 201833	6939 226329	21624 362739	42076 463814	87457 542516	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Nitrobenzene	NPT	Ave	+++++ 502354	16626 540926	53149 857595	105603 1093538	220856 1201488	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Isophorone	NPT	Ave	+++++ 890231	30462 961051	86781 1504063	183445 1932724	391110 2236946	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2-Nitrophenol	NPT	Ave	+++++ 254673	6439 275976	20152 452646	47943 576564	102774 633526	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2,4-Dimethylphenol	NPT	Ave	+++++ 463408	14577 506348	42122 794160	97361 1008133	200291 1140301	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Bis(2-chloroethoxy)methane	NPT	Ave	+++++ 558469	19578 591725	52898 995057	115033 1187834	237593 1321230	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2,4-Dichlorophenol	NPT	Ave	+++++ 369905	11777 405960	34576 690186	73248 835948	160319 917633	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
1,2,4-Trichlorobenzene	NPT	Ave	+++++ 416023	14437 477520	41103 752062	88174 894977	176756 991093	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Naphthalene	NPT	Ave	+++++ 1193834	+++++ 1335512	124540 2012468	240260 2325285	536883 +++++	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 +++++
4-Chloroaniline	NPT	Ave	+++++ 559896	19773 643480	55356 1018307	103581 1226490	239336 1290798	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2,6-Dichlorophenol	NPT	Ave	+++++ 364486	12289 414244	32952 667047	66005 805106	153097 881409	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Hexachlorobutadiene	NPT	Ave	+++++ 238007	9028 300012	24975 440687	45977 532875	103935 618147	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
4-Chloro-3-methylphenol	NPT	Ave	+++++ 409045	14556 582330	36842 770696	66315 924930	171573 1131799	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2-Methylnaphthalene	NPT	Ave	+++++ 847230	34217 1066560	87098 1477440	169060 1764371	373829 2112864	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
1-Methylnaphthalene	NPT	Ave	+++++ 795718	32993 936093	80022 1391734	148144 1653585	347153 1991268	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Hexachlorocyclopentadiene	ANT	Ave	+++++ 276119	9193 396904	22426 533796	47688 643092	113805 788640	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
1,2,4,5-Tetrachlorobenzene	ANT	Ave	+++++ 417563	18765 583555	41872 754394	79219 893269	180671 1087167	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2,4,6-Trichlorophenol	ANT	Ave	+++++ 273879	8942 401929	24217 534227	47441 641101	117783 781615	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2,4,5-Trichlorophenol	ANT	Ave	+++++ 287777	10953 407131	25760 548783	49425 645883	120159 818975	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Biphenyl	ANT	Ave	+++++ 1007163	43253 1397973	103795 1777777	200172 2058024	456198 +++++	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 +++++
2-Chloronaphthalene	ANT	Ave	+++++ 806378	34001 1124004	81836 1454789	152599 1697166	361951 2028568	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2-Nitroaniline	ANT	Ave	+++++ 313085	10804 451222	26044 593117	54451 714780	127748 879232	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Dimethyl phthalate	ANT	Ave	+++++ 937130	34880 1316916	94716 1692686	177985 1989951	416236 2398173	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
1,3-Dinitrobenzene	ANT	Ave	+++++ 164312	+++++ 238952	13021 321669	26594 383978	65900 481806	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160
2,6-Dinitrotoluene	ANT	Ave	+++++ 232340	7333 326911	18465 436139	41415 521523	95957 639805	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Acenaphthylene	ANT	Ave	+++++ 1262689	52173 1705428	123723 2165620	232206 2502266	545337 +++++	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 +++++
3-Nitroaniline	ANT	Ave	+++++ 262537	8467 382321	22419 499050	46341 605923	105599 750051	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2,4-Dinitrophenol	ANT	Ave	+++++ 267393	+++++ 398780	+++++ 537484	+++++ 654984	94171 832356	+++++ 100	+++++ 150	+++++ 200	+++++ 240	40.0 320
Acenaphthene	ANT	Ave	+++++ 800529	32920 1099805	81234 1395201	152371 1649436	352471 +++++	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 +++++
4-Nitrophenol	ANT	Ave	+++++ 275506	8492 396160	21442 537737	46064 651640	103770 820286	+++++ 100	4.00 150	10.0 200	20.0 240	40.0 320
2,4-Dinitrotoluene	ANT	Ave	+++++ 318846	9544 447588	25859 596778	54821 709247	132162 895540	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Dibenzofuran	ANT	Ave	+++++ 1124391	48806 1548338	112861 1971962	218576 2279305	502090 +++++	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 +++++
2,3,4,6-Tetrachlorophenol	ANT	Ave	+++++ 235139	+++++ 337640	16963 455953	38667 553617	95777 680688	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160
Diethyl phthalate	ANT	Ave	+++++ 936523	36603 1304418	93697 1685377	188098 1947969	417752 2341006	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
4-Chlorophenyl phenyl ether	ANT	Ave	+++++ 474793	18212 673120	45360 871707	90698 1033455	211701 1205559	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
4-Nitroaniline	ANT	Ave	+++++ 274169	8997 385950	22009 504421	47822 608595	113344 694859	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Fluorene	ANT	Ave	+++++ 916137	39319 1270543	94279 1632181	183652 1900200	408819 +++++	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 +++++
4,6-Dinitro-2-methylphenol	PHN	Ave	+++++ 359508	+++++ 525233	+++++ 715973	50926 861219	138203 1001583	+++++ 100	+++++ 150	+++++ 200	20.0 240	40.0 320
N-Nitrosodiphenylamine	PHN	Ave	+++++ 715356	27424 1010423	68011 1300444	141442 1545428	315241 1720967	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Azobenzene	PHN	Ave	+++++ 1033531	41669 1430447	101165 1837171	198559 2155088	453821 2373686	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
4-Bromophenyl phenyl ether	PHN	Ave	+++++ 285987	10652 408319	28474 537525	56655 639798	122465 762739	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Hexachlorobenzene	PHN	Ave	+++++ 291792	11999 410507	30895 549791	54754 660837	125380 743052	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Pentachlorophenol	PHN	Ave	+++++ 345070	+++++ 490055	+++++ 667384	39961 810816	120997 938562	+++++ 100	+++++ 150	+++++ 200	20.0 240	40.0 320

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Phenanthrene	PHN	Ave	+++++ 1325910	56985 1830530	130175 2348583	220345 2727055	584880 3029938	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Anthracene	PHN	Ave	+++++ 1401479	56900 1885841	139232 2433897	223386 2793166	612323 3113874	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Carbazole	PHN	Ave	+++++ 1309602	51523 1795041	122901 2301757	201461 2653783	572522 2967287	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Di-n-butyl phthalate	PHN	Ave	+++++ 1645611	57363 2230788	144762 2853630	258423 3292324	726661 3573435	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Fluoranthene	PHN	Ave	+++++ 1575731	55534 2138939	127613 2766544	287985 3199664	683895 3492392	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Pyrene	CRY	Ave	+++++ 1619663	54037 2203866	131056 2856955	306302 3292118	712273 3649070	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Butyl benzyl phthalate	CRY	Ave	+++++ 816170	+++++ 1157264	67377 1561247	150088 1840695	329265 2012698	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160
Bis(2-ethylhexyl) phthalate	CRY	Ave	+++++ 1115212	36146 1603864	106719 2160250	182563 2559792	467116 2774760	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Benzo[a]anthracene	CRY	Ave	+++++ 1511197	60435 2171460	157327 2868438	273251 3377895	666347 3757385	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Chrysene	CRY	Ave	+++++ 1401030	56444 2082237	155175 2736996	260102 3267579	627501 3651094	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Di-n-octyl phthalate	CRY	Ave	+++++ 1733725	+++++ 2898453	+++++ 3924177	268375 4693241	805131 4845620	+++++ 50.0	+++++ 75.0	+++++ 100	10.0 120	20.0 160
Benzo[b]fluoranthene	PRY	Ave	+++++ 1254332	+++++ 2337363	116519 3152166	231236 3815167	595689 4325261	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160
Benzo[k]fluoranthene	PRY	Ave	+++++ 1226386	+++++ 2273557	118400 3079359	237565 3684838	610938 3996996	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160
Benzo[a]pyrene	PRY	Ave	+++++ 1227184	52672 1853342	110581 3118268	222328 3794169	582619 4143438	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Indeno[1,2,3-cd]pyrene	PRY	Ave	+++++ 1109310	44753 1657753	100974 2498213	193881 3076473	444236 3634634	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Dibenz(a,h)anthracene	PRY	Ave	+++++ 1182747	47977 1695043	105409 2548202	211017 3052641	459431 3525998	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Benzo[g,h,i]perylene	PRY	Ave	+++++ 954767	53292 1473524	105988 2371192	208439 2842546	444935 3214811	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2-Fluorophenol (Surr)	DCBd 4	Ave	+++++ 435901	17620 590277	43562 722338	77549 975147	184694 1230478	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Phenol-d5 (Surr)	DCBd 4	Ave	+++++ 572594	21374 601730	51465 785802	105701 1272308	244610 1425366	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Nitrobenzene-d5 (Surr)	NPT	Ave	+++++ 554595	19051 610454	59030 922880	114313 1199308	234978 1337086	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
2-Fluorobiphenyl (Surr)	ANT	Ave	+++++ 966913	+++++ 1342463	102868 1691361	190134 1971225	426742 2351550	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 130823

SDG No.:

Instrument ID: SV5 GC Column: HP-5MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2016 15:14 Calibration End Date: 10/05/2016 19:23 Calibration ID: 25605

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
2,4,6-Tribromophenol (Surr)	ANT	Ave	+++++ 137213	4746 195537	12994 268662	23513 322228	54894 386357	+++++ 50.0	2.00 75.0	5.00 100	10.0 120	20.0 160
Terphenyl-d14 (Surr)	CRY	Ave	+++++ 1084631	+++++ 1508598	89625 1972034	220111 2313050	469720 2567521	+++++ 50.0	+++++ 75.0	5.00 100	10.0 120	20.0 160

Curve Type Legend:
Ave = Average ISTD

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005A.D
Lims ID: IC CS-1 HSL
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 05-Oct-2016 15:14:30 ALS Bottle#: 11 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-1 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:13 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 16:08:43

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	273834	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	1005896	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.907	-0.006	99	514465	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.238	-0.005	100	878701	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.399	-0.005	100	824764	40.0	40.0	
* 6 Perylene-d12	264	15.887	15.887	0.000	99	927035	40.0	40.0	
$ 7 2-Fluorophenol	112	4.430	4.425	0.005	93	10131	1.00	1.06	
$ 8 Phenol-d5	99	5.270	5.275	-0.005	96	13113	1.00	1.13	
$ 9 1,2-Dichlorobenzene-d4	152	5.708	5.708	0.000	98	7498	NC	NC	
$ 10 Nitrobenzene-d5	82	5.997	6.002	-0.005	95	12869	1.00	1.16	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	99	25455	1.00	1.54	
$ 12 2,4,6-Tribromophenol	330	8.591	8.591	0.000	91	2599	1.00	1.11	
$ 13 Terphenyl-d14	244	10.800	10.800	0.000	99	22212	1.00	1.34	
14 1,4-Dioxane	88	2.456	2.456	0.000	93	3221	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	97	7777	1.00	1.08	
16 Pyridine	79	2.852	2.847	0.005	95	13611	1.00	1.08	
26 Phenol	94	5.280	5.286	-0.006	92	12161	1.00	1.06	
27 Aniline	93	5.307	5.313	-0.005	95	15397	1.00	1.06	
28 Bis(2-chloroethyl)ether	93	5.350	5.350	0.000	92	10971	1.00	1.17	
30 2-Chlorophenol	128	5.419	5.419	0.000	94	10542	1.00	1.11	
31 1,3-Dichlorobenzene	146	5.542	5.543	0.000	94	12420	1.00	1.18	
32 1,4-Dichlorobenzene	146	5.596	5.601	-0.005	98	13287	1.00	1.29	
33 Benzyl alcohol	108	5.682	5.682	0.000	91	5852	1.00	0.9169	
34 1,2-Dichlorobenzene	146	5.719	5.724	-0.005	98	12016	1.00	1.20	
35 2-Methylphenol	108	5.762	5.767	-0.005	96	9903	1.00	1.15	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	95	19276	1.00	1.30	
39 3 & 4 Methylphenol	108	5.879	5.879	0.000	90	9963	1.00	1.06	
40 N-Nitrosodi-n-propylamine	70	5.874	5.879	-0.005	90	8370	1.00	1.11	
42 Acetophenone	105	5.879	5.885	-0.006	90	15573	1.00	1.23	
45 Hexachloroethane	117	5.981	5.986	-0.005	95	4962	1.00	1.13	
46 Nitrobenzene	77	6.013	6.013	0.000	96	11860	1.00	1.18	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.184	6.184	0.000	99	20762	1.00	1.17	
49 2-Nitrophenol	139	6.248	6.249	-0.001	82	4885	1.00	1.03	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	82	10438	1.00	1.15	
52 Bis(2-chloroethoxy)methane	93	6.323	6.323	0.000	95	12632	1.00	1.14	
55 2,4-Dichlorophenol	162	6.430	6.425	0.005	94	8181	1.00	1.11	M
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	95	9681	1.00	1.15	
58 Naphthalene	128	6.548	6.548	0.000	99	31749	1.00	1.32	
59 4-Chloroaniline	127	6.575	6.575	0.000	96	12620	1.00	1.13	
60 2,6-Dichlorophenol	162	6.591	6.585	0.006	96	7829	1.00	1.10	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	92	6133	1.00	1.23	
67 4-Chloro-3-methylphenol	107	6.917	6.912	0.005	95	7626	1.00	0.9128	
69 2-Methylnaphthalene	142	7.061	7.062	-0.001	96	20471	1.00	1.16	
70 1-Methylnaphthalene	142	7.136	7.142	-0.006	23	19027	1.00	1.17	
71 Hexachlorocyclopentadiene	237	7.184	7.190	-0.006	92	4461	1.00	0.9597	
72 1,2,4,5-Tetrachlorobenzene	216	7.190	7.195	-0.005	92	10044	1.00	1.36	
74 2,4,6-Trichlorophenol	196	7.275	7.270	0.005	95	5546	1.00	1.18	
75 2,4,5-Trichlorophenol	196	7.313	7.302	0.011	93	5612	1.00	1.14	
77 1,1'-Biphenyl	154	7.414	7.415	-0.001	98	27231	1.00	1.50	
78 2-Chloronaphthalene	162	7.447	7.447	0.000	98	21421	1.00	1.52	
80 2-Nitroaniline	65	7.505	7.505	0.000	92	5801	1.00	1.10	
84 Dimethyl phthalate	163	7.628	7.634	-0.006	99	22174	1.00	1.37	
85 1,3-Dinitrobenzene	168	7.666	7.666	0.000	88	2347	1.00	0.8512	
86 2,6-Dinitrotoluene	165	7.682	7.687	-0.005	88	4292	1.00	1.12	
87 Acenaphthylene	152	7.784	7.789	-0.005	99	28257	1.00	1.29	
88 3-Nitroaniline	138	7.837	7.837	0.000	89	4403	1.00	1.00	
90 Acenaphthene	153	7.928	7.933	-0.005	99	18183	1.00	1.29	
91 4-Nitrophenol	109	7.976	7.960	0.016	35	4252	2.00	1.87	M
92 2,4-Dinitrotoluene	165	8.030	8.030	0.000	88	4883	1.00	0.9321	
94 Dibenzofuran	168	8.072	8.078	-0.006	99	26704	1.00	1.33	
97 2,3,4,6-Tetrachlorophenol	232	8.179	8.174	0.005	91	2886	1.00	0.7380	
99 Diethyl phthalate	149	8.217	8.222	-0.005	94	19726	1.00	1.21	
101 4-Chlorophenyl phenyl ethe	204	8.345	8.351	-0.006	93	10343	1.00	1.26	
103 4-Nitroaniline	138	8.367	8.372	-0.005	50	4714	1.00	1.05	M
104 Fluorene	166	8.372	8.377	-0.005	98	22456	1.00	1.36	
105 4,6-Dinitro-2-methylphenol	198	8.399	8.399	0.000	80	2487	2.00	0.8220	
107 Diphenylamine	169	8.447	8.452	-0.005	97	14579	NC	NC	
106 N-Nitrosodiphenylamine	169	8.447	8.452	-0.005	97	14579	1.00	1.17	
108 Azobenzene	77	8.490	8.495	-0.005	98	21786	1.00	1.22	
115 4-Bromophenyl phenyl ether	248	8.794	8.794	0.000	95	5950	1.00	1.18	
117 Hexachlorobenzene	284	8.885	8.891	-0.006	95	6179	1.00	1.19	
120 Pentachlorophenol	266	9.062	9.057	0.005	55	1740	2.00	0.6316	
125 Phenanthrene	178	9.254	9.260	-0.006	99	30656	1.00	1.36	
126 Anthracene	178	9.303	9.308	-0.005	100	29554	1.00	1.27	
127 Carbazole	167	9.442	9.442	0.000	99	27581	1.00	1.28	
129 Di-n-butyl phthalate	149	9.730	9.730	0.000	99	27721	1.00	1.05	
134 Fluoranthene	202	10.410	10.415	-0.005	99	32964	1.00	1.28	
136 Pyrene	202	10.661	10.666	-0.005	21	33275	1.00	1.39	
142 Butyl benzyl phthalate	149	11.410	11.410	0.000	97	13689	1.00	1.10	
150 Benzo[a]anthracene	228	12.373	12.378	-0.005	98	29113	1.00	1.21	
149 Bis(2-ethylhexyl) phthalat	149	12.378	12.378	0.000	80	16342	1.00	0.9619	
151 Chrysene	228	12.437	12.448	-0.011	99	26348	1.00	1.15	
153 Di-n-octyl phthalate	149	13.817	13.822	-0.005	98	32268	1.00	1.09	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
155 Benzo[b]fluoranthene	252	14.801	14.822	-0.021	99	25383	1.00	0.9113	
156 Benzo[k]fluoranthene	252	14.870	14.897	-0.027	98	24546	1.00	0.8941	
157 Benzo[a]pyrene	252	15.705	15.726	-0.021	99	29467	1.00	1.13	M
161 Indeno[1,2,3-cd]pyrene	276	18.748	18.775	-0.027	51	22369	1.00	1.00	
162 Dibenz(a,h)anthracene	278	18.807	18.834	-0.027	96	22395	1.00	0.9706	
163 Benzo[g,h,i]perylene	276	19.331	19.363	-0.032	98	26869	1.00	1.23	M

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

MSHSLL1_00024 Amount Added: 1.00 Units: mL

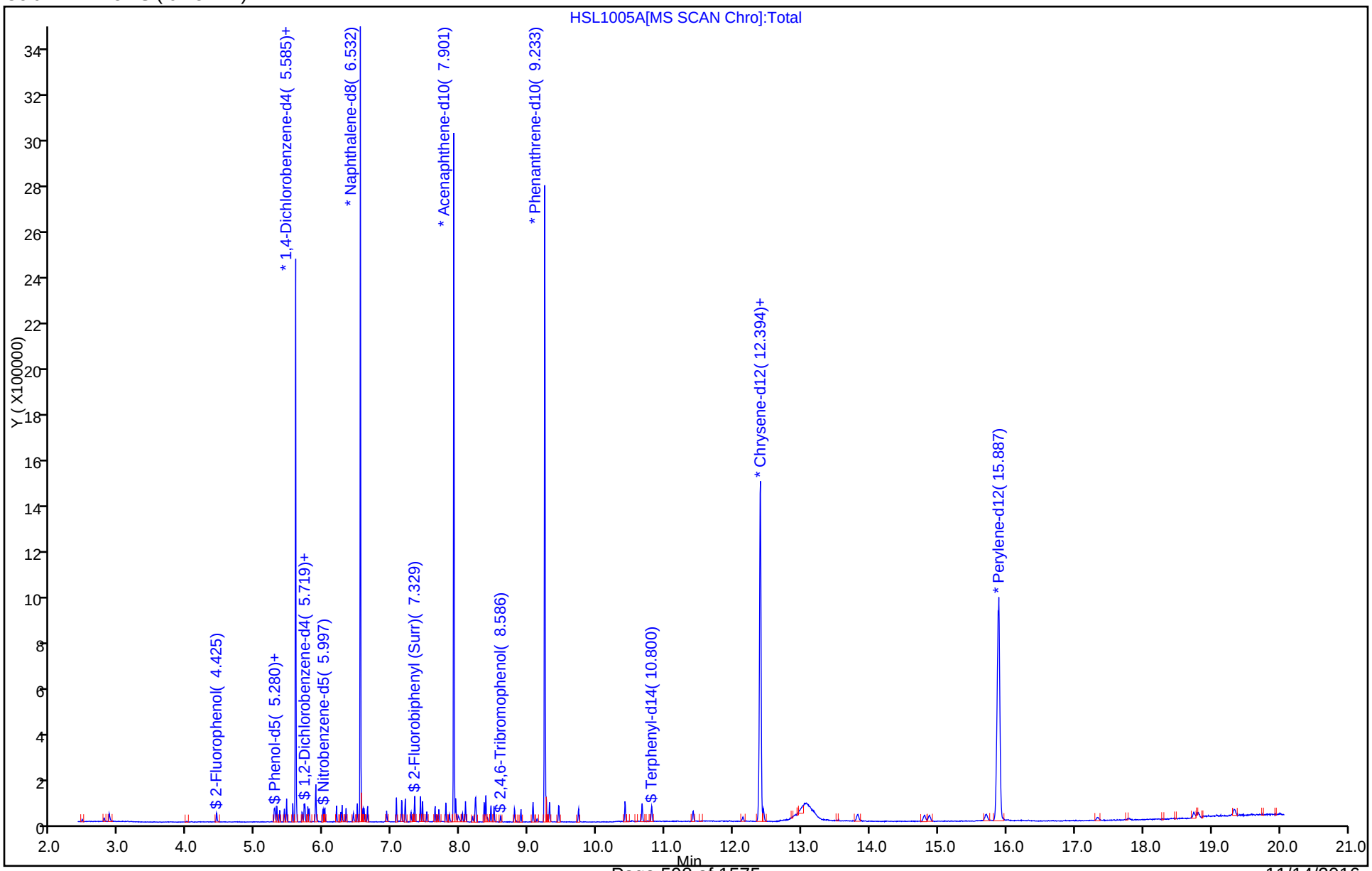
Report Date: 05-Oct-2016 20:43:14 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005A.D

Injection Date:	05-Oct-2016 15:14:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-1 HSL			Worklist Smp#:	12
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

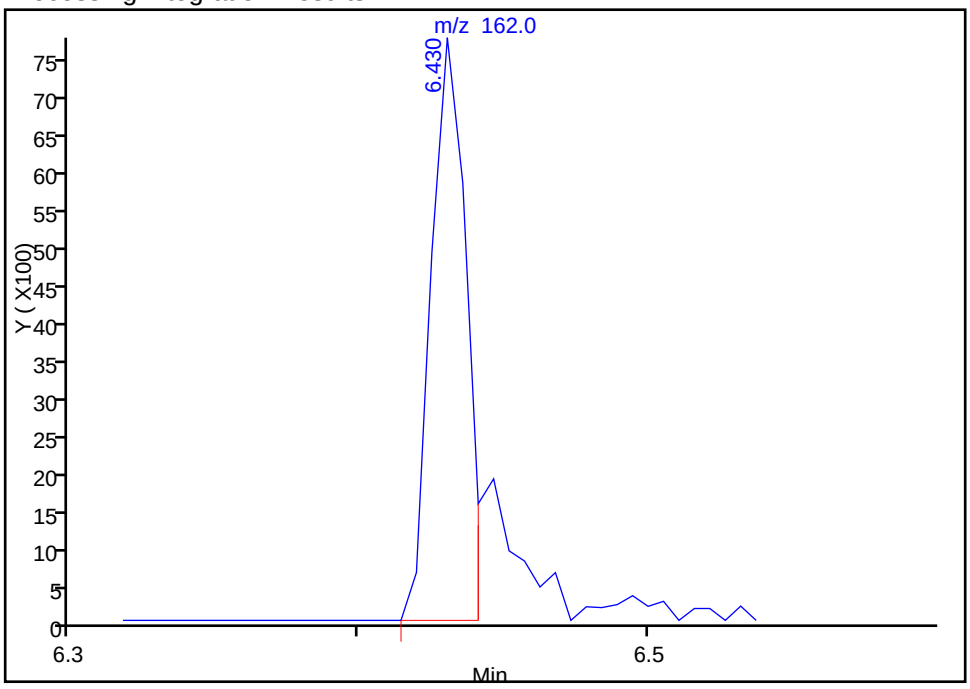
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005A.D
Injection Date: 05-Oct-2016 15:14:30 Instrument ID: SV5
Lims ID: IC CS-1 HSL
Client ID:
Operator ID: ALS Bottle#: 11 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

55 2,4-Dichlorophenol, CAS: 120-83-2

Signal: 1

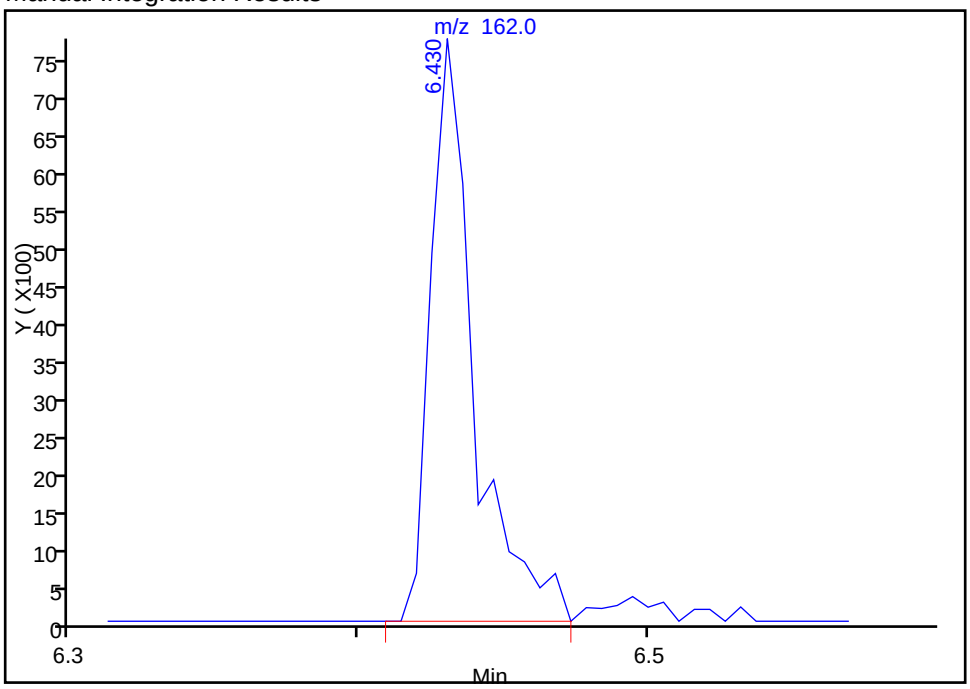
Processing Integration Results

RT: 6.43
Area: 6673
Amount: 1.000000
Amount Units: ug/ml



Manual Integration Results

RT: 6.43
Area: 8181
Amount: 1.111840
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:08:43
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

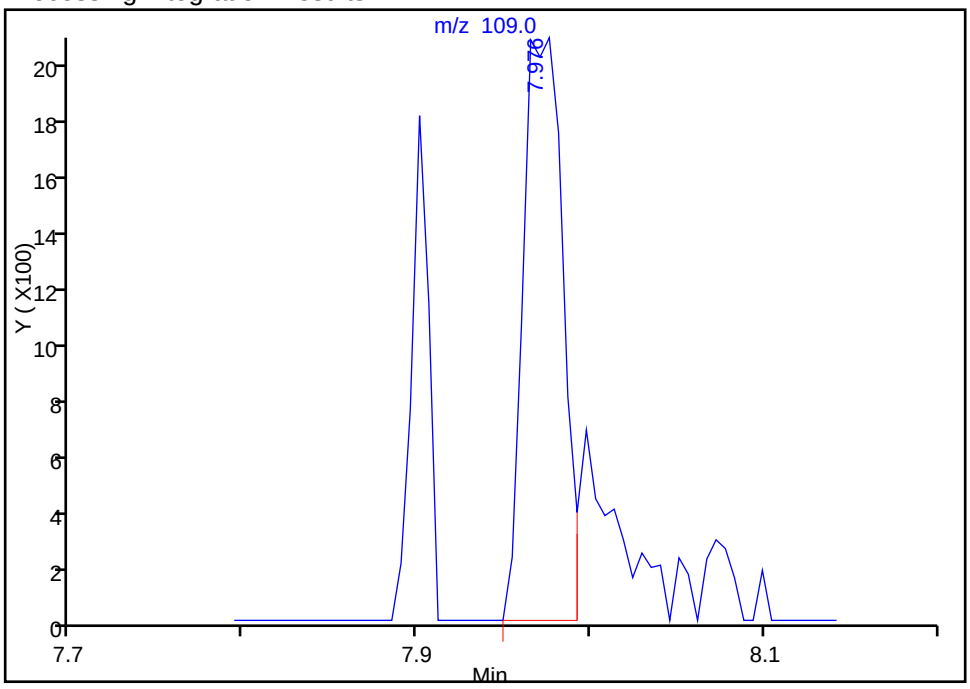
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005A.D
Injection Date: 05-Oct-2016 15:14:30 Instrument ID: SV5
Lims ID: IC CS-1 HSL
Client ID:
Operator ID: ALS Bottle#: 11 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

91 4-Nitrophenol, CAS: 100-02-7

Signal: 1

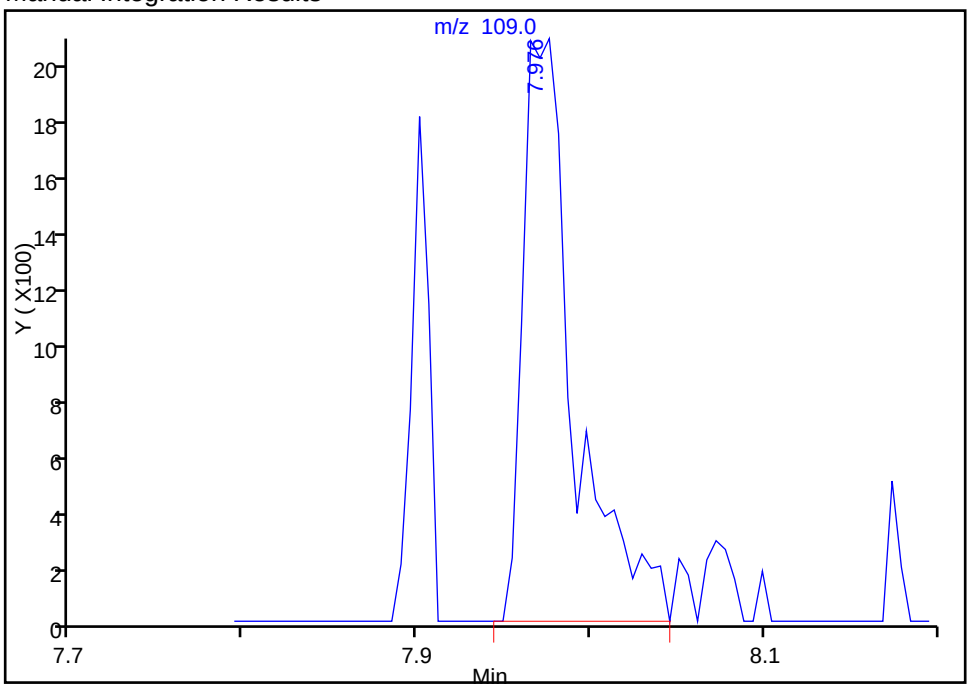
Processing Integration Results

RT: 7.98
Area: 3311
Amount: 2.000000
Amount Units: ug/ml



Manual Integration Results

RT: 7.98
Area: 4252
Amount: 1.868051
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:08:43
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

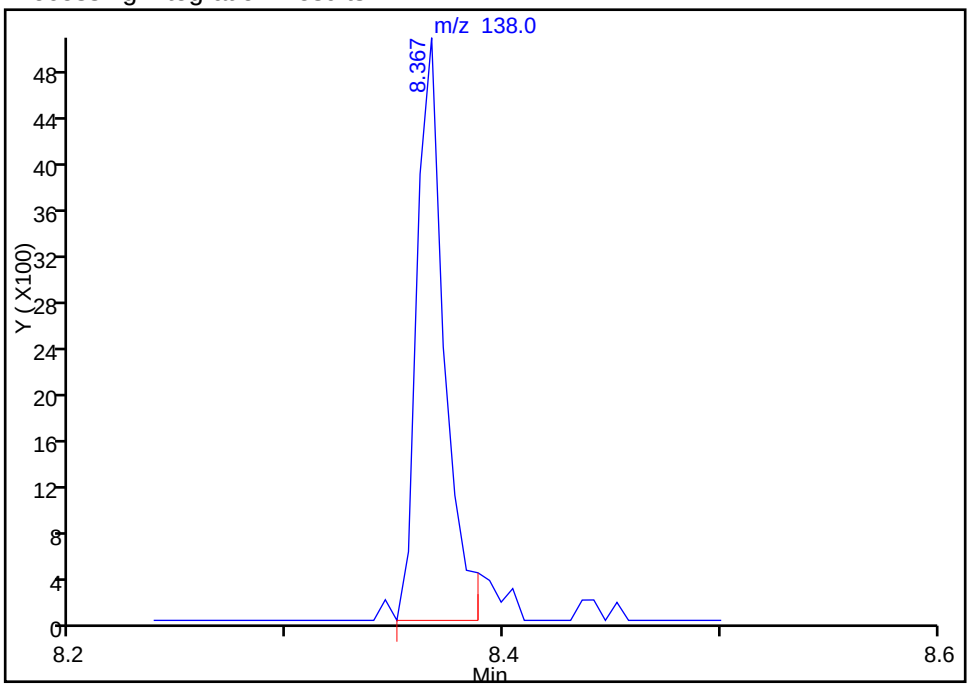
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005A.D
Injection Date: 05-Oct-2016 15:14:30 Instrument ID: SV5
Lims ID: IC CS-1 HSL
Client ID:
Operator ID: ALS Bottle#: 11 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

103 4-Nitroaniline, CAS: 100-01-6

Signal: 1

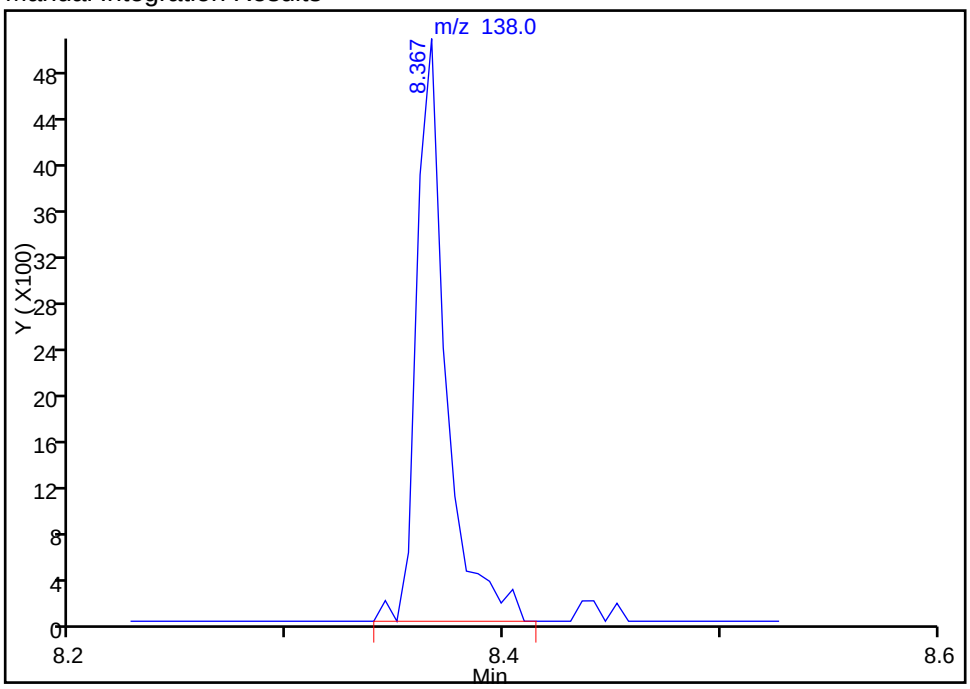
Processing Integration Results

RT: 8.37
Area: 4410
Amount: 1.000000
Amount Units: ug/ml



Manual Integration Results

RT: 8.37
Area: 4714
Amount: 1.049181
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:08:43
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

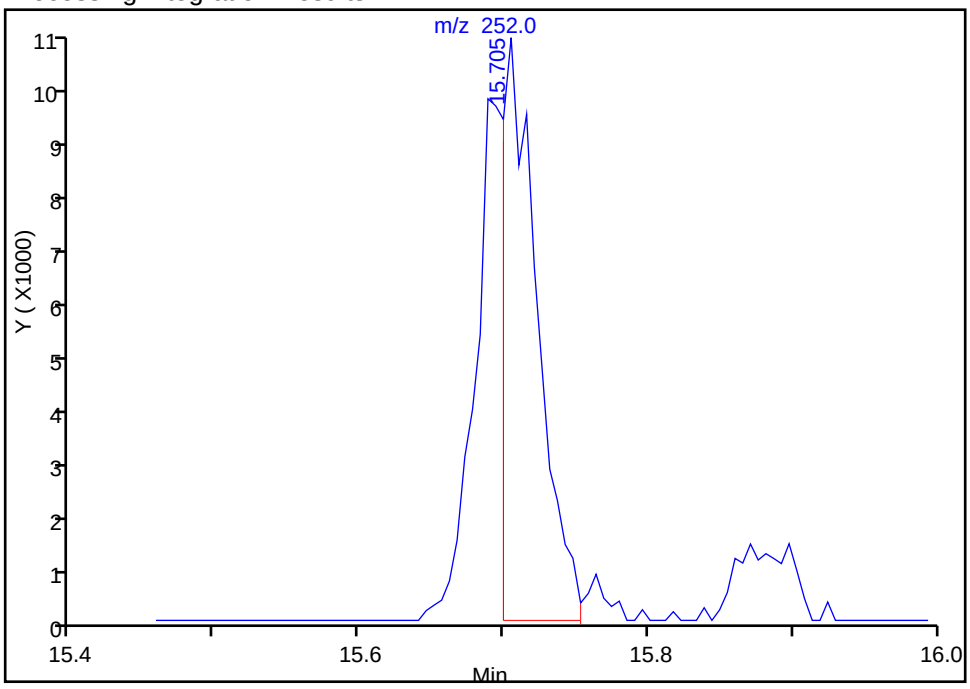
Data File:	\\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005A.D				
Injection Date:	05-Oct-2016 15:14:30	Instrument ID:	SV5		
Lims ID:	IC CS-1 HSL				
Client ID:					
Operator ID:		ALS Bottle#:	11	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		
Column:	HP-5MS (0.25 mm)	Detector	MS SCAN		

157 Benzo[a]pyrene, CAS: 50-32-8

Signal: 1

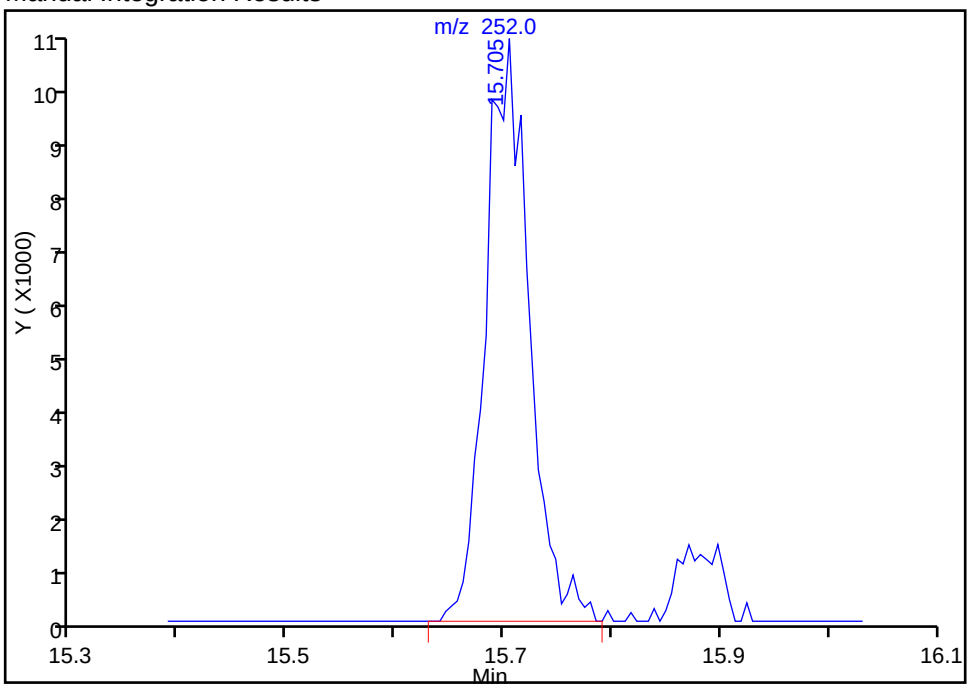
Processing Integration Results

RT: 15.70
Area: 17894
Amount: 1.000000
Amount Units: ug/ml



Manual Integration Results

RT: 15.70
Area: 29467
Amount: 1.127456
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:08:43

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

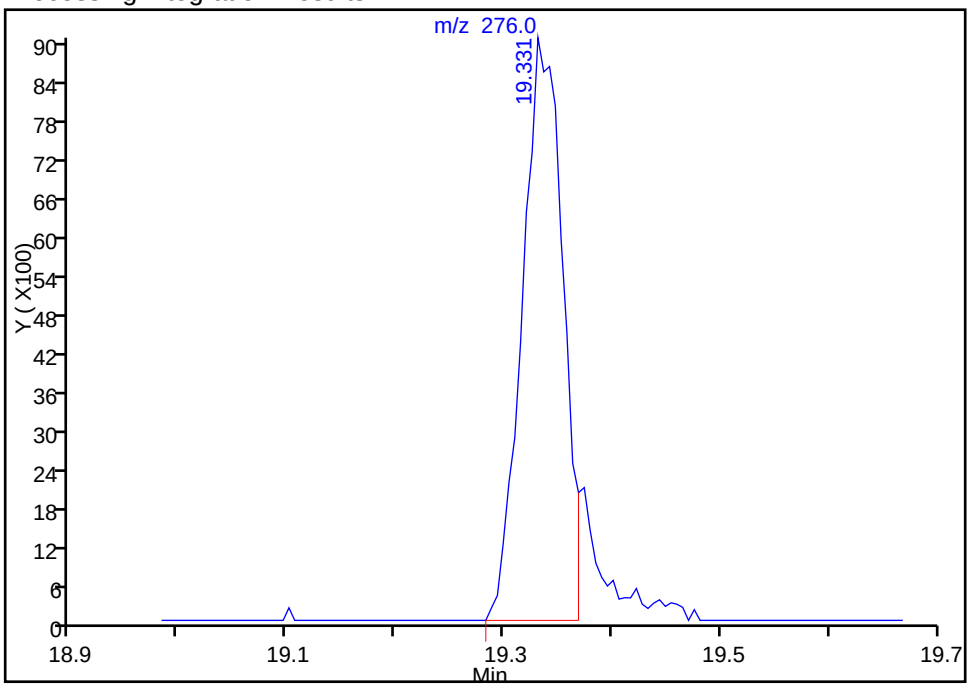
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005A.D
Injection Date: 05-Oct-2016 15:14:30 Instrument ID: SV5
Lims ID: IC CS-1 HSL
Client ID:
Operator ID: ALS Bottle#: 11 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

163 Benzo[g,h,i]perylene, CAS: 191-24-2

Signal: 1

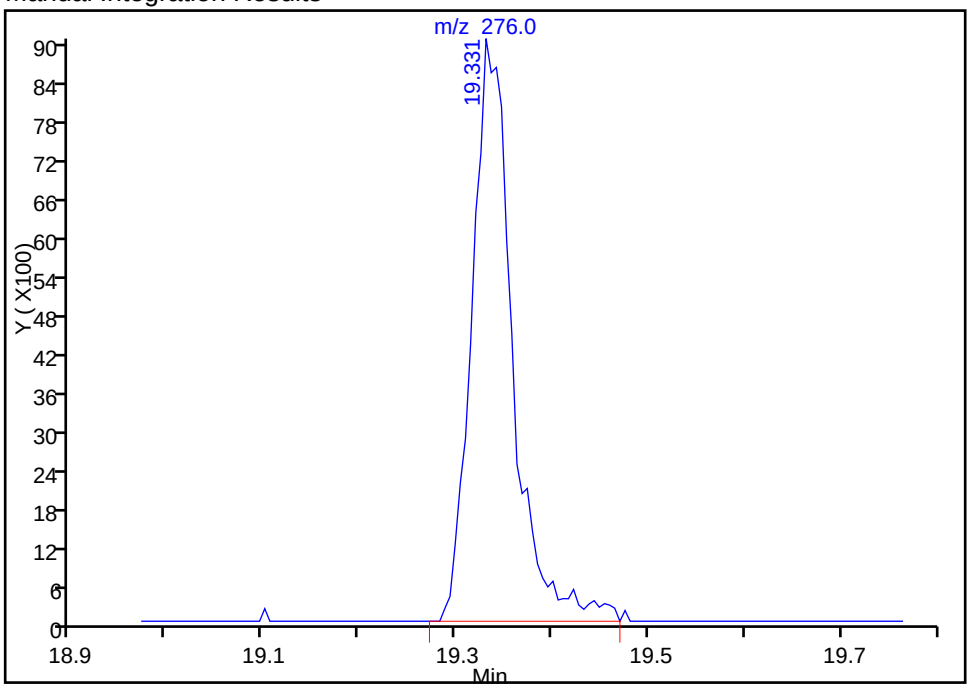
Processing Integration Results

RT: 19.33
Area: 23750
Amount: 1.000000
Amount Units: ug/ml



Manual Integration Results

RT: 19.33
Area: 26869
Amount: 1.232604
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:08:43
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005B.D
Lims ID: IC CS-2 HSL
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 05-Oct-2016 15:41:30 ALS Bottle#: 12 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-2 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:17 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 16:11:34

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	254005	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	826106	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.907	-0.006	100	527065	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.238	-0.005	100	919566	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.399	-0.005	100	967162	40.0	40.0	
* 6 Perylene-d12	264	15.882	15.887	-0.005	100	986251	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	92	17620	2.00	1.99	
$ 8 Phenol-d5	99	5.270	5.275	-0.005	95	21374	2.00	1.99	
$ 9 1,2-Dichlorobenzene-d4	152	5.708	5.708	0.000	98	12210	NC	NC	
$ 10 Nitrobenzene-d5	82	5.997	6.002	-0.005	96	19051	2.00	2.09	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	100	45511	2.00	2.69	
$ 12 2,4,6-Tribromophenol	330	8.591	8.591	0.000	90	4746	2.00	1.97	
$ 13 Terphenyl-d14	244	10.800	10.800	0.000	99	33546	2.00	1.73	
14 1,4-Dioxane	88	2.462	2.456	0.006	95	7071	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	88	13205	2.00	1.97	
16 Pyridine	79	2.852	2.847	0.005	91	24378	2.00	2.08	
26 Phenol	94	5.281	5.286	-0.005	96	22150	2.00	2.07	
27 Aniline	93	5.307	5.313	-0.005	96	29646	2.00	2.19	
28 Bis(2-chloroethyl)ether	93	5.350	5.350	0.000	94	19206	2.00	2.21	
30 2-Chlorophenol	128	5.420	5.419	0.001	94	19142	2.00	2.18	
31 1,3-Dichlorobenzene	146	5.543	5.543	0.001	95	21017	2.00	2.15	
32 1,4-Dichlorobenzene	146	5.596	5.601	-0.005	98	20838	2.00	2.17	
33 Benzyl alcohol	108	5.676	5.682	-0.006	97	10859	2.00	1.83	
34 1,2-Dichlorobenzene	146	5.719	5.724	-0.005	98	18541	2.00	1.99	
35 2-Methylphenol	108	5.762	5.767	-0.005	97	14383	2.00	1.80	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	97	25960	2.00	1.89	
39 3 & 4 Methylphenol	108	5.880	5.879	0.001	97	13637	2.00	1.57	
40 N-Nitrosodi-n-propylamine	70	5.874	5.879	-0.005	97	11151	2.00	1.59	
42 Acetophenone	105	5.880	5.885	-0.005	97	22277	2.00	2.14	
45 Hexachloroethane	117	5.981	5.986	-0.005	95	6939	2.00	1.70	
46 Nitrobenzene	77	6.013	6.013	0.000	94	16626	2.00	2.01	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.185	6.184	0.001	98	30462	2.00	2.08	
49 2-Nitrophenol	139	6.249	6.249	0.000	78	6439	2.00	1.65	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	78	14577	2.00	1.95	
52 Bis(2-chloroethoxy)methane	93	6.324	6.323	0.001	94	19578	2.00	2.16	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	96	11777	2.00	1.95	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	94	14437	2.00	2.09	
58 Naphthalene	128	6.548	6.548	0.000	99	52339	2.00	2.65	
59 4-Chloroaniline	127	6.570	6.575	-0.005	96	19773	2.00	2.16	
60 2,6-Dichlorophenol	162	6.586	6.585	0.001	43	12289	2.00	2.09	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	97	9028	2.00	2.21	
67 4-Chloro-3-methylphenol	107	6.917	6.912	0.005	95	14556	2.00	2.12	
69 2-Methylnaphthalene	142	7.062	7.062	0.000	98	34217	2.00	2.37	
70 1-Methylnaphthalene	142	7.137	7.142	-0.005	23	32993	2.00	2.47	
71 Hexachlorocyclopentadiene	237	7.185	7.190	-0.005	94	9193	2.00	1.93	
72 1,2,4,5-Tetrachlorobenzene	216	7.195	7.195	0.000	94	18765	2.00	2.49	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	96	8942	2.00	1.86	
75 2,4,5-Trichlorophenol	196	7.308	7.302	0.006	95	10953	2.00	2.17	M
77 1,1'-Biphenyl	154	7.415	7.415	0.000	99	43253	2.00	2.33	
78 2-Chloronaphthalene	162	7.441	7.447	-0.006	99	34001	2.00	2.35	
80 2-Nitroaniline	65	7.506	7.505	0.001	92	10804	2.00	2.00	
84 Dimethyl phthalate	163	7.629	7.634	-0.005	98	34880	2.00	2.10	
85 1,3-Dinitrobenzene	168	7.661	7.666	-0.005	85	4289	2.00	1.52	
86 2,6-Dinitrotoluene	165	7.682	7.687	-0.005	93	7333	2.00	1.86	
87 Acenaphthylene	152	7.784	7.789	-0.005	99	52173	2.00	2.33	
88 3-Nitroaniline	138	7.837	7.837	0.000	94	8467	2.00	1.87	
89 2,4-Dinitrophenol	184	7.928	7.923	0.005	36	2492	4.00	1.04	
90 Acenaphthene	153	7.928	7.933	-0.005	96	32920	2.00	2.28	
91 4-Nitrophenol	109	7.966	7.960	0.006	33	8492	4.00	3.64	M
92 2,4-Dinitrotoluene	165	8.024	8.030	-0.006	92	9544	2.00	1.78	
94 Dibenzofuran	168	8.073	8.078	-0.005	100	48806	2.00	2.38	
97 2,3,4,6-Tetrachlorophenol	232	8.174	8.174	0.000	95	6427	2.00	1.60	
99 Diethyl phthalate	149	8.217	8.222	-0.005	94	36603	2.00	2.20	
101 4-Chlorophenyl phenyl ethe	204	8.345	8.351	-0.006	94	18212	2.00	2.16	
103 4-Nitroaniline	138	8.361	8.372	-0.011	94	8997	2.00	1.95	
104 Fluorene	166	8.372	8.377	-0.005	99	39319	2.00	2.33	
105 4,6-Dinitro-2-methylphenol	198	8.394	8.399	-0.005	87	7863	4.00	2.48	M
107 Diphenylamine	169	8.447	8.452	-0.005	97	27424	NC	NC	
106 N-Nitrosodiphenylamine	169	8.447	8.452	-0.005	97	27424	2.00	2.11	
108 Azobenzene	77	8.490	8.495	-0.005	97	41669	2.00	2.24	
115 4-Bromophenyl phenyl ether	248	8.795	8.794	0.001	94	10652	2.00	2.02	
117 Hexachlorobenzene	284	8.886	8.891	-0.005	97	11999	2.00	2.21	
120 Pentachlorophenol	266	9.057	9.057	0.000	92	4897	4.00	1.70	M
125 Phenanthrene	178	9.255	9.260	-0.005	100	56985	2.00	2.41	
126 Anthracene	178	9.303	9.308	-0.005	100	56900	2.00	2.33	
127 Carbazole	167	9.436	9.442	-0.006	100	51523	2.00	2.28	
129 Di-n-butyl phthalate	149	9.731	9.730	0.001	100	57363	2.00	2.07	
134 Fluoranthene	202	10.410	10.415	-0.005	100	55534	2.00	2.06	
136 Pyrene	202	10.661	10.666	-0.005	21	54037	2.00	1.93	
142 Butyl benzyl phthalate	149	11.410	11.410	0.000	99	22662	2.00	1.56	
150 Benzo[a]anthracene	228	12.373	12.378	-0.005	98	60435	2.00	2.14	
149 Bis(2-ethylhexyl) phthalat	149	12.373	12.378	-0.005	73	36146	2.00	1.81	
151 Chrysene	228	12.437	12.448	-0.011	99	56444	2.00	2.10	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.822	13.822	0.000	99	48911	2.00	1.41	
155 Benzo[b]fluoranthene	252	14.801	14.822	-0.021	99	46288	2.00	1.56	
156 Benzo[k]fluoranthene	252	14.865	14.897	-0.032	99	48162	2.00	1.65	
157 Benzo[a]pyrene	252	15.705	15.726	-0.021	99	52672	2.00	1.89	
161 Indeno[1,2,3-cd]pyrene	276	18.743	18.775	-0.032	44	44753	2.00	1.89	
162 Dibenz(a,h)anthracene	278	18.807	18.834	-0.027	98	47977	2.00	1.95	M
163 Benzo[g,h,i]perylene	276	19.331	19.363	-0.032	99	53292	2.00	2.30	M

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

MSHSLL2_00022 Amount Added: 1.00 Units: mL

Report Date: 05-Oct-2016 20:43:19 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005B.D

Injection Date: 05-Oct-2016 15:41:30 Instrument ID: SV5 Operator ID:

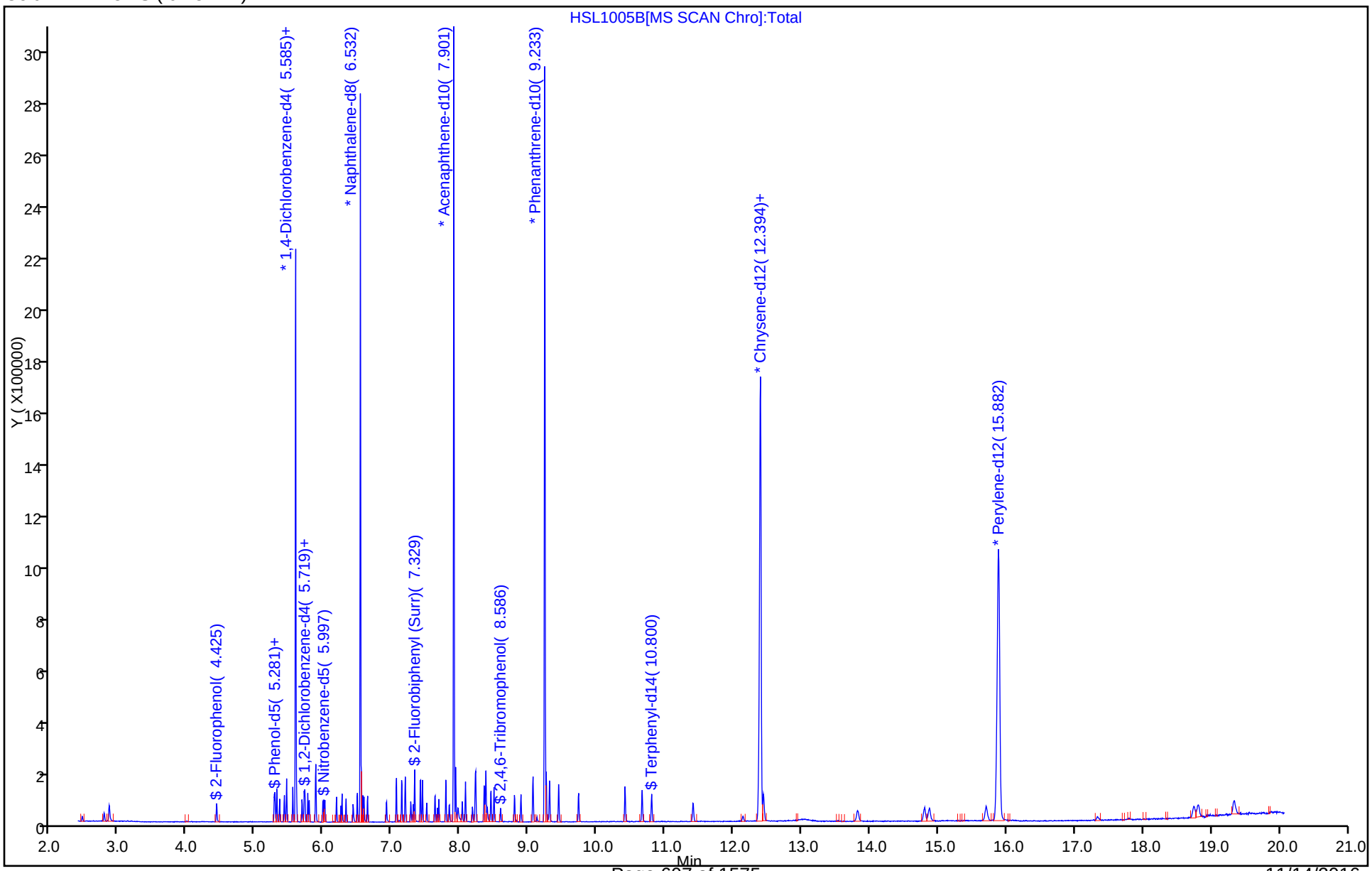
Lims ID: IC CS-2 HSL Worklist Smp#: 13

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 12

Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

Column: HP-5MS (0.25 mm)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

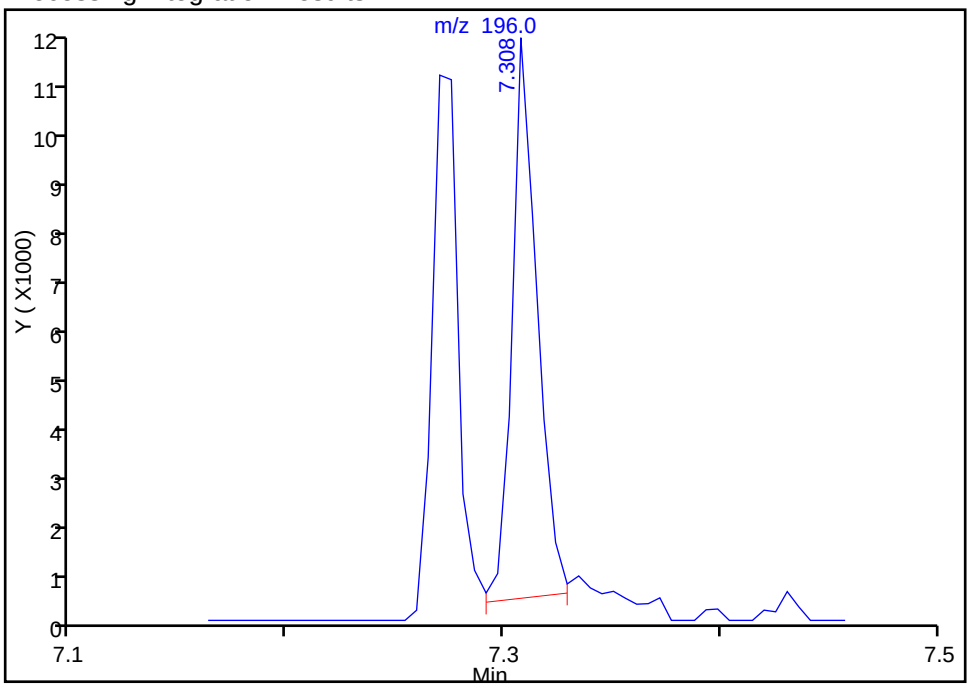
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005B.D
Injection Date: 05-Oct-2016 15:41:30 Instrument ID: SV5
Lims ID: IC CS-2 HSL
Client ID:
Operator ID: ALS Bottle#: 12 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

75 2,4,5-Trichlorophenol, CAS: 95-95-4

Signal: 1

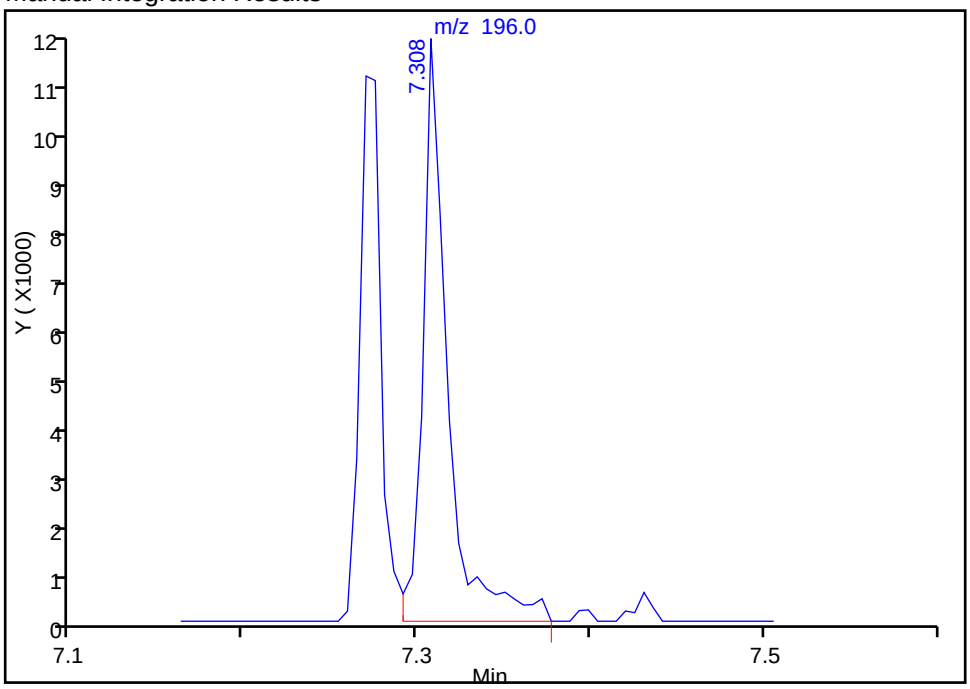
Processing Integration Results

RT: 7.31
Area: 8556
Amount: 1.706516
Amount Units: ug/ml



Manual Integration Results

RT: 7.31
Area: 10953
Amount: 2.167347
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:11:34
Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

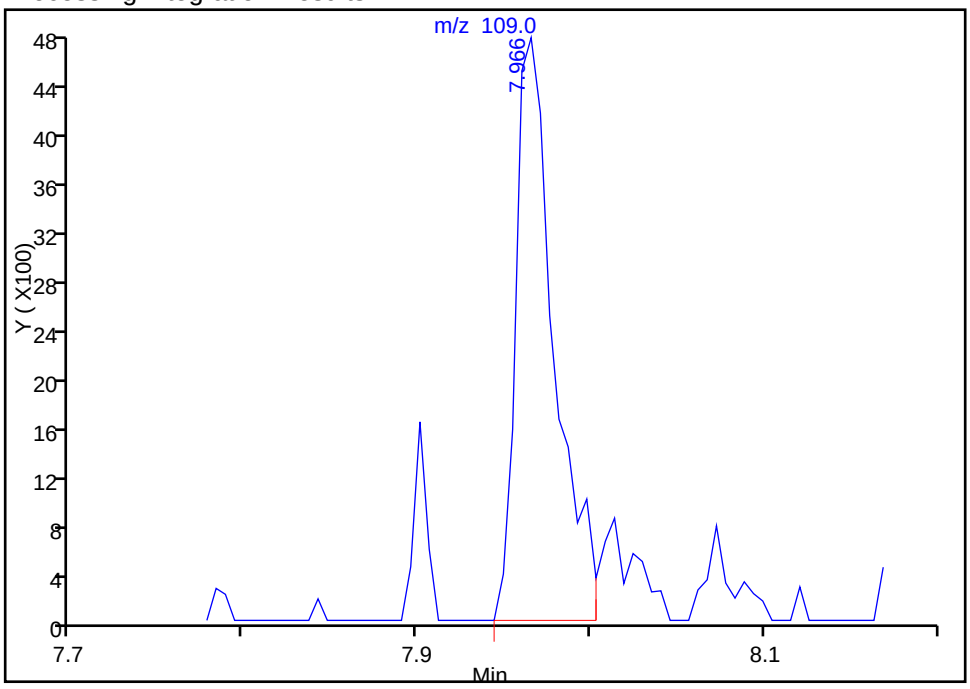
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005B.D
Injection Date: 05-Oct-2016 15:41:30 Instrument ID: SV5
Lims ID: IC CS-2 HSL
Client ID:
Operator ID: ALS Bottle#: 12 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

91 4-Nitrophenol, CAS: 100-02-7

Signal: 1

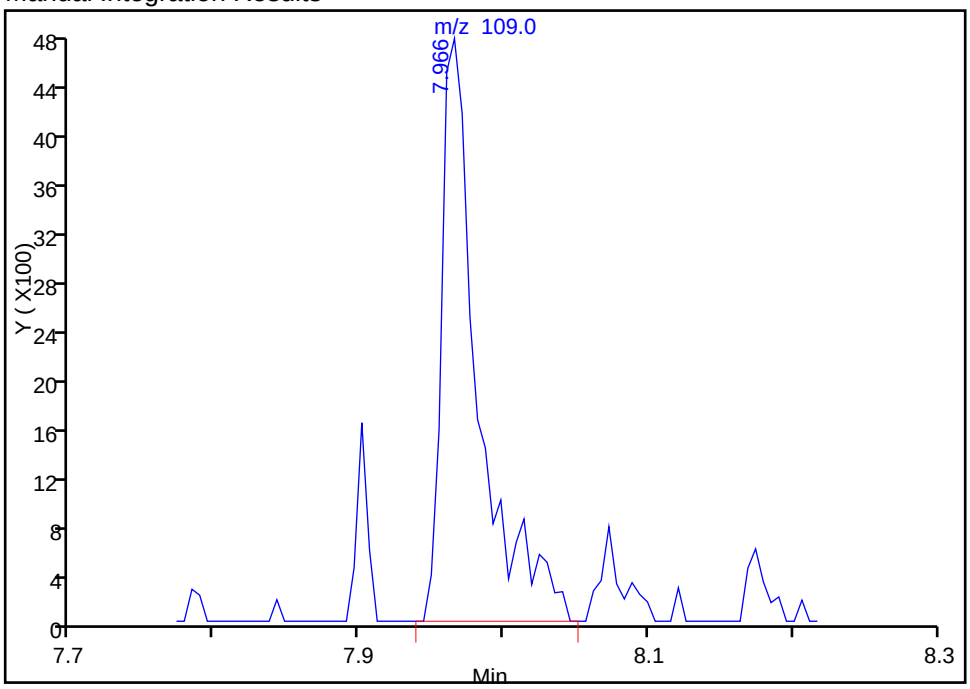
Processing Integration Results

RT: 7.97
Area: 7433
Amount: 3.683059
Amount Units: ug/ml



Manual Integration Results

RT: 7.97
Area: 8492
Amount: 3.641642
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:11:34
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

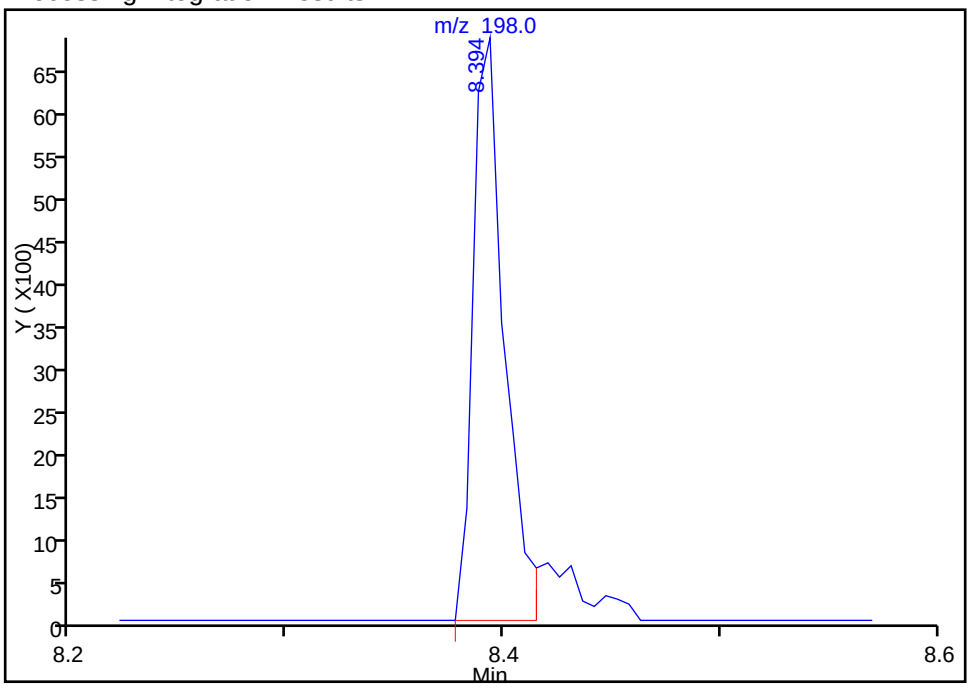
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005B.D
Injection Date: 05-Oct-2016 15:41:30 Instrument ID: SV5
Lims ID: IC CS-2 HSL
Client ID:
Operator ID: ALS Bottle#: 12 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

105 4,6-Dinitro-2-methylphenol, CAS: 534-52-1

Signal: 1

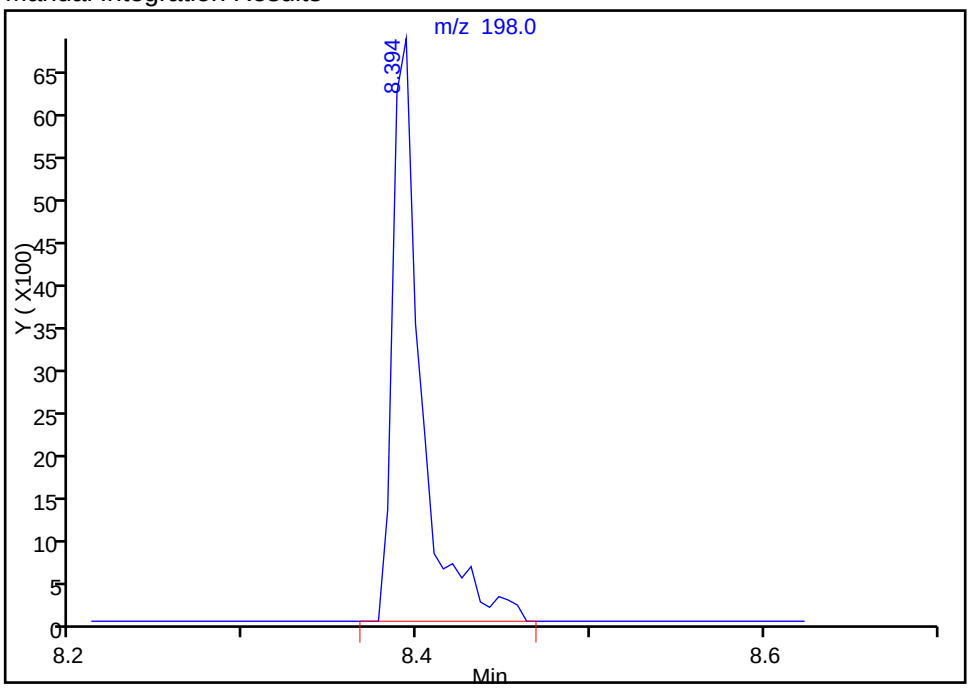
Processing Integration Results

RT: 8.39
Area: 6915
Amount: 4.564235
Amount Units: ug/ml



Manual Integration Results

RT: 8.39
Area: 7863
Amount: 2.483291
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:11:34
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

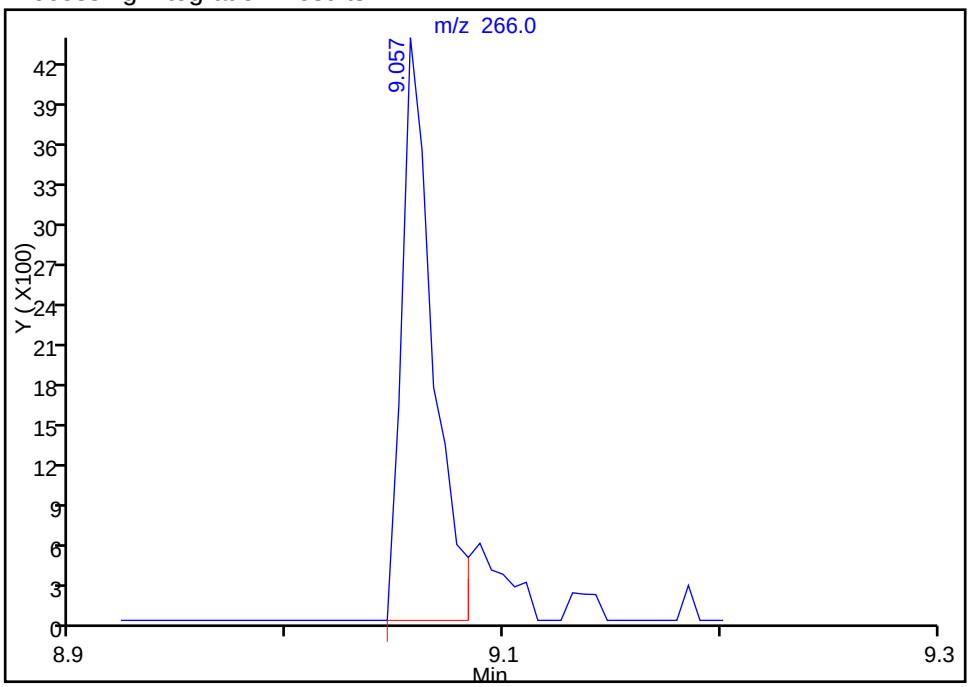
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005B.D
Injection Date: 05-Oct-2016 15:41:30 Instrument ID: SV5
Lims ID: IC CS-2 HSL
Client ID:
Operator ID: ALS Bottle#: 12 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

120 Pentachlorophenol, CAS: 87-86-5

Signal: 1

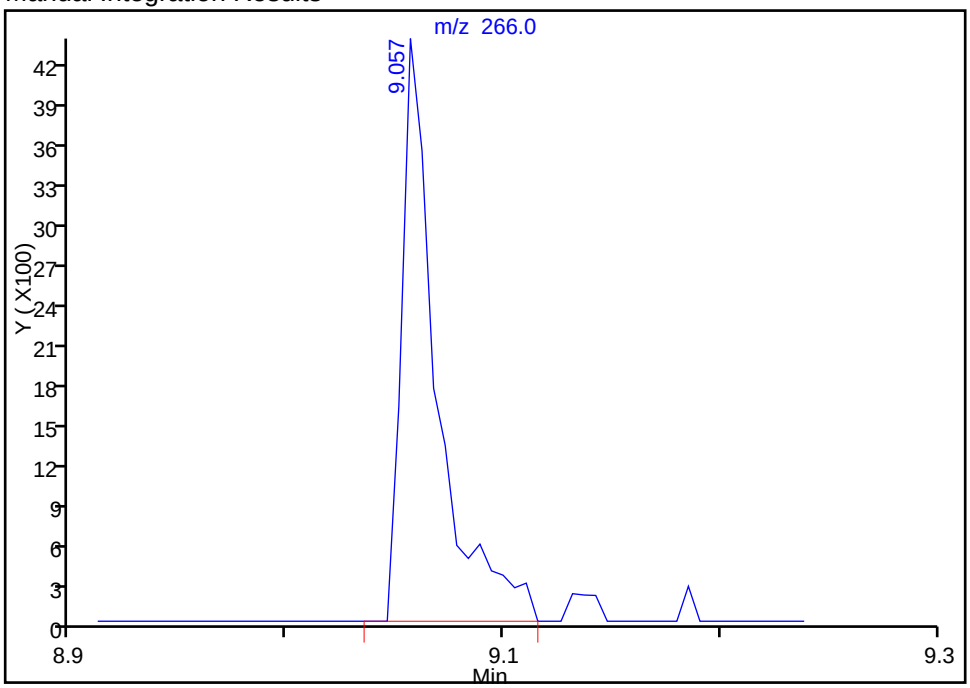
Processing Integration Results

RT: 9.06
Area: 4313
Amount: 4.337484
Amount Units: ug/ml



Manual Integration Results

RT: 9.06
Area: 4897
Amount: 1.698541
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:11:34
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

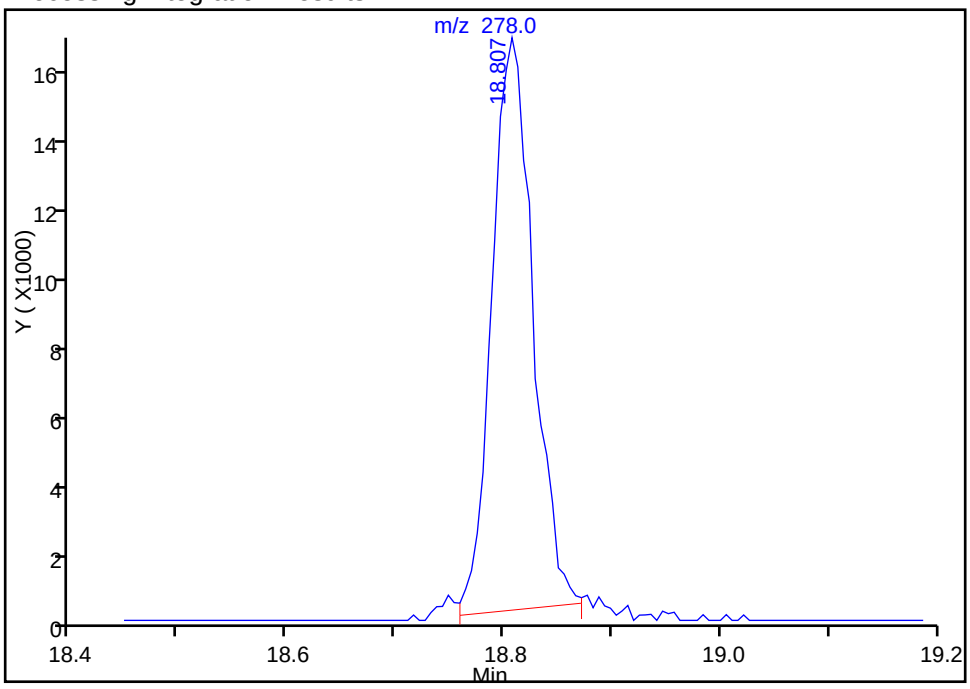
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005B.D
Injection Date: 05-Oct-2016 15:41:30 Instrument ID: SV5
Lims ID: IC CS-2 HSL
Client ID:
Operator ID: ALS Bottle#: 12 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

162 Dibenz(a,h)anthracene, CAS: 53-70-3

Signal: 1

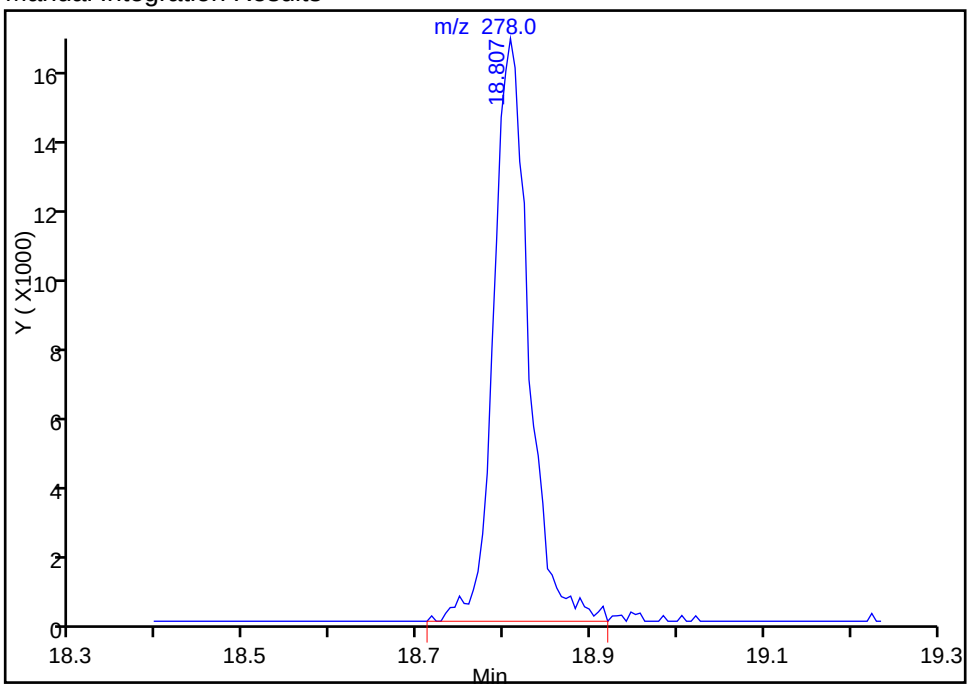
Processing Integration Results

RT: 18.81
Area: 43824
Amount: 1.916326
Amount Units: ug/ml



Manual Integration Results

RT: 18.81
Area: 47977
Amount: 1.954400
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:11:34
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

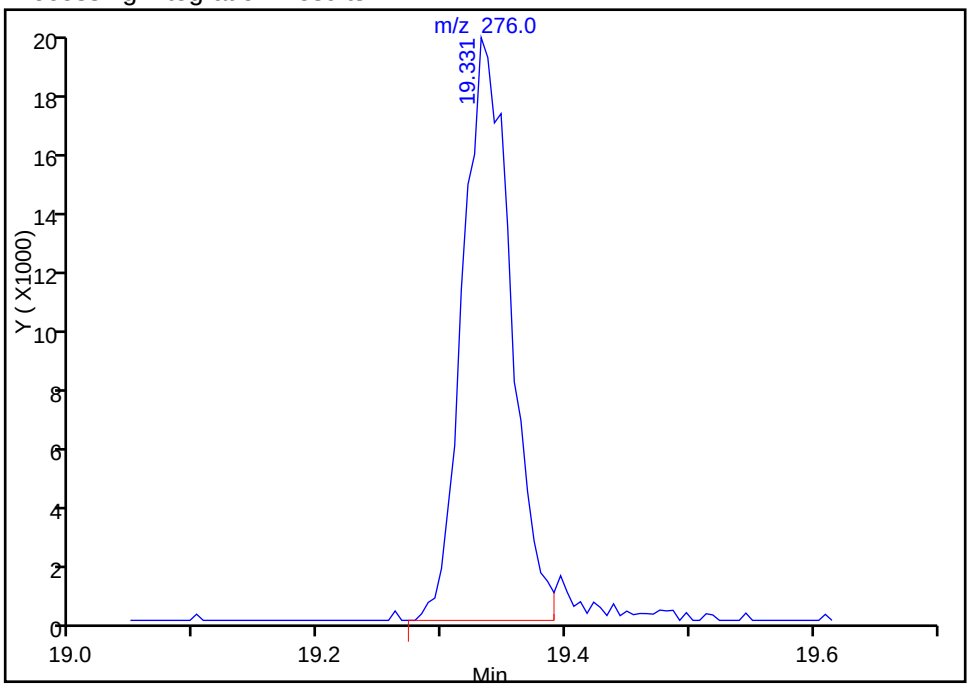
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005B.D
Injection Date: 05-Oct-2016 15:41:30 Instrument ID: SV5
Lims ID: IC CS-2 HSL
Client ID:
Operator ID: ALS Bottle#: 12 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

163 Benzo[g,h,i]perylene, CAS: 191-24-2

Signal: 1

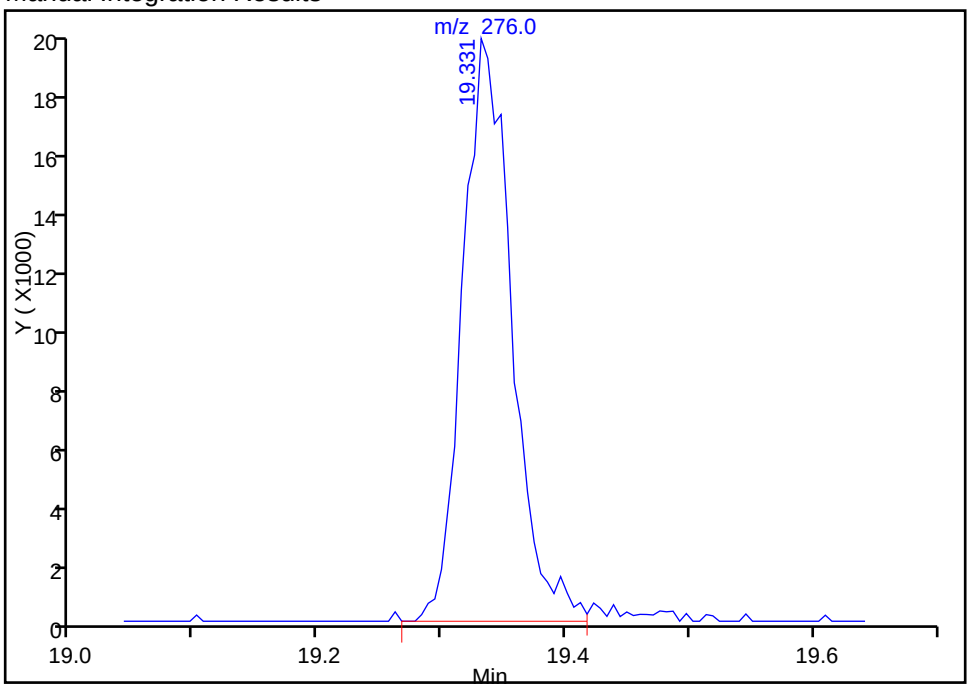
Processing Integration Results

RT: 19.33
Area: 52103
Amount: 1.907249
Amount Units: ug/ml



Manual Integration Results

RT: 19.33
Area: 53292
Amount: 2.297962
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 16:11:34
Audit Action: Split an Integrated Peak Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005C.D
Lims ID: IC CS-3 HSL
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 05-Oct-2016 16:09:30 ALS Bottle#: 13 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-3 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:21 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 17:01:53

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	252153	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	923615	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.907	-0.006	100	574572	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.238	-0.005	100	960039	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.399	-0.005	100	1070759	40.0	40.0	
* 6 Perylene-d12	264	15.881	15.887	-0.006	99	823898	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	92	43562	5.00	4.97	
$ 8 Phenol-d5	99	5.270	5.275	-0.005	97	51465	5.00	4.84	
$ 9 1,2-Dichlorobenzene-d4	152	5.708	5.708	0.000	97	30045	NC	NC	
$ 10 Nitrobenzene-d5	82	5.997	6.002	-0.005	97	59030	5.00	5.78	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	100	102868	5.00	5.58	
$ 12 2,4,6-Tribromophenol	330	8.586	8.591	-0.005	96	12994	5.00	4.96	
$ 13 Terphenyl-d14	244	10.800	10.800	0.000	100	89625	5.00	4.17	
14 1,4-Dioxane	88	2.456	2.456	0.000	91	15301	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	90	31589	5.00	4.75	
16 Pyridine	79	2.847	2.847	0.000	94	57198	5.00	4.91	
26 Phenol	94	5.280	5.286	-0.006	95	53449	5.00	5.04	
27 Aniline	93	5.307	5.313	-0.005	98	70127	5.00	5.23	
28 Bis(2-chloroethyl)ether	93	5.350	5.350	0.000	94	44293	5.00	5.13	
30 2-Chlorophenol	128	5.419	5.419	0.000	94	42515	5.00	4.87	
31 1,3-Dichlorobenzene	146	5.543	5.543	0.000	98	49953	5.00	5.15	
32 1,4-Dichlorobenzene	146	5.596	5.601	-0.005	97	50190	5.00	5.28	
33 Benzyl alcohol	108	5.676	5.682	-0.006	96	26646	5.00	4.53	
34 1,2-Dichlorobenzene	146	5.719	5.724	-0.005	97	48477	5.00	5.24	
35 2-Methylphenol	108	5.762	5.767	-0.005	98	38744	5.00	4.89	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	97	77565	5.00	5.68	
39 3 & 4 Methylphenol	108	5.874	5.879	-0.005	96	46921	5.00	5.44	
40 N-Nitrosodi-n-propylamine	70	5.874	5.879	-0.005	96	37438	5.00	5.39	
42 Acetophenone	105	5.879	5.885	-0.006	96	67936	5.00	5.85	
45 Hexachloroethane	117	5.981	5.986	-0.005	97	21624	5.00	5.34	
46 Nitrobenzene	77	6.013	6.013	0.000	95	53149	5.00	5.74	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.184	6.184	0.000	99	86781	5.00	5.31	
49 2-Nitrophenol	139	6.249	6.249	0.000	84	20152	5.00	4.61	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	84	42122	5.00	5.03	
52 Bis(2-chloroethoxy)methane	93	6.323	6.323	0.000	95	52898	5.00	5.21	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	96	34576	5.00	5.12	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	96	41103	5.00	5.33	
58 Naphthalene	128	6.548	6.548	0.000	100	124540	5.00	5.64	
59 4-Chloroaniline	127	6.569	6.575	-0.006	98	55356	5.00	5.41	
60 2,6-Dichlorophenol	162	6.585	6.585	0.000	98	32952	5.00	5.02	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	97	24975	5.00	5.46	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	95	36842	5.00	4.80	
69 2-Methylnaphthalene	142	7.062	7.062	0.000	99	87098	5.00	5.39	
70 1-Methylnaphthalene	142	7.136	7.142	-0.006	23	80022	5.00	5.36	
71 Hexachlorocyclopentadiene	237	7.190	7.190	0.000	96	22426	5.00	4.32	
72 1,2,4,5-Tetrachlorobenzene	216	7.190	7.195	-0.005	96	41872	5.00	5.09	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	97	24217	5.00	4.63	
75 2,4,5-Trichlorophenol	196	7.308	7.302	0.006	97	25760	5.00	4.68	
77 1,1'-Biphenyl	154	7.415	7.415	0.000	99	103795	5.00	5.13	
78 2-Chloronaphthalene	162	7.441	7.447	-0.006	99	81836	5.00	5.19	
80 2-Nitroaniline	65	7.505	7.505	0.000	94	26044	5.00	4.43	
84 Dimethyl phthalate	163	7.628	7.634	-0.006	100	94716	5.00	5.24	
85 1,3-Dinitrobenzene	168	7.661	7.666	-0.005	90	13021	5.00	4.23	
86 2,6-Dinitrotoluene	165	7.682	7.687	-0.005	91	18465	5.00	4.30	
87 Acenaphthylene	152	7.784	7.789	-0.005	99	123723	5.00	5.07	
88 3-Nitroaniline	138	7.832	7.837	-0.005	93	22419	5.00	4.54	
89 2,4-Dinitrophenol	184	7.923	7.923	0.000	36	12153	10.0	4.66	
90 Acenaphthene	153	7.928	7.933	-0.005	97	81234	5.00	5.15	
91 4-Nitrophenol	109	7.955	7.960	-0.005	34	21442	10.0	8.43	
92 2,4-Dinitrotoluene	165	8.024	8.030	-0.006	94	25859	5.00	4.42	
94 Dibenzofuran	168	8.072	8.078	-0.006	100	112861	5.00	5.04	
97 2,3,4,6-Tetrachlorophenol	232	8.174	8.174	0.000	96	16963	5.00	3.88	
99 Diethyl phthalate	149	8.217	8.222	-0.005	92	93697	5.00	5.16	
101 4-Chlorophenyl phenyl ethe	204	8.345	8.351	-0.006	97	45360	5.00	4.94	
103 4-Nitroaniline	138	8.361	8.372	-0.011	97	22009	5.00	4.39	
104 Fluorene	166	8.372	8.377	-0.005	98	94279	5.00	5.11	
105 4,6-Dinitro-2-methylphenol	198	8.388	8.399	-0.011	93	23059	10.0	6.98	
107 Diphenylamine	169	8.447	8.452	-0.005	99	68011	NC	NC	
106 N-Nitrosodiphenylamine	169	8.447	8.452	-0.005	99	68011	5.00	5.01	
108 Azobenzene	77	8.490	8.495	-0.005	98	101165	5.00	5.20	
115 4-Bromophenyl phenyl ether	248	8.794	8.794	0.000	95	28474	5.00	5.16	
117 Hexachlorobenzene	284	8.885	8.891	-0.006	98	30895	5.00	5.45	
120 Pentachlorophenol	266	9.057	9.057	0.000	97	18372	10.0	6.10	M
125 Phenanthrene	178	9.254	9.260	-0.006	100	130175	5.00	5.28	
126 Anthracene	178	9.303	9.308	-0.005	100	139232	5.00	5.46	
127 Carbazole	167	9.436	9.442	-0.006	100	122901	5.00	5.20	
129 Di-n-butyl phthalate	149	9.730	9.730	0.000	100	144762	5.00	5.01	
134 Fluoranthene	202	10.410	10.415	-0.005	100	127613	5.00	4.54	
136 Pyrene	202	10.661	10.666	-0.005	21	131056	5.00	4.22	
142 Butyl benzyl phthalate	149	11.405	11.410	-0.005	98	67377	5.00	4.18	
150 Benzo[a]anthracene	228	12.367	12.378	-0.011	99	157327	5.00	5.04	
149 Bis(2-ethylhexyl) phthalat	149	12.373	12.378	-0.005	75	106719	5.00	4.84	
151 Chrysene	228	12.437	12.448	-0.011	100	155175	5.00	5.21	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.817	13.822	-0.005	99	130940	5.00	3.42	
155 Benzo[b]fluoranthene	252	14.796	14.822	-0.026	99	116519	5.00	4.71	
156 Benzo[k]fluoranthene	252	14.865	14.897	-0.032	99	118400	5.00	4.85	
157 Benzo[a]pyrene	252	15.705	15.726	-0.021	99	110581	5.00	4.76	
161 Indeno[1,2,3-cd]pyrene	276	18.748	18.775	-0.027	43	100974	5.00	5.09	
162 Dibenz(a,h)anthracene	278	18.807	18.834	-0.027	98	105409	5.00	5.14	
163 Benzo[g,h,i]perylene	276	19.337	19.363	-0.026	97	105988	5.00	5.47	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

MSHSLL3_00022 Amount Added: 1.00 Units: mL

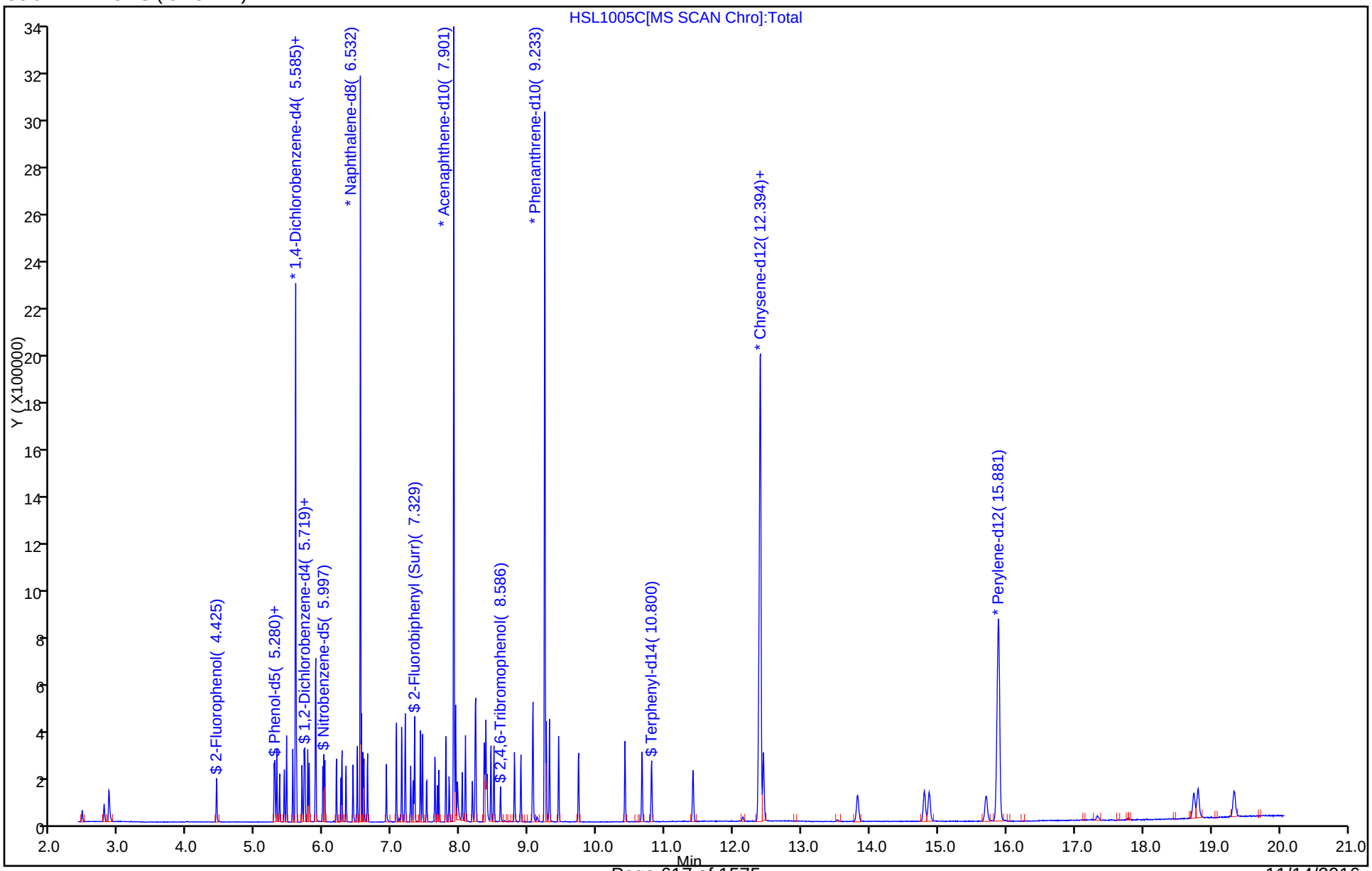
Report Date: 05-Oct-2016 20:43:22 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005C.D

Injection Date:	05-Oct-2016 16:09:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-3 HSL			Worklist Smp#:	14
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	13
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

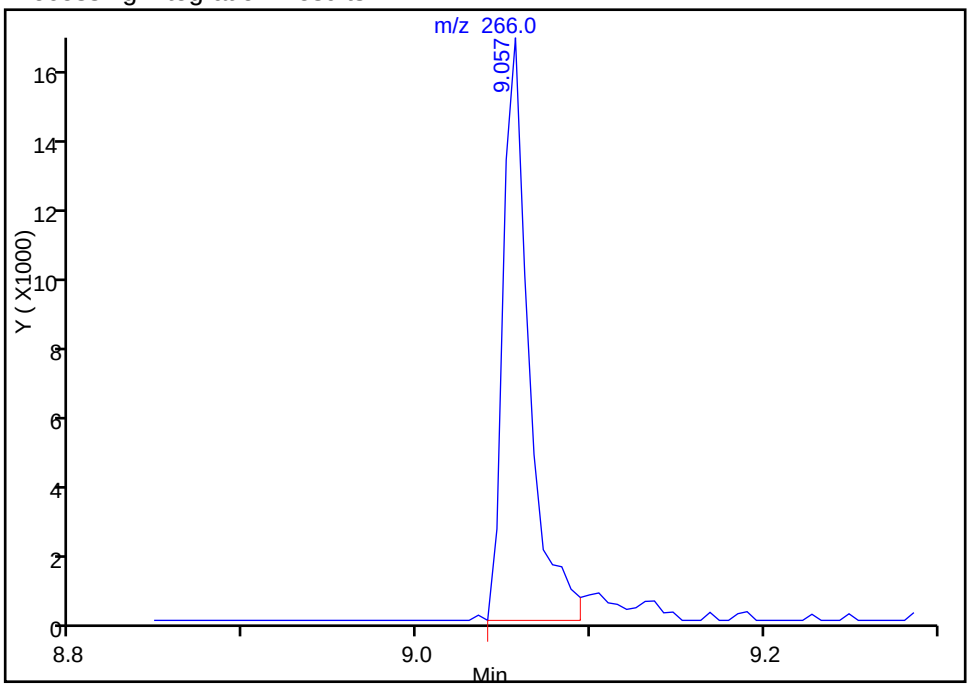
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005C.D
Injection Date: 05-Oct-2016 16:09:30 Instrument ID: SV5
Lims ID: IC CS-3 HSL
Client ID:
Operator ID: ALS Bottle#: 13 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Column: HP-5MS (0.25 mm) Detector MS SCAN

120 Pentachlorophenol, CAS: 87-86-5

Signal: 1

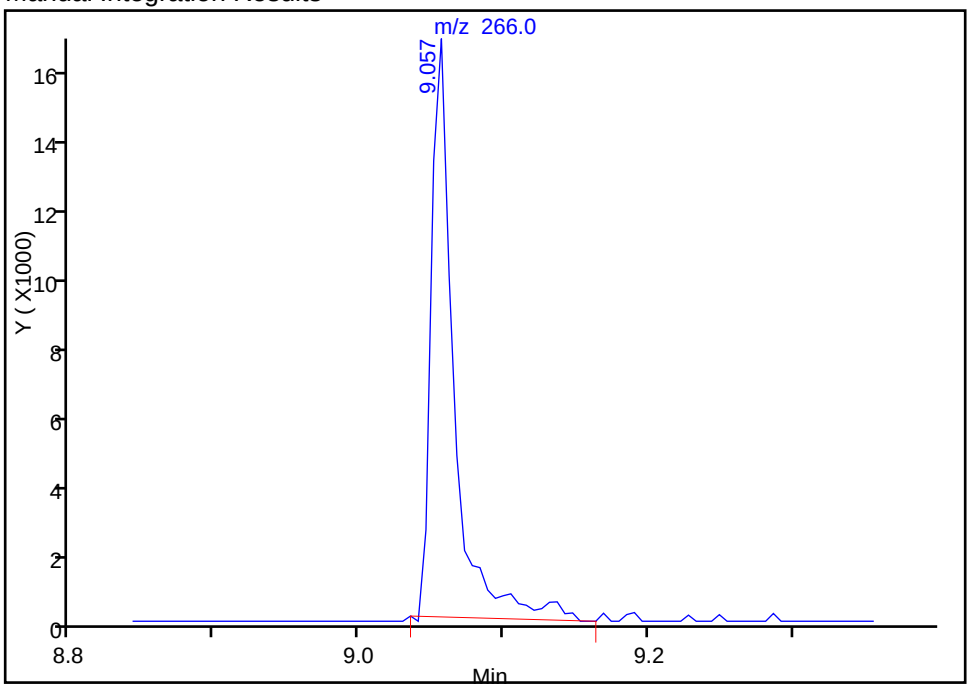
Processing Integration Results

RT: 9.06
Area: 17404
Amount: 13.154733
Amount Units: ug/ml



Manual Integration Results

RT: 9.06
Area: 18372
Amount: 6.103746
Amount Units: ug/ml



Reviewer: onishim, 05-Oct-2016 17:01:53
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005D.D
Lims ID: IC CS-4 HSL
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 05-Oct-2016 16:37:30 ALS Bottle#: 14 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-4 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:26 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 17:29:39

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	229727	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	912198	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.907	-0.006	100	521135	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.238	-0.005	100	786720	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.399	-0.005	100	916873	40.0	40.0	
* 6 Perylene-d12	264	15.881	15.887	-0.006	99	804205	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	91	77549	10.0	9.71	
$ 8 Phenol-d5	99	5.270	5.275	-0.005	97	105701	10.0	10.9	
$ 9 1,2-Dichlorobenzene-d4	152	5.708	5.708	0.000	98	59053	NC	NC	
$ 10 Nitrobenzene-d5	82	5.997	6.002	-0.005	96	114313	10.0	11.3	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	100	190134	10.0	11.4	
$ 12 2,4,6-Tribromophenol	330	8.586	8.591	-0.005	92	23513	10.0	9.90	
$ 13 Terphenyl-d14	244	10.800	10.800	0.000	100	220111	10.0	12.0	
14 1,4-Dioxane	88	2.462	2.456	0.006	89	28228	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	94	63491	10.0	10.5	
16 Pyridine	79	2.847	2.847	0.000	91	111588	10.0	10.5	
26 Phenol	94	5.280	5.286	-0.006	95	106074	10.0	11.0	
27 Aniline	93	5.307	5.313	-0.005	98	135467	10.0	11.1	
28 Bis(2-chloroethyl)ether	93	5.350	5.350	0.000	94	89084	10.0	11.3	
30 2-Chlorophenol	128	5.420	5.419	0.001	96	90894	10.0	11.4	
31 1,3-Dichlorobenzene	146	5.543	5.543	0.001	97	98274	10.0	11.1	
32 1,4-Dichlorobenzene	146	5.596	5.601	-0.005	97	89849	10.0	10.4	
33 Benzyl alcohol	108	5.676	5.682	-0.006	97	58713	10.0	11.0	
34 1,2-Dichlorobenzene	146	5.719	5.724	-0.005	98	93218	10.0	11.1	
35 2-Methylphenol	108	5.762	5.767	-0.005	99	79660	10.0	11.0	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	97	139313	10.0	11.2	
39 3 & 4 Methylphenol	108	5.874	5.879	-0.005	97	93002	10.0	11.8	
40 N-Nitrosodi-n-propylamine	70	5.874	5.879	-0.005	97	72151	10.0	11.4	
42 Acetophenone	105	5.880	5.885	-0.005	97	134936	10.0	11.8	
45 Hexachloroethane	117	5.981	5.986	-0.005	96	42076	10.0	11.4	
46 Nitrobenzene	77	6.013	6.013	0.000	96	105603	10.0	11.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.184	6.184	0.000	99	183445	10.0	11.4	
49 2-Nitrophenol	139	6.249	6.249	0.000	94	47943	10.0	11.1	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	94	97361	10.0	11.8	
52 Bis(2-chloroethoxy)methane	93	6.323	6.323	0.000	95	115033	10.0	11.5	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	97	73248	10.0	11.0	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	97	88174	10.0	11.6	
58 Naphthalene	128	6.548	6.548	0.000	99	240260	10.0	11.0	
59 4-Chloroaniline	127	6.569	6.575	-0.006	97	103581	10.0	10.2	
60 2,6-Dichlorophenol	162	6.586	6.585	0.001	97	66005	10.0	10.2	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	98	45977	10.0	10.2	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	96	66315	10.0	8.75	
69 2-Methylnaphthalene	142	7.062	7.062	0.000	98	169060	10.0	10.6	
70 1-Methylnaphthalene	142	7.136	7.142	-0.006	23	148144	10.0	10.0	
71 Hexachlorocyclopentadiene	237	7.185	7.190	-0.005	95	47688	10.0	10.1	
72 1,2,4,5-Tetrachlorobenzene	216	7.190	7.195	-0.005	95	79219	10.0	10.6	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	98	47441	10.0	10.0	
75 2,4,5-Trichlorophenol	196	7.302	7.302	0.000	98	49425	10.0	9.89	
77 1,1'-Biphenyl	154	7.415	7.415	0.000	99	200172	10.0	10.9	
78 2-Chloronaphthalene	162	7.441	7.447	-0.006	99	152599	10.0	10.7	
80 2-Nitroaniline	65	7.500	7.505	-0.005	92	54451	10.0	10.2	
84 Dimethyl phthalate	163	7.629	7.634	-0.005	100	177985	10.0	10.9	
85 1,3-Dinitrobenzene	168	7.661	7.666	-0.005	92	26594	10.0	9.52	
86 2,6-Dinitrotoluene	165	7.682	7.687	-0.005	96	41415	10.0	10.6	
87 Acenaphthylene	152	7.784	7.789	-0.005	100	232206	10.0	10.5	
88 3-Nitroaniline	138	7.832	7.837	-0.005	92	46341	10.0	10.4	
89 2,4-Dinitrophenol	184	7.917	7.923	-0.006	36	29200	20.0	12.4	
90 Acenaphthene	153	7.928	7.933	-0.005	97	152371	10.0	10.7	
91 4-Nitrophenol	109	7.955	7.960	-0.005	34	46064	20.0	20.0	
92 2,4-Dinitrotoluene	165	8.024	8.030	-0.006	94	54821	10.0	10.3	
94 Dibenzofuran	168	8.072	8.078	-0.006	100	218576	10.0	10.8	
97 2,3,4,6-Tetrachlorophenol	232	8.174	8.174	0.000	97	38667	10.0	9.76	
99 Diethyl phthalate	149	8.217	8.222	-0.005	94	188098	10.0	11.4	
101 4-Chlorophenyl phenyl ethe	204	8.345	8.351	-0.006	97	90698	10.0	10.9	
103 4-Nitroaniline	138	8.356	8.372	-0.016	97	47822	10.0	10.5	
104 Fluorene	166	8.372	8.377	-0.005	100	183652	10.0	11.0	
105 4,6-Dinitro-2-methylphenol	198	8.388	8.399	-0.011	94	50926	20.0	18.8	
107 Diphenylamine	169	8.447	8.452	-0.005	99	141442	NC	NC	
106 N-Nitrosodiphenylamine	169	8.447	8.452	-0.005	99	141442	10.0	12.7	
108 Azobenzene	77	8.490	8.495	-0.005	98	198559	10.0	12.5	
115 4-Bromophenyl phenyl ether	248	8.789	8.794	-0.005	96	56655	10.0	12.5	
117 Hexachlorobenzene	284	8.885	8.891	-0.006	98	54754	10.0	11.8	
120 Pentachlorophenol	266	9.057	9.057	0.000	97	39961	20.0	16.2	
125 Phenanthrene	178	9.255	9.260	-0.006	100	220345	10.0	10.9	
126 Anthracene	178	9.303	9.308	-0.005	100	223386	10.0	10.7	
127 Carbazole	167	9.436	9.442	-0.006	100	201461	10.0	10.4	
129 Di-n-butyl phthalate	149	9.731	9.730	0.001	100	258423	10.0	10.9	
134 Fluoranthene	202	10.410	10.415	-0.005	100	287985	10.0	12.5	
136 Pyrene	202	10.661	10.666	-0.005	21	306302	10.0	11.5	
142 Butyl benzyl phthalate	149	11.405	11.410	-0.005	98	150088	10.0	10.9	
150 Benzo[a]anthracene	228	12.373	12.378	-0.005	99	273251	10.0	10.2	
149 Bis(2-ethylhexyl) phthalat	149	12.373	12.378	-0.005	81	182563	10.0	9.67	
151 Chrysene	228	12.442	12.448	-0.006	100	260102	10.0	10.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.817	13.822	-0.005	99	268375	10.0	8.17	
155 Benzo[b]fluoranthene	252	14.801	14.822	-0.021	99	231236	10.0	9.57	
156 Benzo[k]fluoranthene	252	14.865	14.897	-0.032	99	237565	10.0	9.97	
157 Benzo[a]pyrene	252	15.705	15.726	-0.021	99	222328	10.0	9.81	
161 Indeno[1,2,3-cd]pyrene	276	18.748	18.775	-0.027	45	193881	10.0	10.0	
162 Dibenz(a,h)anthracene	278	18.813	18.834	-0.021	97	211017	10.0	10.5	
163 Benzo[g,h,i]perylene	276	19.337	19.363	-0.026	98	208439	10.0	11.0	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL4_00022 Amount Added: 1.00 Units: mL

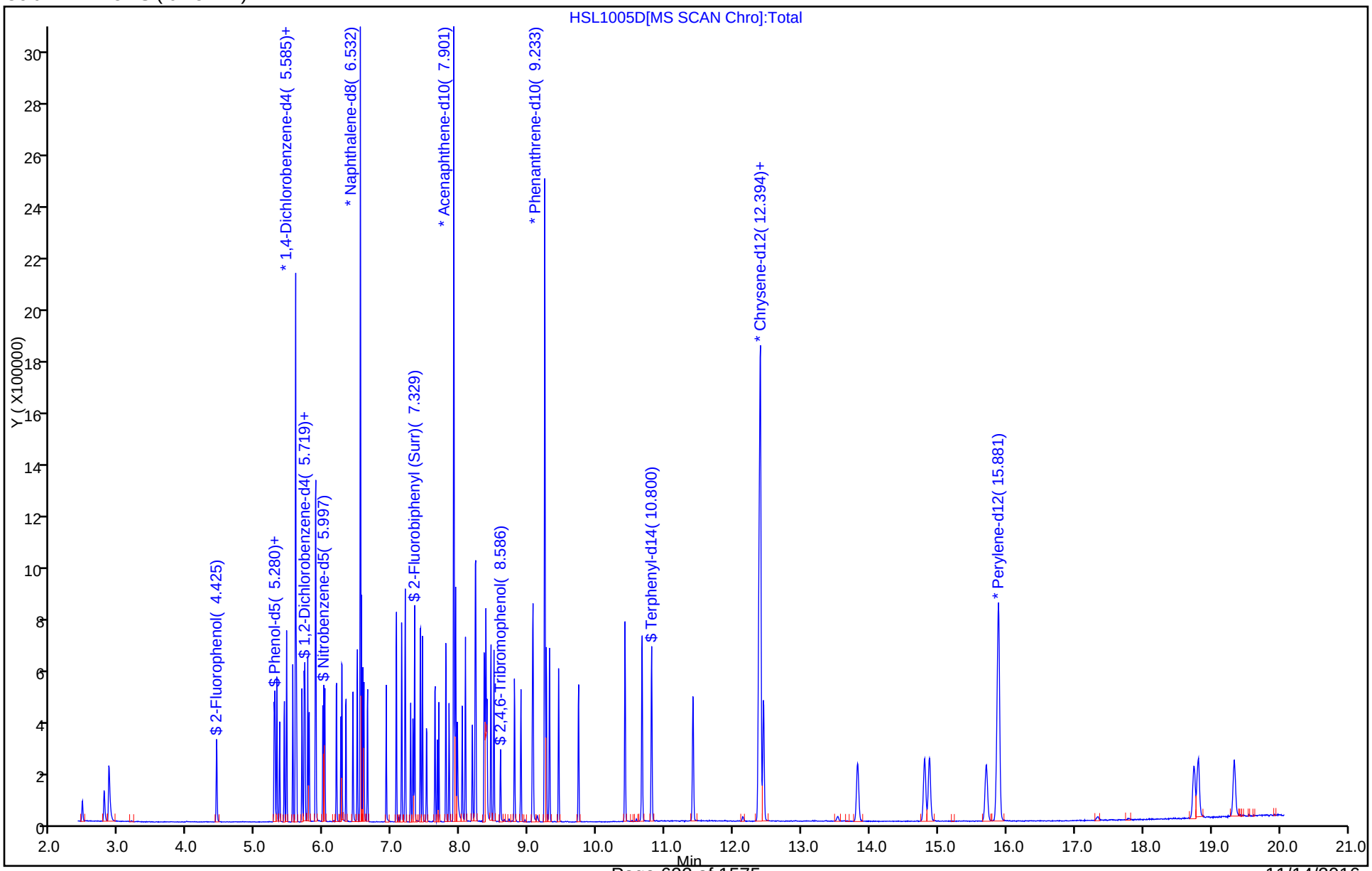
Report Date: 05-Oct-2016 20:43:27 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005D.D

Injection Date:	05-Oct-2016 16:37:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-4 HSL			Worklist Smp#:	15
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	14
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005E.D
Lims ID: IC CS-5 HSL
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 05-Oct-2016 17:04:30 ALS Bottle#: 15 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-5 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:30 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 17:51:10

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	263053	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	993470	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.907	-0.006	100	582146	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.238	-0.005	100	1009478	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.399	-0.005	100	1045320	40.0	40.0	
* 6 Perylene-d12	264	15.881	15.887	-0.006	100	952976	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	98	184694	20.0	20.2	
$ 8 Phenol-d5	99	5.270	5.275	-0.005	100	244610	20.0	22.0	
$ 9 1,2-Dichlorobenzene-d4	152	5.708	5.708	0.000	99	134746	NC	NC	
$ 10 Nitrobenzene-d5	82	5.997	6.002	-0.005	98	234978	20.0	21.4	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	100	426742	20.0	22.8	
$ 12 2,4,6-Tribromophenol	330	8.586	8.591	-0.005	99	54894	20.0	20.7	
$ 13 Terphenyl-d14	244	10.800	10.800	0.000	100	469720	20.0	22.4	
14 1,4-Dioxane	88	2.456	2.456	0.000	97	58833	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	96	135091	20.0	19.5	
16 Pyridine	79	2.847	2.847	0.000	100	237126	20.0	19.5	
26 Phenol	94	5.280	5.286	-0.006	99	245310	20.0	22.2	
27 Aniline	93	5.307	5.313	-0.005	99	303469	20.0	21.7	
28 Bis(2-chloroethyl)ether	93	5.350	5.350	0.000	100	194568	20.0	21.6	
30 2-Chlorophenol	128	5.420	5.419	0.001	98	194459	20.0	21.4	
31 1,3-Dichlorobenzene	146	5.543	5.543	0.001	99	221013	20.0	21.9	
32 1,4-Dichlorobenzene	146	5.596	5.601	-0.005	99	215290	20.0	21.7	
33 Benzyl alcohol	108	5.676	5.682	-0.006	98	126516	20.0	20.6	
34 1,2-Dichlorobenzene	146	5.719	5.724	-0.005	99	211431	20.0	21.9	
35 2-Methylphenol	108	5.762	5.767	-0.005	99	177197	20.0	21.5	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	100	312495	20.0	21.9	
39 3 & 4 Methylphenol	108	5.874	5.879	-0.005	94	187958	20.0	20.9	
40 N-Nitrosodi-n-propylamine	70	5.874	5.879	-0.005	94	151947	20.0	21.0	
42 Acetophenone	105	5.879	5.885	-0.006	94	278521	20.0	22.3	
45 Hexachloroethane	117	5.981	5.986	-0.005	97	87457	20.0	20.7	
46 Nitrobenzene	77	6.013	6.013	0.000	100	220856	20.0	22.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.184	6.184	0.000	100	391110	20.0	22.3	
49 2-Nitrophenol	139	6.249	6.249	0.000	96	102774	20.0	21.9	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	96	200291	20.0	22.3	
52 Bis(2-chloroethoxy)methane	93	6.323	6.323	0.000	100	237593	20.0	21.7	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	99	160319	20.0	22.1	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	99	176756	20.0	21.3	
58 Naphthalene	128	6.548	6.548	0.000	100	536883	20.0	22.6	
59 4-Chloroaniline	127	6.569	6.575	-0.006	100	239336	20.0	21.7	
60 2,6-Dichlorophenol	162	6.586	6.585	0.001	100	153097	20.0	21.7	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	99	103935	20.0	21.1	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	99	171573	20.0	20.8	
69 2-Methylnaphthalene	142	7.062	7.062	0.000	99	373829	20.0	21.5	
70 1-Methylnaphthalene	142	7.136	7.142	-0.006	100	347153	20.0	21.6	
71 Hexachlorocyclopentadiene	237	7.190	7.190	0.000	98	113805	20.0	21.6	
72 1,2,4,5-Tetrachlorobenzene	216	7.190	7.195	-0.005	98	180671	20.0	21.7	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	99	117783	20.0	22.2	
75 2,4,5-Trichlorophenol	196	7.302	7.302	0.000	97	120159	20.0	21.5	
77 1,1'-Biphenyl	154	7.415	7.415	0.000	100	456198	20.0	22.3	
78 2-Chloronaphthalene	162	7.441	7.447	-0.006	100	361951	20.0	22.7	
80 2-Nitroaniline	65	7.505	7.505	0.000	99	127748	20.0	21.4	
84 Dimethyl phthalate	163	7.628	7.634	-0.006	100	416236	20.0	22.7	
85 1,3-Dinitrobenzene	168	7.661	7.666	-0.005	96	65900	20.0	21.1	
86 2,6-Dinitrotoluene	165	7.682	7.687	-0.005	97	95957	20.0	22.1	
87 Acenaphthylene	152	7.784	7.789	-0.005	100	545337	20.0	22.0	
88 3-Nitroaniline	138	7.832	7.837	-0.005	99	105599	20.0	21.1	
89 2,4-Dinitrophenol	184	7.917	7.923	-0.006	97	94171	40.0	35.7	
90 Acenaphthene	153	7.928	7.933	-0.005	99	352471	20.0	22.1	
91 4-Nitrophenol	109	7.955	7.960	-0.005	98	103770	40.0	40.3	
92 2,4-Dinitrotoluene	165	8.024	8.030	-0.006	98	132162	20.0	22.3	
94 Dibenzofuran	168	8.072	8.078	-0.006	100	502090	20.0	22.1	
97 2,3,4,6-Tetrachlorophenol	232	8.174	8.174	0.000	99	95777	20.0	21.6	
99 Diethyl phthalate	149	8.217	8.222	-0.005	98	417752	20.0	22.7	
101 4-Chlorophenyl phenyl ethe	204	8.351	8.351	0.000	99	211701	20.0	22.8	
103 4-Nitroaniline	138	8.361	8.372	-0.011	99	113344	20.0	22.3	
104 Fluorene	166	8.372	8.377	-0.005	100	408819	20.0	21.9	
105 4,6-Dinitro-2-methylphenol	198	8.388	8.399	-0.011	99	138203	40.0	39.8	
107 Diphenylamine	169	8.447	8.452	-0.005	100	315241	NC	NC	
106 N-Nitrosodiphenylamine	169	8.447	8.452	-0.005	100	315241	20.0	22.1	
108 Azobenzene	77	8.490	8.495	-0.005	100	453821	20.0	22.2	
115 4-Bromophenyl phenyl ether	248	8.794	8.794	0.000	99	122465	20.0	21.1	
117 Hexachlorobenzene	284	8.885	8.891	-0.006	99	125380	20.0	21.0	
120 Pentachlorophenol	266	9.051	9.057	-0.006	98	120997	40.0	38.2	
125 Phenanthrene	178	9.260	9.260	0.000	100	584880	20.0	22.6	
126 Anthracene	178	9.303	9.308	-0.005	99	612323	20.0	22.8	
127 Carbazole	167	9.436	9.442	-0.006	100	572522	20.0	23.0	
129 Di-n-butyl phthalate	149	9.731	9.730	0.000	100	726661	20.0	23.9	
134 Fluoranthene	202	10.410	10.415	-0.005	100	683895	20.0	23.1	
136 Pyrene	202	10.661	10.666	-0.005	100	712273	20.0	23.5	
142 Butyl benzyl phthalate	149	11.410	11.410	0.000	100	329265	20.0	20.9	
150 Benzo[a]anthracene	228	12.373	12.378	-0.005	98	666347	20.0	21.8	
149 Bis(2-ethylhexyl) phthalat	149	12.373	12.378	-0.005	91	467116	20.0	21.7	
151 Chrysene	228	12.442	12.448	-0.006	100	627501	20.0	21.6	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.817	13.822	-0.005	100	805131	20.0	21.5	
155 Benzo[b]fluoranthene	252	14.801	14.822	-0.021	99	595689	20.0	20.8	
156 Benzo[k]fluoranthene	252	14.876	14.897	-0.021	100	610938	20.0	21.6	
157 Benzo[a]pyrene	252	15.710	15.726	-0.016	100	582619	20.0	21.7	
161 Indeno[1,2,3-cd]pyrene	276	18.754	18.775	-0.021	98	444236	20.0	19.4	
162 Dibenz(a,h)anthracene	278	18.812	18.834	-0.022	99	459431	20.0	19.4	
163 Benzo[g,h,i]perylene	276	19.342	19.363	-0.021	100	444935	20.0	19.9	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL5_00022 Amount Added: 1.00 Units: mL

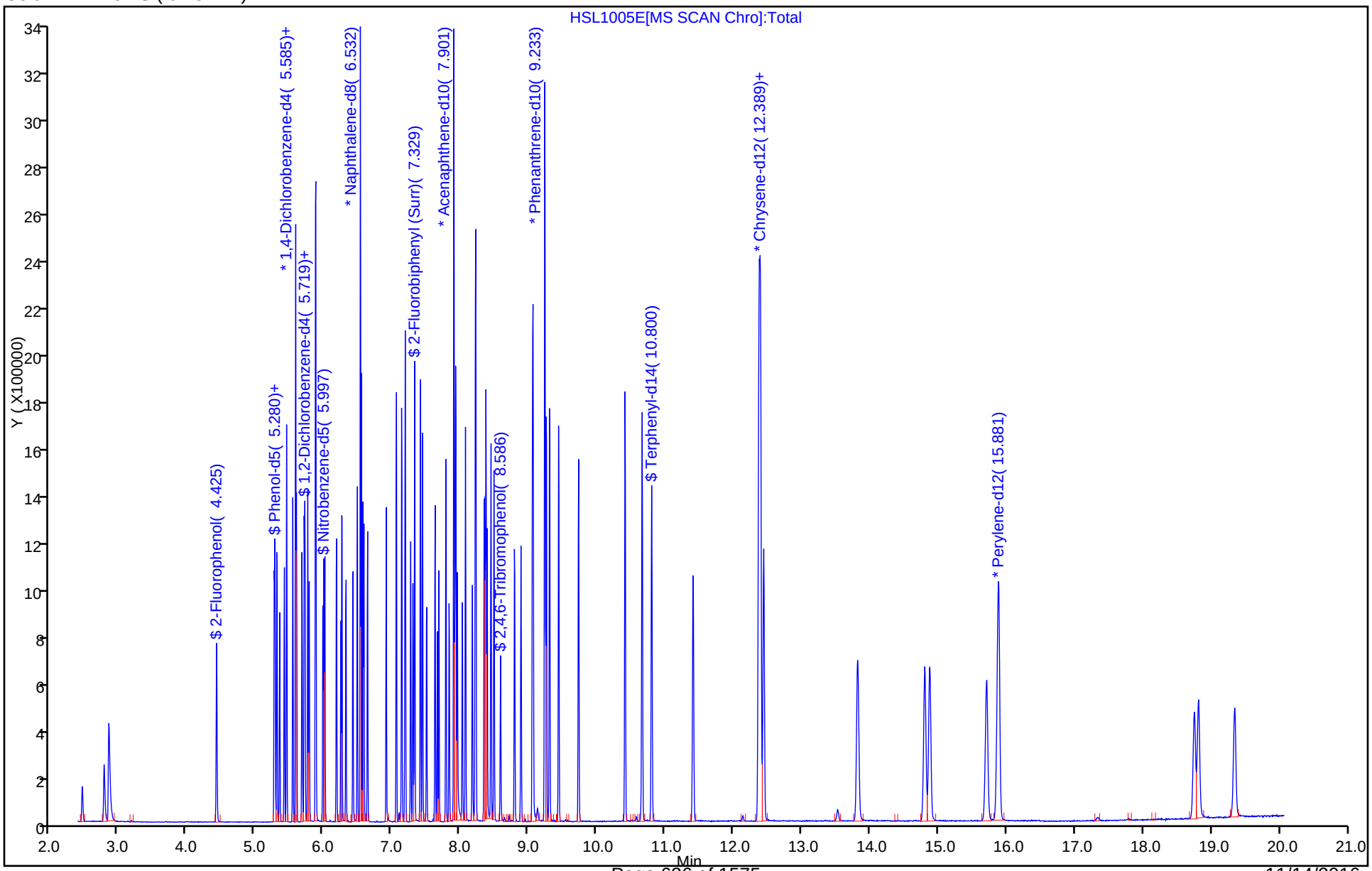
Report Date: 05-Oct-2016 20:43:32 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005E.D

Injection Date:	05-Oct-2016 17:04:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-5 HSL			Worklist Smp#:	16
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	15
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005F.D
Lims ID: IC CS-6 HSL
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 05-Oct-2016 17:32:30 ALS Bottle#: 16 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: is cs-6 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:34 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 18:27:49

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	260495	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	989280	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	589275	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	1023997	40.0	40.0	
* 5 Chrysene-d12	240	12.399	12.399	0.000	99	1010996	40.0	40.0	
* 6 Perylene-d12	264	15.887	15.887	0.000	100	846868	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	98	435901	50.0	48.1	
$ 8 Phenol-d5	99	5.270	5.270	0.000	99	572594	50.0	52.1	
$ 9 1,2-Dichlorobenzene-d4	152	5.708	5.708	0.000	99	305530	NC	NC	
$ 10 Nitrobenzene-d5	82	5.997	5.997	0.000	100	554595	50.0	50.7	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	99	966913	50.0	51.1	
$ 12 2,4,6-Tribromophenol	330	8.591	8.591	0.000	97	137213	50.0	51.1	
$ 13 Terphenyl-d14	244	10.800	10.800	0.000	100	1084631	50.0	53.4	
14 1,4-Dioxane	88	2.456	2.456	0.000	98	138721	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	96	306126	50.0	44.5	
16 Pyridine	79	2.847	2.847	0.000	99	535826	50.0	44.5	
26 Phenol	94	5.280	5.280	0.000	98	572345	50.0	52.2	
27 Aniline	93	5.307	5.307	0.000	100	707997	50.0	51.1	
28 Bis(2-chloroethyl)ether	93	5.350	5.350	0.000	99	446394	50.0	50.1	
30 2-Chlorophenol	128	5.419	5.419	0.000	97	456237	50.0	50.6	
31 1,3-Dichlorobenzene	146	5.542	5.542	0.000	99	509059	50.0	50.8	
32 1,4-Dichlorobenzene	146	5.596	5.596	0.000	99	496927	50.0	50.6	
33 Benzyl alcohol	108	5.676	5.676	0.000	99	311320	50.0	51.3	
34 1,2-Dichlorobenzene	146	5.724	5.724	0.000	98	472240	50.0	49.4	
35 2-Methylphenol	108	5.762	5.762	0.000	99	418335	50.0	51.2	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	100	700492	50.0	49.6	
39 3 & 4 Methylphenol	108	5.874	5.874	0.000	88	430319	50.0	48.3	
40 N-Nitrosodi-n-propylamine	70	5.879	5.879	0.000	88	352335	50.0	49.1	
42 Acetophenone	105	5.885	5.885	0.000	83	618958	50.0	49.7	
45 Hexachloroethane	117	5.986	5.986	0.000	92	201833	50.0	48.2	
46 Nitrobenzene	77	6.013	6.013	0.000	99	502354	50.0	50.6	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.184	6.184	0.000	100	890231	50.0	50.9	
49 2-Nitrophenol	139	6.248	6.248	0.000	98	254673	50.0	54.4	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	99	463408	50.0	51.7	
52 Bis(2-chloroethoxy)methane	93	6.323	6.323	0.000	100	558469	50.0	51.3	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	99	369905	50.0	51.1	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	98	416023	50.0	50.4	
58 Naphthalene	128	6.548	6.548	0.000	100	1193834	50.0	50.5	
59 4-Chloroaniline	127	6.569	6.569	0.000	99	559896	50.0	51.1	
60 2,6-Dichlorophenol	162	6.585	6.585	0.000	99	364486	50.0	51.9	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	98	238007	50.0	48.6	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	98	409045	50.0	49.8	
69 2-Methylnaphthalene	142	7.061	7.061	0.000	100	847230	50.0	48.9	
70 1-Methylnaphthalene	142	7.142	7.142	0.000	99	795718	50.0	49.7	
71 Hexachlorocyclopentadiene	237	7.190	7.190	0.000	88	276119	50.0	51.9	
72 1,2,4,5-Tetrachlorobenzene	216	7.195	7.195	0.000	96	417563	50.0	49.5	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	98	273879	50.0	51.1	
75 2,4,5-Trichlorophenol	196	7.302	7.302	0.000	98	287777	50.0	50.9	
77 1,1'-Biphenyl	154	7.414	7.414	0.000	99	1007163	50.0	48.5	
78 2-Chloronaphthalene	162	7.447	7.447	0.000	100	806378	50.0	49.9	
80 2-Nitroaniline	65	7.505	7.505	0.000	96	313085	50.0	51.9	
84 Dimethyl phthalate	163	7.628	7.628	0.000	99	937130	50.0	50.6	
85 1,3-Dinitrobenzene	168	7.666	7.666	0.000	97	164312	50.0	52.0	
86 2,6-Dinitrotoluene	165	7.687	7.687	0.000	98	232340	50.0	52.8	
87 Acenaphthylene	152	7.789	7.789	0.000	100	1262689	50.0	50.4	
88 3-Nitroaniline	138	7.837	7.837	0.000	97	262537	50.0	51.9	
89 2,4-Dinitrophenol	184	7.923	7.923	0.000	85	267393	100.0	100.1	
90 Acenaphthene	153	7.933	7.933	0.000	99	800529	50.0	49.5	
91 4-Nitrophenol	109	7.955	7.955	0.000	98	275506	100.0	105.7	
92 2,4-Dinitrotoluene	165	8.030	8.030	0.000	95	318846	50.0	53.1	
94 Dibenzofuran	168	8.072	8.072	0.000	100	1124391	50.0	49.0	
97 2,3,4,6-Tetrachlorophenol	232	8.174	8.174	0.000	99	235139	50.0	52.5	
99 Diethyl phthalate	149	8.217	8.217	0.000	94	936523	50.0	50.2	
101 4-Chlorophenyl phenyl ethe	204	8.351	8.351	0.000	97	474793	50.0	50.4	
103 4-Nitroaniline	138	8.367	8.367	0.000	89	274169	50.0	53.3	
104 Fluorene	166	8.377	8.377	0.000	99	916137	50.0	48.5	
105 4,6-Dinitro-2-methylphenol	198	8.393	8.393	0.000	98	359508	100.0	102.0	
107 Diphenylamine	169	8.447	8.447	0.000	99	715356	NC	NC	
106 N-Nitrosodiphenylamine	169	8.447	8.447	0.000	99	715356	50.0	49.4	
108 Azobenzene	77	8.495	8.495	0.000	99	1033531	50.0	49.8	
115 4-Bromophenyl phenyl ether	248	8.794	8.794	0.000	96	285987	50.0	48.6	
117 Hexachlorobenzene	284	8.885	8.885	0.000	99	291792	50.0	48.3	
120 Pentachlorophenol	266	9.057	9.057	0.000	88	345070	100.0	107.5	
125 Phenanthrene	178	9.260	9.260	0.000	100	1325910	50.0	50.4	
126 Anthracene	178	9.308	9.308	0.000	99	1401479	50.0	51.5	
127 Carbazole	167	9.442	9.442	0.000	99	1309602	50.0	52.0	
129 Di-n-butyl phthalate	149	9.730	9.730	0.000	100	1645611	50.0	53.3	
134 Fluoranthene	202	10.415	10.415	0.000	99	1575731	50.0	52.6	
136 Pyrene	202	10.661	10.661	0.000	99	1619663	50.0	55.2	
142 Butyl benzyl phthalate	149	11.410	11.410	0.000	100	816170	50.0	53.6	
150 Benzo[a]anthracene	228	12.378	12.378	0.000	88	1511197	50.0	51.2	
149 Bis(2-ethylhexyl) phthalat	149	12.378	12.378	0.000	88	1115212	50.0	53.6	
151 Chrysene	228	12.448	12.448	0.000	99	1401030	50.0	49.8	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.828	13.828	0.000	100	1733725	50.0	47.9	
155 Benzo[b]fluoranthene	252	14.812	14.812	0.000	99	1254332	50.0	49.3	
156 Benzo[k]fluoranthene	252	14.892	14.892	0.000	99	1226386	50.0	48.9	
157 Benzo[a]pyrene	252	15.721	15.721	0.000	100	1227184	50.0	51.4	
161 Indeno[1,2,3-cd]pyrene	276	18.764	18.764	0.000	99	1109310	50.0	54.5	
162 Dibenz(a,h)anthracene	278	18.828	18.828	0.000	98	1182747	50.0	56.1	
163 Benzo[g,h,i]perylene	276	19.358	19.358	0.000	98	954767	50.0	47.9	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL6_00022 Amount Added: 1.00 Units: mL

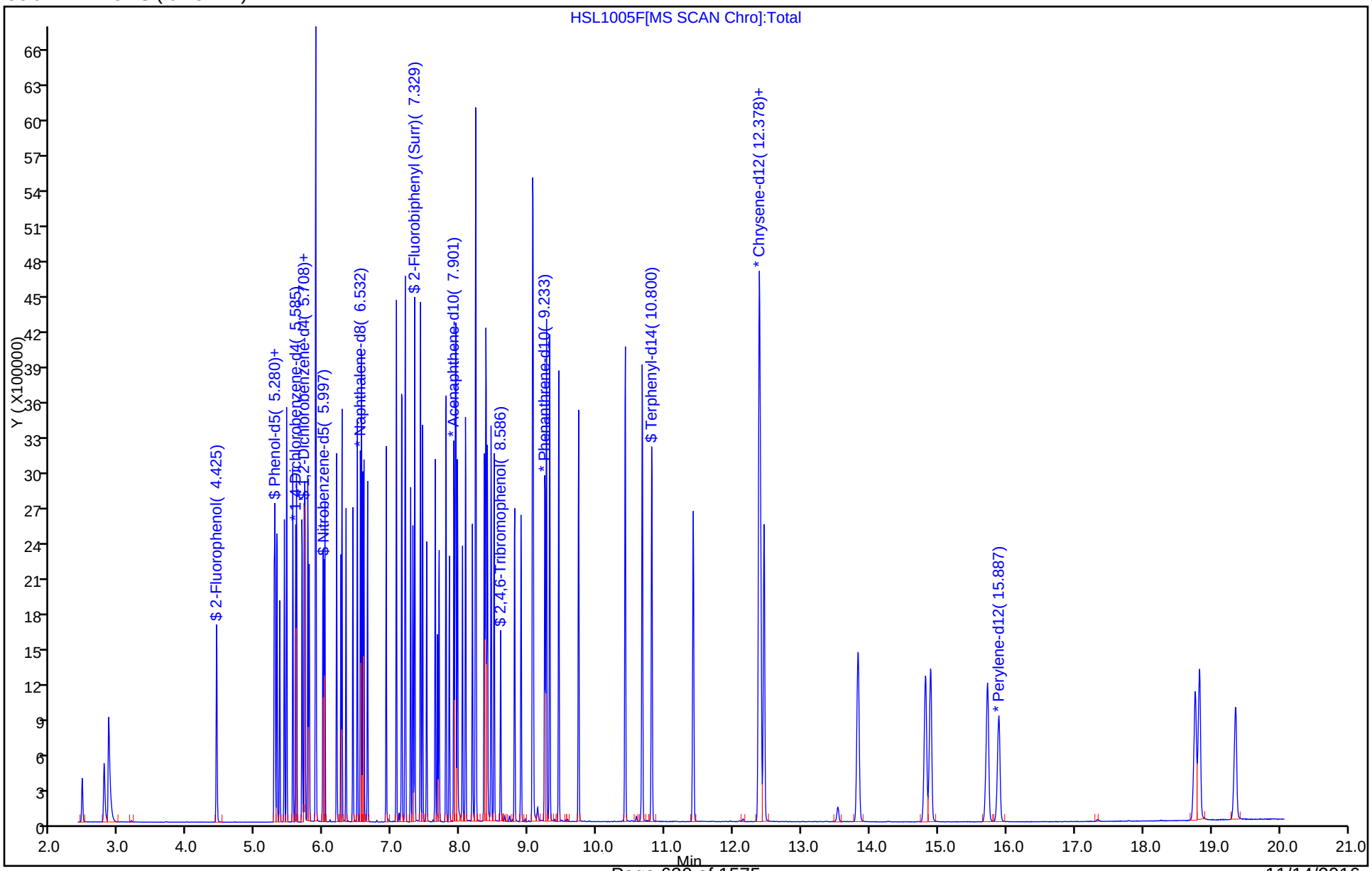
Report Date: 05-Oct-2016 20:43:37 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005F.D

Injection Date:	05-Oct-2016 17:32:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-6 HSL			Worklist Smp#:	17
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	16
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005G.D
Lims ID: ICIS CS-7 HSL
Client ID:
Sample Type: ICIS Calib Level: 7
Inject. Date: 05-Oct-2016 18:00:30 ALS Bottle#: 17 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: icis cs-7 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:40 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 18:55:20

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	99	195577	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	775410	40.0	40.0	
* 3 Acenaphthene-d10	164	7.907	7.907	0.000	100	570070	40.0	40.0	
* 4 Phenanthrene-d10	188	9.238	9.238	0.000	100	1004883	40.0	40.0	
* 5 Chrysene-d12	240	12.399	12.399	0.000	99	990336	40.0	40.0	
* 6 Perylene-d12	264	15.887	15.887	0.000	100	828975	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	99	590277	75.0	86.8	
$ 8 Phenol-d5	99	5.275	5.275	0.000	98	601730	75.0	72.9	
$ 9 1,2-Dichlorobenzene-d4	152	5.708	5.708	0.000	98	325516	NC	NC	
$ 10 Nitrobenzene-d5	82	6.002	6.002	0.000	99	610454	75.0	71.2	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	99	1342463	75.0	73.4	
$ 12 2,4,6-Tribromophenol	330	8.591	8.591	0.000	97	195537	75.0	75.2	
$ 13 Terphenyl-d14	244	10.800	10.800	0.000	100	1508598	75.0	75.9	
14 1,4-Dioxane	88	2.456	2.456	0.000	97	203358	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	95	454239	75.0	88.0	
16 Pyridine	79	2.847	2.847	0.000	99	782929	75.0	86.7	
26 Phenol	94	5.286	5.286	0.000	99	597201	75.0	72.6	
27 Aniline	93	5.313	5.313	0.000	100	741059	75.0	71.2	
28 Bis(2-chloroethyl)ether	93	5.350	5.350	0.000	99	458213	75.0	68.5	
30 2-Chlorophenol	128	5.419	5.419	0.000	96	477136	75.0	70.5	
31 1,3-Dichlorobenzene	146	5.543	5.543	0.000	99	544307	75.0	72.4	
32 1,4-Dichlorobenzene	146	5.601	5.601	0.000	97	537099	75.0	72.8	
33 Benzyl alcohol	108	5.682	5.682	0.000	99	327195	75.0	71.8	
34 1,2-Dichlorobenzene	146	5.724	5.724	0.000	97	510033	75.0	71.0	
35 2-Methylphenol	108	5.767	5.767	0.000	99	442307	75.0	72.0	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	98	710814	75.0	67.1	
39 3 & 4 Methylphenol	108	5.879	5.879	0.000	88	461051	75.0	68.9	
40 N-Nitrosodi-n-propylamine	70	5.879	5.879	0.000	88	369517	75.0	68.6	
42 Acetophenone	105	5.885	5.885	0.000	89	676152	75.0	69.3	
45 Hexachloroethane	117	5.986	5.986	0.000	93	226329	75.0	72.0	
46 Nitrobenzene	77	6.013	6.013	0.000	99	540926	75.0	69.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.184	6.184	0.000	99	961051	75.0	70.1	
49 2-Nitrophenol	139	6.249	6.249	0.000	97	275976	75.0	75.2	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	98	506348	75.0	72.1	
52 Bis(2-chloroethoxy)methane	93	6.323	6.323	0.000	100	591725	75.0	69.4	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	99	405960	75.0	71.6	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	97	477520	75.0	73.8	
58 Naphthalene	128	6.548	6.548	0.000	100	1335512	75.0	72.0	
59 4-Chloroaniline	127	6.575	6.575	0.000	99	643480	75.0	74.9	
60 2,6-Dichlorophenol	162	6.585	6.585	0.000	97	414244	75.0	75.2	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	98	300012	75.0	78.2	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	98	582330	75.0	90.4	
69 2-Methylnaphthalene	142	7.062	7.062	0.000	99	1066560	75.0	78.6	
70 1-Methylnaphthalene	142	7.142	7.142	0.000	99	936093	75.0	74.6	
71 Hexachlorocyclopentadiene	237	7.190	7.190	0.000	88	396904	75.0	77.1	
72 1,2,4,5-Tetrachlorobenzene	216	7.195	7.195	0.000	91	583555	75.0	71.5	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	98	401929	75.0	77.4	
75 2,4,5-Trichlorophenol	196	7.302	7.302	0.000	98	407131	75.0	74.5	
77 1,1'-Biphenyl	154	7.415	7.415	0.000	98	1397973	75.0	69.6	
78 2-Chloronaphthalene	162	7.447	7.447	0.000	99	1124004	75.0	71.9	
80 2-Nitroaniline	65	7.505	7.505	0.000	96	451222	75.0	77.3	
84 Dimethyl phthalate	163	7.634	7.634	0.000	99	1316916	75.0	73.5	
85 1,3-Dinitrobenzene	168	7.666	7.666	0.000	97	238952	75.0	78.2	
86 2,6-Dinitrotoluene	165	7.687	7.687	0.000	97	326911	75.0	76.8	
87 Acenaphthylene	152	7.789	7.789	0.000	99	1705428	75.0	70.4	
88 3-Nitroaniline	138	7.837	7.837	0.000	98	382321	75.0	78.1	
89 2,4-Dinitrophenol	184	7.923	7.923	0.000	93	398780	150.0	154.3	
90 Acenaphthene	153	7.933	7.933	0.000	99	1099805	75.0	70.3	
91 4-Nitrophenol	109	7.960	7.960	0.000	98	396160	150.0	157.1	
92 2,4-Dinitrotoluene	165	8.030	8.030	0.000	99	447588	75.0	77.1	
94 Dibenzofuran	168	8.078	8.078	0.000	99	1548338	75.0	69.7	
97 2,3,4,6-Tetrachlorophenol	232	8.174	8.174	0.000	97	337640	75.0	77.9	
99 Diethyl phthalate	149	8.222	8.222	0.000	91	1304418	75.0	72.3	
101 4-Chlorophenyl phenyl ethe	204	8.351	8.351	0.000	98	673120	75.0	73.9	
103 4-Nitroaniline	138	8.372	8.372	0.000	89	385950	75.0	77.5	
104 Fluorene	166	8.377	8.377	0.000	99	1270543	75.0	69.5	
105 4,6-Dinitro-2-methylphenol	198	8.399	8.399	0.000	97	525233	150.0	151.8	
107 Diphenylamine	169	8.452	8.452	0.000	99	1010423	NC	NC	
106 N-Nitrosodiphenylamine	169	8.452	8.452	0.000	99	1010423	75.0	71.2	
108 Azobenzene	77	8.495	8.495	0.000	99	1430447	75.0	70.2	
115 4-Bromophenyl phenyl ether	248	8.794	8.794	0.000	97	408319	75.0	70.7	
117 Hexachlorobenzene	284	8.891	8.891	0.000	98	410507	75.0	69.2	
120 Pentachlorophenol	266	9.057	9.057	0.000	89	490055	150.0	155.5	
125 Phenanthrene	178	9.260	9.260	0.000	99	1830530	75.0	70.9	
126 Anthracene	178	9.308	9.308	0.000	99	1885841	75.0	70.7	
127 Carbazole	167	9.442	9.442	0.000	99	1795041	75.0	72.6	
129 Di-n-butyl phthalate	149	9.730	9.730	0.000	100	2230788	75.0	73.7	
134 Fluoranthene	202	10.415	10.415	0.000	99	2138939	75.0	72.7	
136 Pyrene	202	10.666	10.666	0.000	98	2203866	75.0	76.7	
142 Butyl benzyl phthalate	149	11.410	11.410	0.000	100	1157264	75.0	77.7	
150 Benzo[a]anthracene	228	12.378	12.378	0.000	88	2171460	75.0	75.2	
149 Bis(2-ethylhexyl) phthalat	149	12.378	12.378	0.000	88	1603864	75.0	78.6	
151 Chrysene	228	12.448	12.448	0.000	99	2082237	75.0	75.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.822	13.822	0.000	100	2898453	75.0	81.7	
155 Benzo[b]fluoranthene	252	14.822	14.822	0.000	99	2337363	75.0	93.8	
156 Benzo[k]fluoranthene	252	14.897	14.897	0.000	99	2273557	75.0	92.6	
157 Benzo[a]pyrene	252	15.726	15.726	0.000	100	1853342	75.0	79.3	
161 Indeno[1,2,3-cd]pyrene	276	18.775	18.775	0.000	99	1657753	75.0	83.1	
162 Dibenz(a,h)anthracene	278	18.834	18.834	0.000	98	1695043	75.0	82.1	
163 Benzo[g,h,i]perylene	276	19.363	19.363	0.000	99	1473524	75.0	75.6	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL7_00022 Amount Added: 1.00 Units: mL

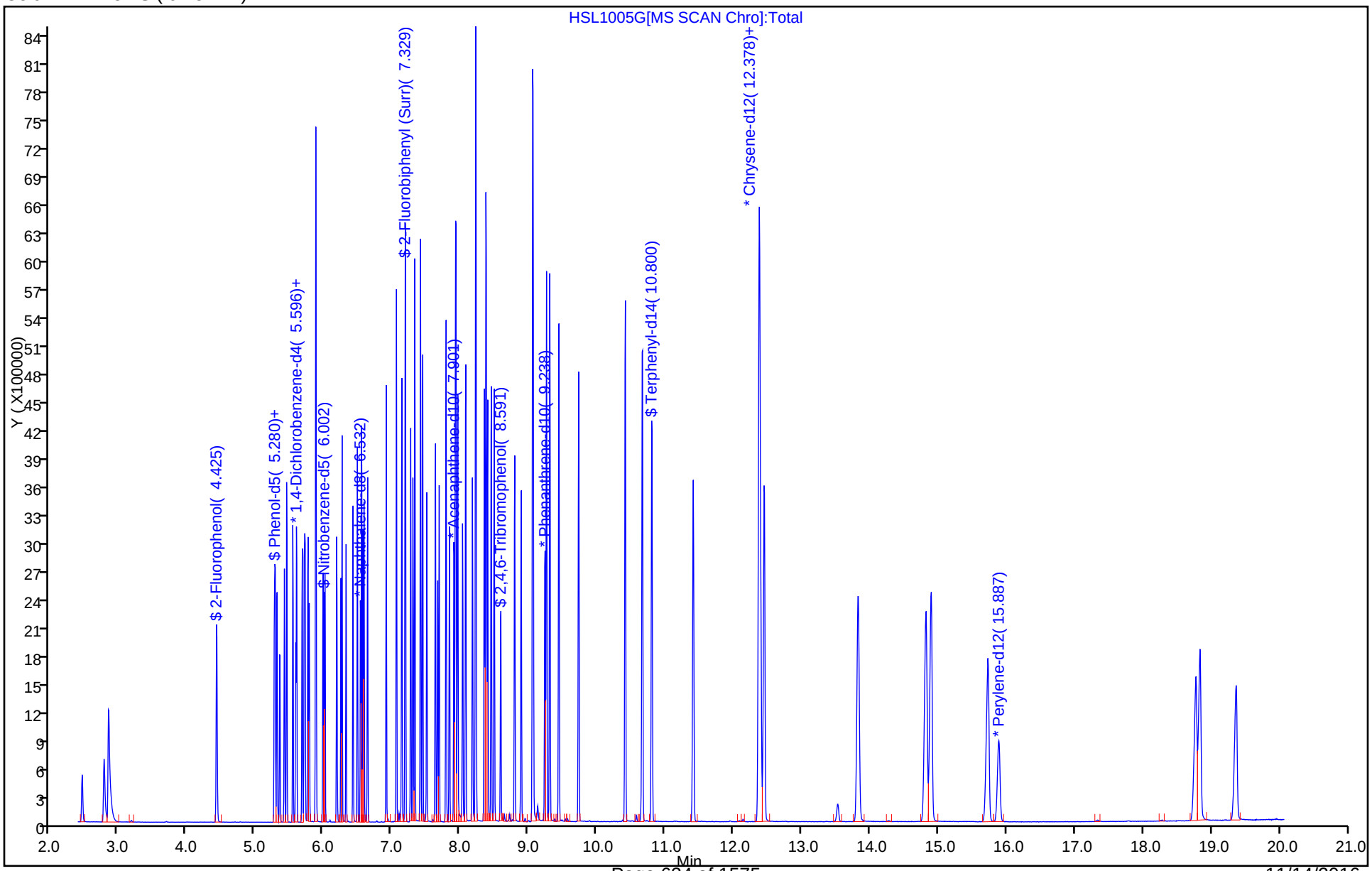
Report Date: 05-Oct-2016 20:43:42 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005G.D

Injection Date:	05-Oct-2016 18:00:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	ICIS CS-7 HSL			Worklist Smp#:	18
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	17
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005H.D
Lims ID: IC CS-8 HSL
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 05-Oct-2016 18:27:30 ALS Bottle#: 18 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-8 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:44 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 19:37:55

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	99	204144	40.0	40.0	
* 2 Naphthalene-d8	136	6.537	6.532	0.005	100	983678	40.0	40.0	
* 3 Acenaphthene-d10	164	7.907	7.907	0.000	100	580765	40.0	40.0	
* 4 Phenanthrene-d10	188	9.238	9.238	0.000	100	1037682	40.0	40.0	
* 5 Chrysene-d12	240	12.405	12.399	0.006	99	1038583	40.0	40.0	
* 6 Perylene-d12	264	15.892	15.887	0.005	99	1133176	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	98	722338	100.0	101.7	
$ 8 Phenol-d5	99	5.275	5.275	0.000	98	785802	100.0	91.2	
$ 9 1,2-Dichlorobenzene-d4	152	5.714	5.708	0.006	98	543533	NC	NC	
$ 10 Nitrobenzene-d5	82	6.003	6.002	0.000	98	922880	100.0	84.9	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	98	1691361	100.0	90.7	
$ 12 2,4,6-Tribromophenol	330	8.591	8.591	0.000	97	268662	100.0	101.5	
$ 13 Terphenyl-d14	244	10.806	10.800	0.006	99	1972034	100.0	94.6	
14 1,4-Dioxane	88	2.456	2.456	0.000	98	263097	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	95	591697	100.0	109.8	
16 Pyridine	79	2.841	2.847	-0.006	99	1015555	100.0	107.7	
26 Phenol	94	5.286	5.286	0.000	98	772749	100.0	89.9	
27 Aniline	93	5.313	5.313	0.001	99	955979	100.0	88.1	
28 Bis(2-chloroethyl)ether	93	5.350	5.350	0.000	100	625626	100.0	89.5	
30 2-Chlorophenol	128	5.420	5.419	0.001	96	657631	100.0	93.1	
31 1,3-Dichlorobenzene	146	5.543	5.543	0.001	99	714460	100.0	91.0	
32 1,4-Dichlorobenzene	146	5.601	5.601	0.000	98	732542	100.0	95.1	
33 Benzyl alcohol	108	5.682	5.682	0.000	99	562938	100.0	118.3	
34 1,2-Dichlorobenzene	146	5.724	5.724	0.000	98	823438	100.0	109.9	
35 2-Methylphenol	108	5.767	5.767	0.000	99	701847	100.0	109.5	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	98	1179427	100.0	106.6	
39 3 & 4 Methylphenol	108	5.879	5.879	0.000	91	736964	100.0	105.6	
40 N-Nitrosodi-n-propylamine	70	5.879	5.879	0.000	91	597854	100.0	106.3	
42 Acetophenone	105	5.885	5.885	0.000	91	1033917	100.0	83.6	
45 Hexachloroethane	117	5.986	5.986	0.000	92	362739	100.0	110.6	
46 Nitrobenzene	77	6.019	6.013	0.006	99	857595	100.0	86.9	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.190	6.184	0.006	99	1504063	100.0	86.4	
49 2-Nitrophenol	139	6.249	6.249	0.000	97	452646	100.0	97.2	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	99	794160	100.0	89.1	
52 Bis(2-chloroethoxy)methane	93	6.323	6.323	0.000	99	995057	100.0	92.0	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	98	690186	100.0	95.9	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	97	752062	100.0	91.6	
58 Naphthalene	128	6.553	6.548	0.005	99	2012468	100.0	85.6	
59 4-Chloroaniline	127	6.575	6.575	0.000	99	1018307	100.0	93.4	
60 2,6-Dichlorophenol	162	6.586	6.585	0.001	98	667047	100.0	95.5	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	97	440687	100.0	90.5	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	99	770696	100.0	94.3	
69 2-Methylnaphthalene	142	7.062	7.062	0.000	99	1477440	100.0	85.8	
70 1-Methylnaphthalene	142	7.142	7.142	0.000	99	1391734	100.0	87.5	
71 Hexachlorocyclopentadiene	237	7.190	7.190	0.000	89	533796	100.0	101.7	
72 1,2,4,5-Tetrachlorobenzene	216	7.195	7.195	0.000	93	754394	100.0	90.7	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	97	534227	100.0	101.0	
75 2,4,5-Trichlorophenol	196	7.302	7.302	0.000	98	548783	100.0	98.6	
77 1,1'-Biphenyl	154	7.415	7.415	0.000	97	1777777	100.0	86.9	
78 2-Chloronaphthalene	162	7.447	7.447	0.000	99	1454789	100.0	91.4	
80 2-Nitroaniline	65	7.505	7.505	0.000	96	593117	100.0	99.7	
84 Dimethyl phthalate	163	7.634	7.634	0.000	98	1692686	100.0	92.7	
85 1,3-Dinitrobenzene	168	7.666	7.666	0.000	96	321669	100.0	103.3	
86 2,6-Dinitrotoluene	165	7.687	7.687	0.000	95	436139	100.0	100.5	
87 Acenaphthylene	152	7.789	7.789	0.000	98	2165620	100.0	87.8	
88 3-Nitroaniline	138	7.842	7.837	0.005	97	499050	100.0	100.1	
89 2,4-Dinitrophenol	184	7.928	7.923	0.005	83	537484	200.0	204.1	
90 Acenaphthene	153	7.933	7.933	0.000	98	1395201	100.0	87.5	
91 4-Nitrophenol	109	7.965	7.960	0.005	98	537737	200.0	209.3	
92 2,4-Dinitrotoluene	165	8.035	8.030	0.005	96	596778	100.0	100.9	
94 Dibenzofuran	168	8.078	8.078	0.000	98	1971962	100.0	87.2	
97 2,3,4,6-Tetrachlorophenol	232	8.179	8.174	0.005	98	455953	100.0	103.3	
99 Diethyl phthalate	149	8.222	8.222	0.000	90	1685377	100.0	91.8	
101 4-Chlorophenyl phenyl ethe	204	8.351	8.351	0.000	98	871707	100.0	94.0	
103 4-Nitroaniline	138	8.377	8.372	0.005	88	504421	100.0	99.5	
104 Fluorene	166	8.377	8.377	0.000	98	1632181	100.0	87.6	
105 4,6-Dinitro-2-methylphenol	198	8.404	8.399	0.005	97	715973	200.0	200.4	
107 Diphenylamine	169	8.452	8.452	0.000	99	1300444	NC	NC	
106 N-Nitrosodiphenylamine	169	8.452	8.452	0.000	99	1300444	100.0	88.7	
108 Azobenzene	77	8.495	8.495	0.000	98	1837171	100.0	87.4	
115 4-Bromophenyl phenyl ether	248	8.794	8.794	0.000	97	537525	100.0	90.2	
117 Hexachlorobenzene	284	8.891	8.891	0.000	98	549791	100.0	89.7	
120 Pentachlorophenol	266	9.057	9.057	0.000	92	667384	200.0	205.1	
125 Phenanthrene	178	9.260	9.260	0.000	98	2348583	100.0	88.1	
126 Anthracene	178	9.308	9.308	0.000	98	2433897	100.0	88.3	
127 Carbazole	167	9.442	9.442	0.000	98	2301757	100.0	90.1	
129 Di-n-butyl phthalate	149	9.731	9.730	0.000	99	2853630	100.0	91.3	
134 Fluoranthene	202	10.415	10.415	0.000	98	2766544	100.0	91.1	
136 Pyrene	202	10.667	10.666	0.000	99	2856955	100.0	94.8	
142 Butyl benzyl phthalate	149	11.410	11.410	0.000	99	1561247	100.0	99.9	
150 Benzo[a]anthracene	228	12.383	12.378	0.005	89	2868438	100.0	94.7	
149 Bis(2-ethylhexyl) phthalat	149	12.378	12.378	0.000	86	2160250	100.0	101.0	
151 Chrysene	228	12.453	12.448	0.005	98	2736996	100.0	94.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.828	13.822	0.006	100	3924177	100.0	105.5	
155 Benzo[b]fluoranthene	252	14.828	14.822	0.006	97	3152166	100.0	92.6	
156 Benzo[k]fluoranthene	252	14.903	14.897	0.006	99	3079359	100.0	91.8	
157 Benzo[a]pyrene	252	15.737	15.726	0.011	99	3118268	100.0	97.6	
161 Indeno[1,2,3-cd]pyrene	276	18.780	18.775	0.005	99	2498213	100.0	91.6	
162 Dibenz(a,h)anthracene	278	18.845	18.834	0.011	98	2548202	100.0	90.3	
163 Benzo[g,h,i]perylene	276	19.379	19.363	0.016	98	2371192	100.0	89.0	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL8_00022 Amount Added: 1.00 Units: mL

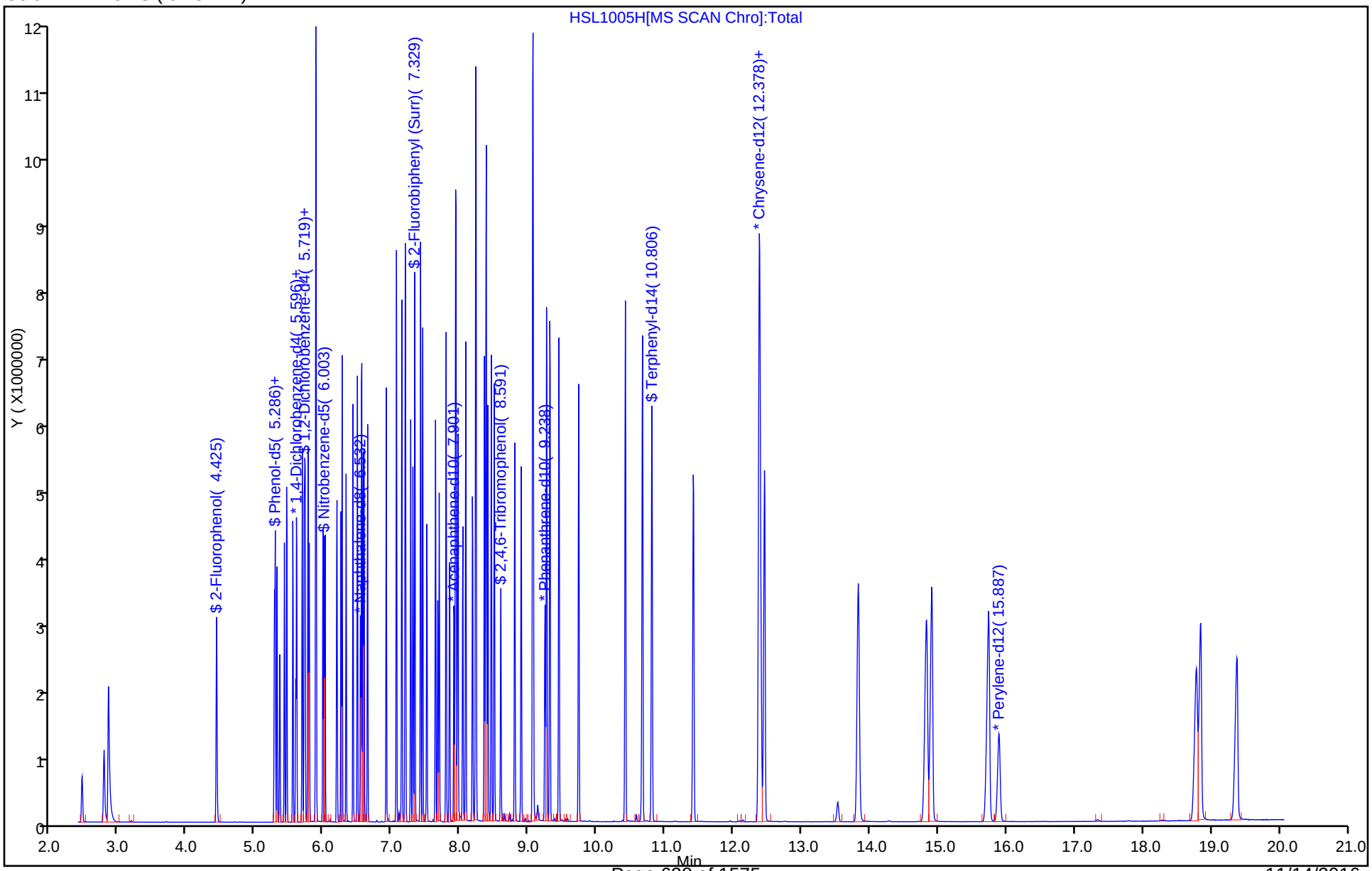
Report Date: 05-Oct-2016 20:43:45 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005H.D

Injection Date:	05-Oct-2016 18:27:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-8 HSL			Worklist Smp#:	19
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	18
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005I.D
Lims ID: IC CS-9 HSL
Client ID:
Sample Type: IC Calib Level: 9
Inject. Date: 05-Oct-2016 18:55:30 ALS Bottle#: 19 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-9 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:50 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 19:47:47

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	99	255168	40.0	40.0	
* 2 Naphthalene-d8	136	6.537	6.532	0.005	100	993264	40.0	40.0	
* 3 Acenaphthene-d10	164	7.907	7.907	0.000	100	581088	40.0	40.0	
* 4 Phenanthrene-d10	188	9.239	9.238	0.000	100	1030837	40.0	40.0	
* 5 Chrysene-d12	240	12.405	12.399	0.006	99	1034199	40.0	40.0	
* 6 Perylene-d12	264	15.892	15.887	0.005	99	1132847	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	98	975147	120.0	109.9	
$ 8 Phenol-d5	99	5.275	5.275	0.000	99	1272308	120.0	118.2	
$ 9 1,2-Dichlorobenzene-d4	152	5.714	5.708	0.006	98	660309	NC	NC	
$ 10 Nitrobenzene-d5	82	6.003	6.002	0.001	99	1199308	120.0	109.2	
$ 11 2-Fluorobiphenyl (Surr)	172	7.329	7.329	0.000	98	1971225	120.0	105.7	
$ 12 2,4,6-Tribromophenol	330	8.591	8.591	0.000	97	322228	120.0	121.6	
$ 13 Terphenyl-d14	244	10.806	10.800	0.006	99	2313050	120.0	111.4	
14 1,4-Dioxane	88	2.456	2.456	0.000	98	454660	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	95	748381	120.0	111.1	
16 Pyridine	79	2.842	2.847	-0.005	99	1272569	120.0	108.0	
26 Phenol	94	5.286	5.286	0.000	98	1219127	120.0	113.5	
27 Aniline	93	5.313	5.313	0.001	99	1517974	120.0	111.9	
28 Bis(2-chloroethyl)ether	93	5.355	5.350	0.005	99	982369	120.0	112.5	
30 2-Chlorophenol	128	5.420	5.419	0.001	96	990584	120.0	112.2	
31 1,3-Dichlorobenzene	146	5.543	5.543	0.001	99	1082656	120.0	110.4	
32 1,4-Dichlorobenzene	146	5.601	5.601	0.000	97	1066984	120.0	110.8	
33 Benzyl alcohol	108	5.682	5.682	0.000	99	687164	120.0	115.5	
34 1,2-Dichlorobenzene	146	5.724	5.724	0.000	98	994079	120.0	106.1	
35 2-Methylphenol	108	5.767	5.767	0.000	98	928267	120.0	115.9	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	98	1491492	120.0	107.9	
39 3 & 4 Methylphenol	108	5.880	5.879	0.001	89	928125	120.0	106.4	
40 N-Nitrosodi-n-propylamine	70	5.885	5.879	0.006	85	761161	120.0	108.2	
42 Acetophenone	105	5.885	5.885	0.000	90	1294817	120.0	103.6	
45 Hexachloroethane	117	5.987	5.986	0.001	93	463814	120.0	113.2	
46 Nitrobenzene	77	6.019	6.013	0.006	99	1093538	120.0	109.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.190	6.184	0.006	99	1932724	120.0	110.0	
49 2-Nitrophenol	139	6.249	6.249	0.000	96	576564	120.0	122.6	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	99	1008133	120.0	112.0	
52 Bis(2-chloroethoxy)methane	93	6.324	6.323	0.001	99	1187834	120.0	108.8	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	98	835948	120.0	115.1	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	96	894977	120.0	107.9	
58 Naphthalene	128	6.553	6.548	0.005	98	2325285	120.0	97.9	
59 4-Chloroaniline	127	6.575	6.575	0.000	99	1226490	120.0	111.5	
60 2,6-Dichlorophenol	162	6.591	6.585	0.006	98	805106	120.0	114.1	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	97	532875	120.0	108.4	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	99	924930	120.0	112.1	
69 2-Methylnaphthalene	142	7.062	7.062	0.000	99	1764371	120.0	101.5	
70 1-Methylnaphthalene	142	7.142	7.142	0.000	99	1653585	120.0	102.9	
71 Hexachlorocyclopentadiene	237	7.190	7.190	0.000	89	643092	120.0	122.5	
72 1,2,4,5-Tetrachlorobenzene	216	7.195	7.195	0.000	94	893269	120.0	107.4	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	97	641101	120.0	121.2	
75 2,4,5-Trichlorophenol	196	7.302	7.302	0.000	98	645883	120.0	115.9	
77 1,1'-Biphenyl	154	7.415	7.415	0.000	96	2058024	120.0	100.6	
78 2-Chloronaphthalene	162	7.447	7.447	0.000	98	1697166	120.0	106.5	
80 2-Nitroaniline	65	7.506	7.505	0.001	97	714780	120.0	120.1	
84 Dimethyl phthalate	163	7.634	7.634	0.000	97	1989951	120.0	108.9	
85 1,3-Dinitrobenzene	168	7.671	7.666	0.005	97	383978	120.0	123.3	
86 2,6-Dinitrotoluene	165	7.693	7.687	0.006	97	521523	120.0	120.2	
87 Acenaphthylene	152	7.789	7.789	0.000	98	2502266	120.0	101.4	
88 3-Nitroaniline	138	7.843	7.837	0.005	97	605923	120.0	121.4	
89 2,4-Dinitrophenol	184	7.928	7.923	0.005	85	654984	240.0	248.6	
90 Acenaphthene	153	7.933	7.933	0.000	97	1649436	120.0	103.4	
91 4-Nitrophenol	109	7.966	7.960	0.006	98	651640	240.0	253.5	
92 2,4-Dinitrotoluene	165	8.035	8.030	0.005	97	709247	120.0	119.9	
94 Dibenzofuran	168	8.078	8.078	0.000	98	2279305	120.0	100.7	
97 2,3,4,6-Tetrachlorophenol	232	8.179	8.174	0.005	98	553617	120.0	125.3	
99 Diethyl phthalate	149	8.222	8.222	0.000	88	1947969	120.0	106.0	
101 4-Chlorophenyl phenyl ethe	204	8.351	8.351	0.000	98	1033455	120.0	111.3	
103 4-Nitroaniline	138	8.377	8.372	0.005	61	608595	120.0	119.9	
104 Fluorene	166	8.377	8.377	0.000	97	1900200	120.0	101.9	
105 4,6-Dinitro-2-methylphenol	198	8.404	8.399	0.005	98	861219	240.0	242.6	
107 Diphenylamine	169	8.452	8.452	0.000	99	1545428	NC	NC	
106 N-Nitrosodiphenylamine	169	8.452	8.452	0.000	99	1545428	120.0	106.1	
108 Azobenzene	77	8.495	8.495	0.000	98	2155088	120.0	103.1	
115 4-Bromophenyl phenyl ether	248	8.795	8.794	0.001	98	639798	120.0	108.0	
117 Hexachlorobenzene	284	8.891	8.891	0.000	98	660837	120.0	108.6	
120 Pentachlorophenol	266	9.057	9.057	0.000	87	810816	240.0	250.9	
125 Phenanthrene	178	9.265	9.260	0.005	98	2727055	120.0	103.0	
126 Anthracene	178	9.313	9.308	0.005	97	2793166	120.0	102.0	
127 Carbazole	167	9.447	9.442	0.005	98	2653783	120.0	104.6	
129 Di-n-butyl phthalate	149	9.731	9.730	0.001	99	3292324	120.0	106.0	
134 Fluoranthene	202	10.415	10.415	0.000	97	3199664	120.0	106.0	
136 Pyrene	202	10.667	10.666	0.001	97	3292118	120.0	109.7	
142 Butyl benzyl phthalate	149	11.415	11.410	0.005	99	1840695	120.0	118.3	
150 Benzo[a]anthracene	228	12.384	12.378	0.006	88	3377895	120.0	111.9	
149 Bis(2-ethylhexyl) phthalat	149	12.378	12.378	0.000	88	2559792	120.0	120.2	
151 Chrysene	228	12.458	12.448	0.010	99	3267579	120.0	113.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.833	13.822	0.011	100	4693241	120.0	126.7	
155 Benzo[b]fluoranthene	252	14.833	14.822	0.011	99	3815167	120.0	112.1	
156 Benzo[k]fluoranthene	252	14.913	14.897	0.016	98	3684838	120.0	109.8	
157 Benzo[a]pyrene	252	15.748	15.726	0.022	99	3794169	120.0	118.8	
161 Indeno[1,2,3-cd]pyrene	276	18.786	18.775	0.011	99	3076473	120.0	112.9	
162 Dibenz(a,h)anthracene	278	18.850	18.834	0.016	98	3052641	120.0	108.3	
163 Benzo[g,h,i]perylene	276	19.380	19.363	0.017	98	2842546	120.0	106.7	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL9_00009 Amount Added: 1.00 Units: mL

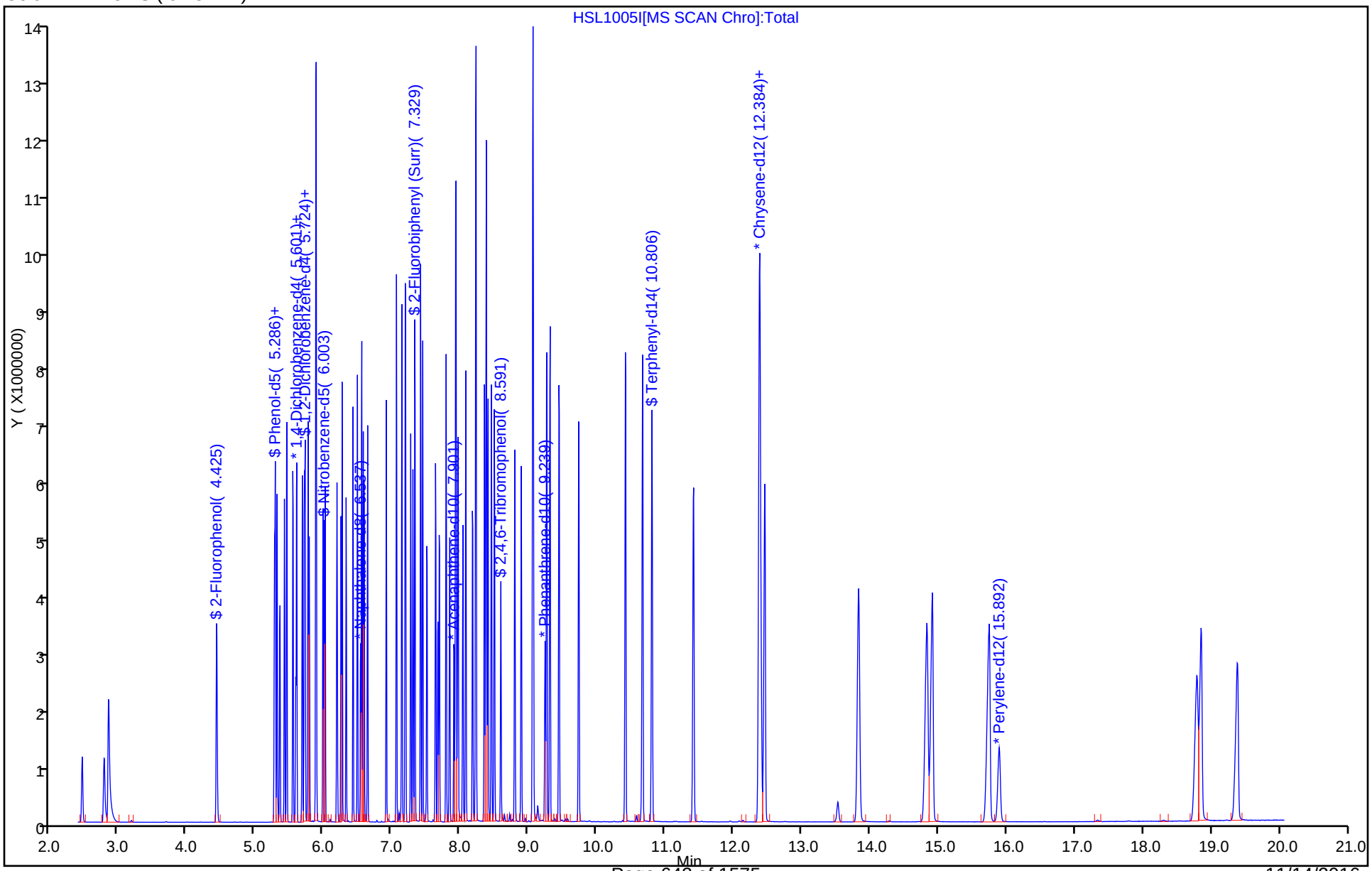
Report Date: 05-Oct-2016 20:43:51 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005I.D

Injection Date:	05-Oct-2016 18:55:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-9 HSL			Worklist Smp#:	20
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	19
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D
Lims ID: IC CS-10 HSL
Client ID:
Sample Type: IC Calib Level: 10
Inject. Date: 05-Oct-2016 19:23:30 ALS Bottle#: 20 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ic cs-10 hsl
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:43:54 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 20:15:54

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	98	226245	40.0	40.0	
* 2 Naphthalene-d8	136	6.538	6.532	0.006	100	864747	40.0	40.0	
* 3 Acenaphthene-d10	164	7.907	7.907	0.000	100	560549	40.0	40.0	
* 4 Phenanthrene-d10	188	9.239	9.238	0.001	100	889767	40.0	40.0	
* 5 Chrysene-d12	240	12.405	12.399	0.006	100	892374	40.0	40.0	
* 6 Perylene-d12	264	15.898	15.887	0.011	100	932987	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	99	1230478	160.0	156.4	
$ 8 Phenol-d5	99	5.275	5.275	0.000	98	1425366	160.0	149.3	
$ 9 1,2-Dichlorobenzene-d4	152	5.714	5.708	0.006	98	736709	NC	NC	
$ 10 Nitrobenzene-d5	82	6.003	6.002	0.001	98	1337086	160.0	139.9	
$ 11 2-Fluorobiphenyl (Surr)	172	7.334	7.329	0.005	97	2351550	160.0	130.7	
$ 12 2,4,6-Tribromophenol	330	8.597	8.591	0.006	97	386357	160.0	151.2	
$ 13 Terphenyl-d14	244	10.806	10.800	0.006	99	2567521	160.0	143.3	
14 1,4-Dioxane	88	2.457	2.456	0.001	97	493602	NC	NC	
15 N-Nitrosodimethylamine	74	2.783	2.777	0.006	96	917643	160.0	153.6	
16 Pyridine	79	2.842	2.847	-0.005	99	1554529	160.0	148.7	
26 Phenol	94	5.291	5.286	0.005	98	1362464	160.0	143.1	
27 Aniline	93	5.313	5.313	0.001	99	1691176	160.0	140.6	
28 Bis(2-chloroethyl)ether	93	5.355	5.350	0.005	99	1124932	160.0	145.3	
30 2-Chlorophenol	128	5.420	5.419	0.001	95	1138029	160.0	145.3	
31 1,3-Dichlorobenzene	146	5.548	5.543	0.006	99	1217121	160.0	140.0	
32 1,4-Dichlorobenzene	146	5.602	5.601	0.001	97	1202557	160.0	140.9	
33 Benzyl alcohol	108	5.687	5.682	0.005	99	775745	160.0	147.1	
34 1,2-Dichlorobenzene	146	5.725	5.724	0.001	98	1119104	160.0	134.7	
35 2-Methylphenol	108	5.767	5.767	0.000	98	1018804	160.0	143.5	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	98	1677172	160.0	136.8	
39 3 & 4 Methylphenol	108	5.885	5.879	0.006	83	1057417	160.0	136.7	
40 N-Nitrosodi-n-propylamine	70	5.885	5.879	0.006	83	871853	160.0	139.8	
42 Acetophenone	105	5.890	5.885	0.005	87	1477116	160.0	135.8	
45 Hexachloroethane	117	5.987	5.986	0.001	93	542516	160.0	149.3	
46 Nitrobenzene	77	6.019	6.013	0.006	98	1201488	160.0	138.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.195	6.184	0.011	98	2236946	160.0	146.2	
49 2-Nitrophenol	139	6.249	6.249	0.000	94	633526	160.0	154.8	
50 2,4-Dimethylphenol	107	6.270	6.265	0.005	98	1140301	160.0	145.5	
52 Bis(2-chloroethoxy)methane	93	6.324	6.323	0.001	98	1321230	160.0	138.9	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	96	917633	160.0	145.1	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	96	991093	160.0	137.3	
58 Naphthalene	128	6.554	6.548	0.006	97	2493911	160.0	120.6	
59 4-Chloroaniline	127	6.575	6.575	0.000	97	1290798	160.0	134.7	
60 2,6-Dichlorophenol	162	6.591	6.585	0.006	99	881409	160.0	143.5	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	96	618147	160.0	144.5	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	99	1131799	160.0	157.6	
69 2-Methylnaphthalene	142	7.062	7.062	0.000	98	2112864	160.0	139.6	
70 1-Methylnaphthalene	142	7.142	7.142	0.000	99	1991268	160.0	142.3	
71 Hexachlorocyclopentadiene	237	7.190	7.190	0.000	91	788640	160.0	155.7	
72 1,2,4,5-Tetrachlorobenzene	216	7.195	7.195	0.000	94	1087167	160.0	135.5	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	97	781615	160.0	153.2	
75 2,4,5-Trichlorophenol	196	7.302	7.302	0.000	98	818975	160.0	152.4	
77 1,1'-Biphenyl	154	7.420	7.415	0.005	96	2454542	160.0	124.3	
78 2-Chloronaphthalene	162	7.447	7.447	0.000	97	2028568	160.0	132.0	
80 2-Nitroaniline	65	7.511	7.505	0.006	96	879232	160.0	153.1	
84 Dimethyl phthalate	163	7.639	7.634	0.005	97	2398173	160.0	136.1	
85 1,3-Dinitrobenzene	168	7.671	7.666	0.005	97	481806	160.0	160.4	
86 2,6-Dinitrotoluene	165	7.693	7.687	0.006	96	639805	160.0	152.8	
87 Acenaphthylene	152	7.789	7.789	0.000	97	2946713	160.0	123.7	
88 3-Nitroaniline	138	7.848	7.837	0.011	97	750051	160.0	155.8	
89 2,4-Dinitrophenol	184	7.934	7.923	0.011	84	832356	320.0	327.4	
90 Acenaphthene	153	7.939	7.933	0.006	99	1974233	160.0	128.3	
91 4-Nitrophenol	109	7.971	7.960	0.011	98	820286	320.0	330.8	
92 2,4-Dinitrotoluene	165	8.041	8.030	0.010	96	895540	160.0	156.9	
94 Dibenzofuran	168	8.078	8.078	0.000	97	2708066	160.0	124.0	
97 2,3,4,6-Tetrachlorophenol	232	8.180	8.174	0.006	97	680688	160.0	159.8	
99 Diethyl phthalate	149	8.228	8.222	0.006	82	2341006	160.0	132.0	
101 4-Chlorophenyl phenyl ethe	204	8.351	8.351	0.000	98	1205559	160.0	134.6	
103 4-Nitroaniline	138	8.383	8.372	0.011	85	694859	160.0	141.9	
104 Fluorene	166	8.377	8.377	0.000	99	2157433	160.0	120.0	
105 4,6-Dinitro-2-methylphenol	198	8.410	8.399	0.011	97	1001583	320.0	326.9	
107 Diphenylamine	169	8.458	8.452	0.006	98	1720967	NC	NC	
106 N-Nitrosodiphenylamine	169	8.458	8.452	0.006	98	1720967	160.0	136.9	
108 Azobenzene	77	8.500	8.495	0.005	97	2373686	160.0	131.6	
115 4-Bromophenyl phenyl ether	248	8.795	8.794	0.001	97	762739	160.0	149.2	
117 Hexachlorobenzene	284	8.891	8.891	0.000	98	743052	160.0	141.4	
120 Pentachlorophenol	266	9.062	9.057	0.005	87	938562	320.0	336.4	
125 Phenanthrene	178	9.265	9.260	0.005	97	3029938	160.0	132.5	
126 Anthracene	178	9.313	9.308	0.005	96	3113874	160.0	131.8	
127 Carbazole	167	9.447	9.442	0.005	97	2967287	160.0	135.5	
129 Di-n-butyl phthalate	149	9.736	9.730	0.006	99	3573435	160.0	133.3	
134 Fluoranthene	202	10.421	10.415	0.006	97	3492392	160.0	134.1	
136 Pyrene	202	10.672	10.666	0.006	96	3649070	160.0	140.9	
142 Butyl benzyl phthalate	149	11.415	11.410	0.005	99	2012698	160.0	149.9	
150 Benzo[a]anthracene	228	12.389	12.378	0.011	88	3757385	160.0	144.3	
149 Bis(2-ethylhexyl) phthalat	149	12.378	12.378	0.000	86	2774760	160.0	151.0	
151 Chrysene	228	12.464	12.448	0.016	98	3651094	160.0	147.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.833	13.822	0.011	100	4845620	160.0	151.7	
155 Benzo[b]fluoranthene	252	14.839	14.822	0.017	99	4325261	160.0	154.3	
156 Benzo[k]fluoranthene	252	14.924	14.897	0.027	99	3996996	160.0	144.7	
157 Benzo[a]pyrene	252	15.753	15.726	0.027	99	4143438	160.0	157.5	
161 Indeno[1,2,3-cd]pyrene	276	18.797	18.775	0.022	99	3634634	160.0	161.9	
162 Dibenz(a,h)anthracene	278	18.861	18.834	0.027	97	3525998	160.0	151.8	
163 Benzo[g,h,i]perylene	276	19.396	19.363	0.033	98	3214811	160.0	146.5	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL10_00005 Amount Added: 1.00 Units: mL

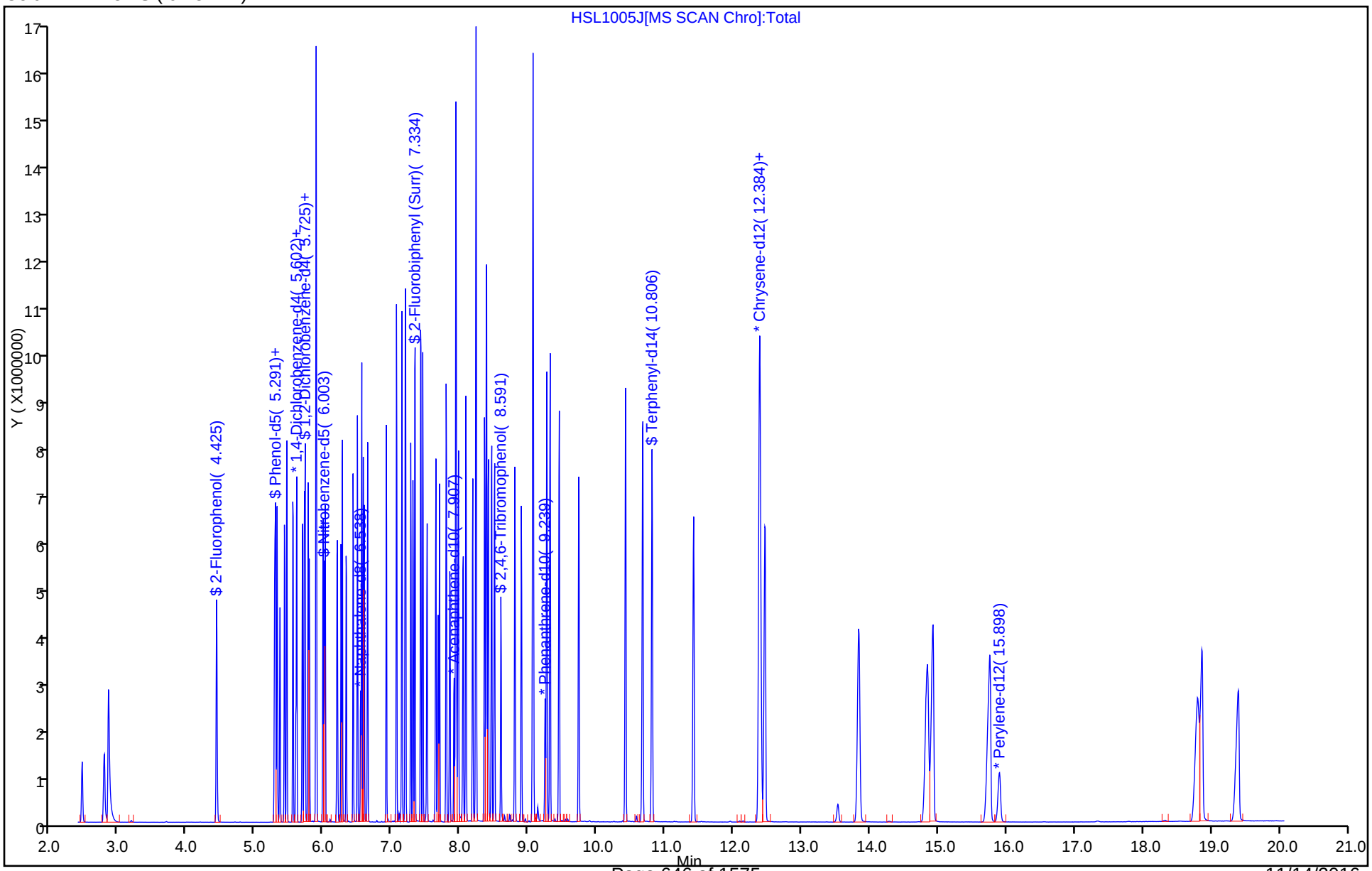
Report Date: 05-Oct-2016 20:43:56 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Injection Date:	05-Oct-2016 19:23:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	IC CS-10 HSL			Worklist Smp#:	21
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	20
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (1): ICIS 320-130823/18 Instrument ID (1): SV5

GC Column (1): HP-5MS ID: 0.25(mm) Date Analyzed (1): 10/05/2016 18:00

ANALYTE	RT	RESOLUTION (%)
N-Nitrosodimethylamine	2.78	100.0
2-Fluorophenol (Surr)	4.43	100.0
Phenol-d5 (Surr)	5.28	100.0
Phenol	5.29	100.0
Bis(2-chloroethyl)ether	5.35	100.0
2-Chlorophenol	5.42	100.0
1,3-Dichlorobenzene	5.54	100.0
1,4-Dichlorobenzene	5.60	100.0
Benzyl alcohol	5.68	100.0
1,2-Dichlorobenzene	5.72	100.0
2-Methylphenol	5.77	100.0
2,2'-oxybis[1-chloropropane]	5.78	100.0
N-Nitrosodi-n-propylamine	5.88	100.0
3 & 4 Methylphenol	5.88	100.0
Hexachloroethane	5.99	100.0
Nitrobenzene-d5 (Surr)	6.00	100.0
Nitrobenzene	6.01	100.0
Isophorone	6.18	100.0
2-Nitrophenol	6.25	100.0
2,4-Dimethylphenol	6.27	100.0
Bis(2-chloroethoxy)methane	6.32	100.0
2,4-Dichlorophenol	6.43	100.0
1,2,4-Trichlorobenzene	6.49	100.0
Naphthalene	6.55	100.0
4-Chloroaniline	6.58	100.0
Hexachlorobutadiene	6.64	100.0
4-Chloro-3-methylphenol	6.91	100.0
2-Methylnaphthalene	7.06	100.0
2,4,6-Trichlorophenol	7.27	100.0
2,4,5-Trichlorophenol	7.30	100.0
2-Fluorobiphenyl (Surr)	7.33	100.0
2-Chloronaphthalene	7.45	100.0
2-Nitroaniline	7.51	100.0
Dimethyl phthalate	7.63	100.0
2,6-Dinitrotoluene	7.69	100.0
Acenaphthylene	7.79	100.0
3-Nitroaniline	7.84	100.0
2,4-Dinitrophenol	7.92	100.0
Acenaphthene	7.93	100.0
4-Nitrophenol	7.96	100.0
2,4-Dinitrotoluene	8.03	100.0
Dibenzofuran	8.08	100.0
Diethyl phthalate	8.22	100.0
4-Chlorophenyl phenyl ether	8.35	100.0
4-Nitroaniline	8.37	100.0

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (1): ICIS 320-130823/18 Instrument ID (1): SV5

GC Column (1): HP-5MS ID: 0.25(mm) Date Analyzed (1): 10/05/2016 18:00

ANALYTE	RT	RESOLUTION (%)
Fluorene	8.38	100.0
4,6-Dinitro-2-methylphenol	8.40	100.0
N-Nitrosodiphenylamine	8.45	100.0
Azobenzene	8.50	100.0
2,4,6-Tribromophenol (Surr)	8.59	100.0
4-Bromophenyl phenyl ether	8.79	100.0
Hexachlorobenzene	8.89	100.0
Pentachlorophenol	9.06	100.0
Phenanthrene	9.26	100.0
Anthracene	9.31	100.0
Carbazole	9.44	100.0
Di-n-butyl phthalate	9.73	100.0
Fluoranthene	10.42	100.0
Pyrene	10.67	100.0
Terphenyl-d14 (Surr)	10.80	100.0
Butyl benzyl phthalate	11.41	100.0
Bis(2-ethylhexyl) phthalate	12.38	100.0
Benzo[a]anthracene	12.38	100.0
Chrysene	12.45	100.0
Di-n-octyl phthalate	13.82	100.0
Benzo[b]fluoranthene	14.82	17.20
Benzo[k]fluoranthene	14.90	100.0
Benzo[a]pyrene	15.73	100.0
Indeno[1,2,3-cd]pyrene	18.78	100.0
Dibenz(a,h)anthracene	18.83	100.0

Resolution Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005G.D
Injection Date: 05-Oct-2016 18:00:30 Instrument ID: SV5
Lims ID: ICIS CS-7 HSL
Client ID:
Operator ID: ALS Bottle#: 17 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

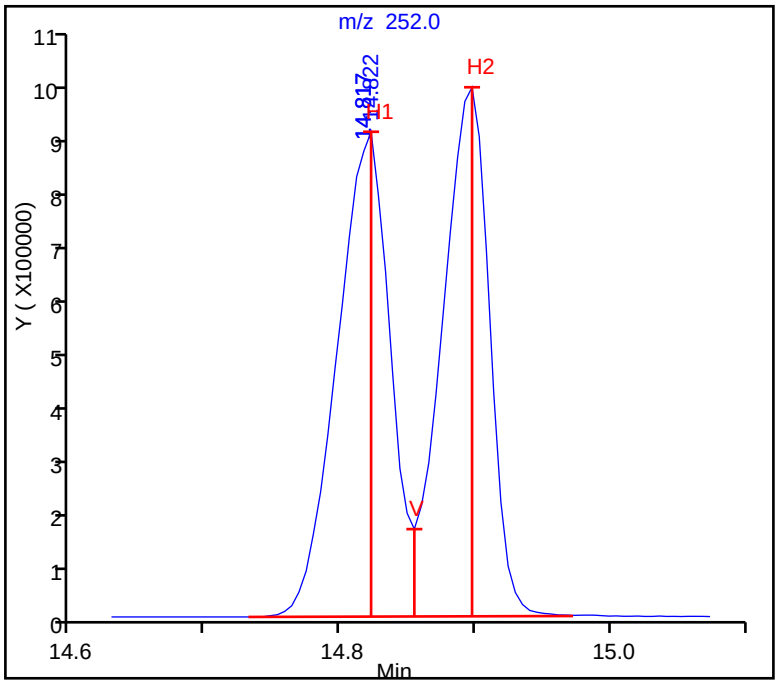
155 Benzo[b]fluoranthene - 156 Benzo[k]fluoranthene

SW-846 Method

Version D: %R = (V / ((H1 + H2)/2)) * 100

V (Valley Height) = 152774
H1(155 Benzo[b]fluoranthen) = 847902
H2(156 Benzo[k]fluoranthen) = 925286

Version D: %R = 17.2 <= 50.0
Passed



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (1): CCV 320-134817/2 Instrument ID (1): SV5

GC Column (1): HP-5MS ID: 0.25(mm) Date Analyzed (1): 10/27/2016 10:14

ANALYTE	RT	RESOLUTION (%)
N-Nitrosodimethylamine	2.81	100.0
2-Fluorophenol (Surr)	4.51	100.0
Phenol-d5 (Surr)	5.36	100.0
Phenol	5.37	100.0
Bis(2-chloroethyl)ether	5.43	100.0
2-Chlorophenol	5.50	100.0
1,3-Dichlorobenzene	5.62	100.0
1,4-Dichlorobenzene	5.68	100.0
Benzyl alcohol	5.76	100.0
1,2-Dichlorobenzene	5.80	100.0
2-Methylphenol	5.84	100.0
2,2'-oxybis[1-chloropropane]	5.86	100.0
N-Nitrosodi-n-propylamine	5.95	100.0
3 & 4 Methylphenol	5.95	100.0
Hexachloroethane	6.06	100.0
Nitrobenzene-d5 (Surr)	6.08	100.0
Nitrobenzene	6.09	100.0
Isophorone	6.27	100.0
2-Nitrophenol	6.32	100.0
2,4-Dimethylphenol	6.34	100.0
Bis(2-chloroethoxy)methane	6.40	100.0
2,4-Dichlorophenol	6.51	100.0
1,2,4-Trichlorobenzene	6.57	100.0
Naphthalene	6.63	100.0
4-Chloroaniline	6.65	100.0
Hexachlorobutadiene	6.71	100.0
4-Chloro-3-methylphenol	6.99	100.0
2-Methylnaphthalene	7.14	100.0
2,4,6-Trichlorophenol	7.36	100.0
2,4,5-Trichlorophenol	7.39	100.0
2-Fluorobiphenyl (Surr)	7.41	100.0
2-Chloronaphthalene	7.53	100.0
2-Nitroaniline	7.59	100.0
Dimethyl phthalate	7.71	100.0
2,6-Dinitrotoluene	7.77	100.0
Acenaphthylene	7.87	100.0
3-Nitroaniline	7.92	100.0
2,4-Dinitrophenol	8.01	100.0
Acenaphthene	8.02	100.0
4-Nitrophenol	8.05	100.0
2,4-Dinitrotoluene	8.12	100.0
Dibenzofuran	8.16	100.0
Diethyl phthalate	8.30	100.0
4-Chlorophenyl phenyl ether	8.44	100.0
4-Nitroaniline	8.46	100.0

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (1): CCV 320-134817/2 Instrument ID (1): SV5

GC Column (1): HP-5MS ID: 0.25(mm) Date Analyzed (1): 10/27/2016 10:14

ANALYTE	RT	RESOLUTION (%)
Fluorene	8.47	100.0
4,6-Dinitro-2-methylphenol	8.49	100.0
N-Nitrosodiphenylamine	8.54	100.0
Azobenzene	8.58	100.0
2,4,6-Tribromophenol (Surr)	8.68	100.0
4-Bromophenyl phenyl ether	8.88	100.0
Hexachlorobenzene	8.98	100.0
Pentachlorophenol	9.15	100.0
Phenanthrene	9.36	100.0
Anthracene	9.40	100.0
Carbazole	9.53	100.0
Di-n-butyl phthalate	9.81	100.0
Fluoranthene	10.52	100.0
Pyrene	10.77	100.0
Terphenyl-d14 (Surr)	10.91	100.0
Butyl benzyl phthalate	11.53	100.0
Bis(2-ethylhexyl) phthalate	12.51	100.0
Benzo[a]anthracene	12.54	100.0
Chrysene	12.62	100.0
Di-n-octyl phthalate	14.00	100.0
Benzo[b]fluoranthene	15.07	16.50
Benzo[k]fluoranthene	15.15	100.0
Benzo[a]pyrene	16.01	100.0
Indeno[1,2,3-cd]pyrene	19.03	100.0
Dibenz(a,h)anthracene	19.09	100.0

Resolution Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\HSL1027.D
Injection Date: 27-Oct-2016 10:14:30 Instrument ID: SV5
Lims ID: CCV HSL
Client ID:
Operator ID: ALS Bottle#: 97 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

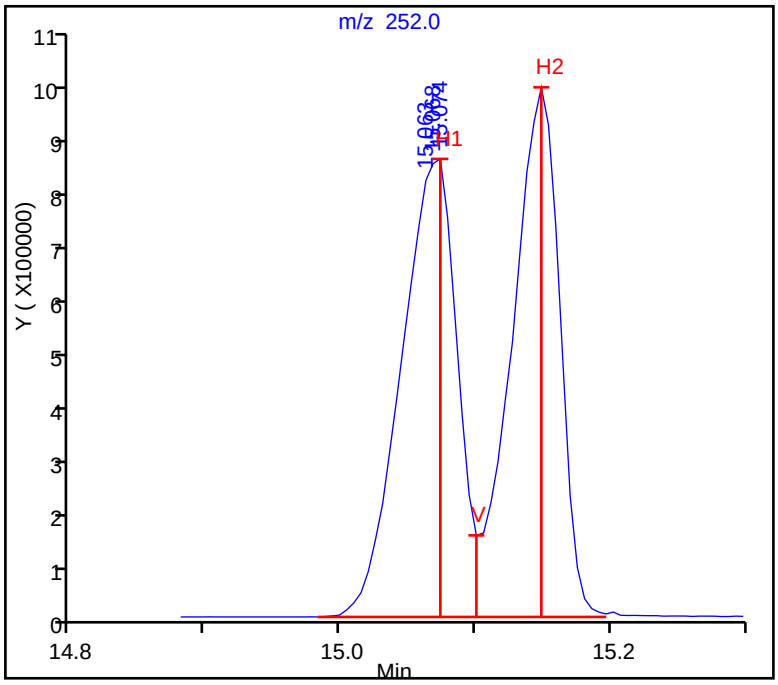
155 Benzo[b]fluoranthene - 156 Benzo[k]fluoranthene

SW-846 Method

Version D: %R = (V / ((H1 + H2)/2)) * 100

V (Valley Height) = 143232
H1(155 Benzo[b]fluoranthen) = 804224
H2(156 Benzo[k]fluoranthen) = 930048

Version D: %R = 16.5 <= 50.0
Passed



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (1): CCVC 320-134817/17 Instrument ID (1): SV5

GC Column (1): HP-5MS ID: 0.25(mm) Date Analyzed (1): 10/27/2016 17:42

ANALYTE	RT	RESOLUTION (%)
N-Nitrosodimethylamine	2.81	100.0
2-Fluorophenol (Surr)	4.51	100.0
Phenol-d5 (Surr)	5.36	100.0
Phenol	5.37	100.0
Bis(2-chloroethyl)ether	5.43	100.0
2-Chlorophenol	5.50	100.0
1,3-Dichlorobenzene	5.62	100.0
1,4-Dichlorobenzene	5.68	100.0
Benzyl alcohol	5.76	100.0
1,2-Dichlorobenzene	5.80	100.0
2-Methylphenol	5.84	100.0
2,2'-oxybis[1-chloropropane]	5.86	100.0
N-Nitrosodi-n-propylamine	5.95	100.0
3 & 4 Methylphenol	5.95	100.0
Hexachloroethane	6.06	100.0
Nitrobenzene-d5 (Surr)	6.08	100.0
Nitrobenzene	6.09	100.0
Isophorone	6.27	100.0
2-Nitrophenol	6.32	100.0
2,4-Dimethylphenol	6.34	100.0
Bis(2-chloroethoxy)methane	6.40	100.0
2,4-Dichlorophenol	6.51	100.0
1,2,4-Trichlorobenzene	6.56	100.0
Naphthalene	6.63	100.0
4-Chloroaniline	6.65	100.0
Hexachlorobutadiene	6.71	100.0
4-Chloro-3-methylphenol	6.99	100.0
2-Methylnaphthalene	7.14	100.0
2,4,6-Trichlorophenol	7.35	100.0
2,4,5-Trichlorophenol	7.39	100.0
2-Fluorobiphenyl (Surr)	7.41	100.0
2-Chloronaphthalene	7.53	100.0
2-Nitroaniline	7.59	100.0
Dimethyl phthalate	7.71	100.0
2,6-Dinitrotoluene	7.77	100.0
Acenaphthylene	7.88	100.0
3-Nitroaniline	7.92	100.0
2,4-Dinitrophenol	8.01	100.0
Acenaphthene	8.02	100.0
4-Nitrophenol	8.05	100.0
2,4-Dinitrotoluene	8.12	100.0
Dibenzofuran	8.16	100.0
Diethyl phthalate	8.30	100.0
4-Chlorophenyl phenyl ether	8.44	100.0
4-Nitroaniline	8.46	100.0

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (1): CCVC 320-134817/17 Instrument ID (1): SV5

GC Column (1): HP-5MS ID: 0.25(mm) Date Analyzed (1): 10/27/2016 17:42

ANALYTE	RT	RESOLUTION (%)
Fluorene	8.46	100.0
4,6-Dinitro-2-methylphenol	8.49	100.0
N-Nitrosodiphenylamine	8.54	100.0
Azobenzene	8.58	100.0
2,4,6-Tribromophenol (Surr)	8.68	100.0
4-Bromophenyl phenyl ether	8.88	100.0
Hexachlorobenzene	8.98	100.0
Pentachlorophenol	9.15	100.0
Phenanthrene	9.35	100.0
Anthracene	9.40	100.0
Carbazole	9.53	100.0
Di-n-butyl phthalate	9.81	100.0
Fluoranthene	10.51	100.0
Pyrene	10.77	100.0
Terphenyl-d14 (Surr)	10.91	100.0
Butyl benzyl phthalate	11.52	100.0
Bis(2-ethylhexyl) phthalate	12.51	100.0
Benzo[a]anthracene	12.54	100.0
Chrysene	12.61	100.0
Di-n-octyl phthalate	14.00	100.0
Benzo[b]fluoranthene	15.07	17.50
Benzo[k]fluoranthene	15.14	100.0
Benzo[a]pyrene	16.00	100.0
Indeno[1,2,3-cd]pyrene	19.02	100.0
Dibenz(a,h)anthracene	19.08	100.0

Resolution Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\HSL1005L.D
Injection Date: 27-Oct-2016 17:42:30 Instrument ID: SV5
Lims ID: CCVC HSL
Client ID:
Operator ID: ALS Bottle#: 97 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

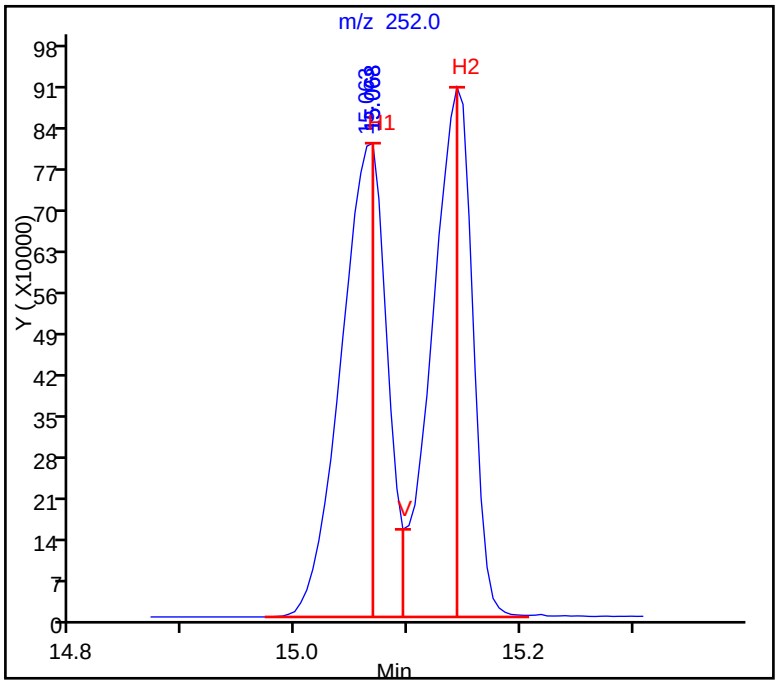
155 Benzo[b]fluoranthene - 156 Benzo[k]fluoranthene

SW-846 Method

Version D: %R = (V / ((H1 + H2)/2)) * 100

V (Valley Height) = 148864
H1(155 Benzo[b]fluoranthen) = 805120
H2(156 Benzo[k]fluoranthen) = 900160

Version D: %R = 17.5 <= 50.0
Passed



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-130823/11 Calibration Date: 10/05/2016 14:46

Instrument ID: SV5 Calib Start Date: 10/05/2016 10:35

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 14:16

Lab File ID: ODD1005.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Benzaldehyde	Ave	1.081	0.8456		58.7	75.0	-21.8	30.0
Benzoic acid	Qua2		0.1937	0.0100	144	150	-3.8	20.0
Benzidine	Ave	0.8668	0.8416		72.8	75.0	-2.9	30.0
3,3'-Dichlorobenzidine	Ave	0.4426	0.4343	0.0100	73.6	75.0	-1.9	20.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005.D
Lims ID: ICV ODD
Client ID:
Sample Type: ICV
Inject. Date: 05-Oct-2016 14:46:30 ALS Bottle#: 10 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: icv odd
Operator ID: Instrument ID: SV5
Sublist:

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 15:24:38 Calib Date: 05-Oct-2016 14:16:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005I.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 15:40:54

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	100	285794	40.0	40.0	
* 2 Naphthalene-d8	136	6.532	6.532	0.000	100	977445	40.0	40.0	
* 3 Acenaphthene-d10	164	7.901	7.901	0.000	100	534499	40.0	40.0	
* 4 Phenanthrene-d10	188	9.233	9.233	0.000	100	889872	40.0	40.0	
* 5 Chrysene-d12	240	12.394	12.394	0.000	100	930364	40.0	40.0	
* 6 Perylene-d12	264	15.887	15.881	0.006	99	866762	40.0	40.0	
21 1,4-Oxathiane	46	4.590	4.590	0.000	100	590828	NC	NC	
25 Benzaldehyde	106	5.222	5.222	0.000	99	453145	75.0	58.7	
37 Indene	115	5.788	5.788	0.000	28	1892254	NC	NC	
44 1,4-Dithiane	120	5.938	5.938	0.000	99	508542	NC	NC	
53 Benzoic acid	105	6.355	6.350	0.005	99	709880	150.0	144.3	
56 Thiodiglycol	61	6.441	6.436	0.005	98	438033	NC	NC	
66 Caprolactam	113	6.837	6.837	0.000	99	185926	NC	NC	
118 Atrazine	200	8.912	8.912	0.000	99	373888	NC	NC	
135 Benzidine	184	10.517	10.517	0.000	100	1468052	75.0	72.8	
147 3,3'-Dichlorobenzidine	252	12.303	12.303	0.000	100	757671	75.0	73.6	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

MSODDICV_00008 Amount Added: 1.00 Units: mL

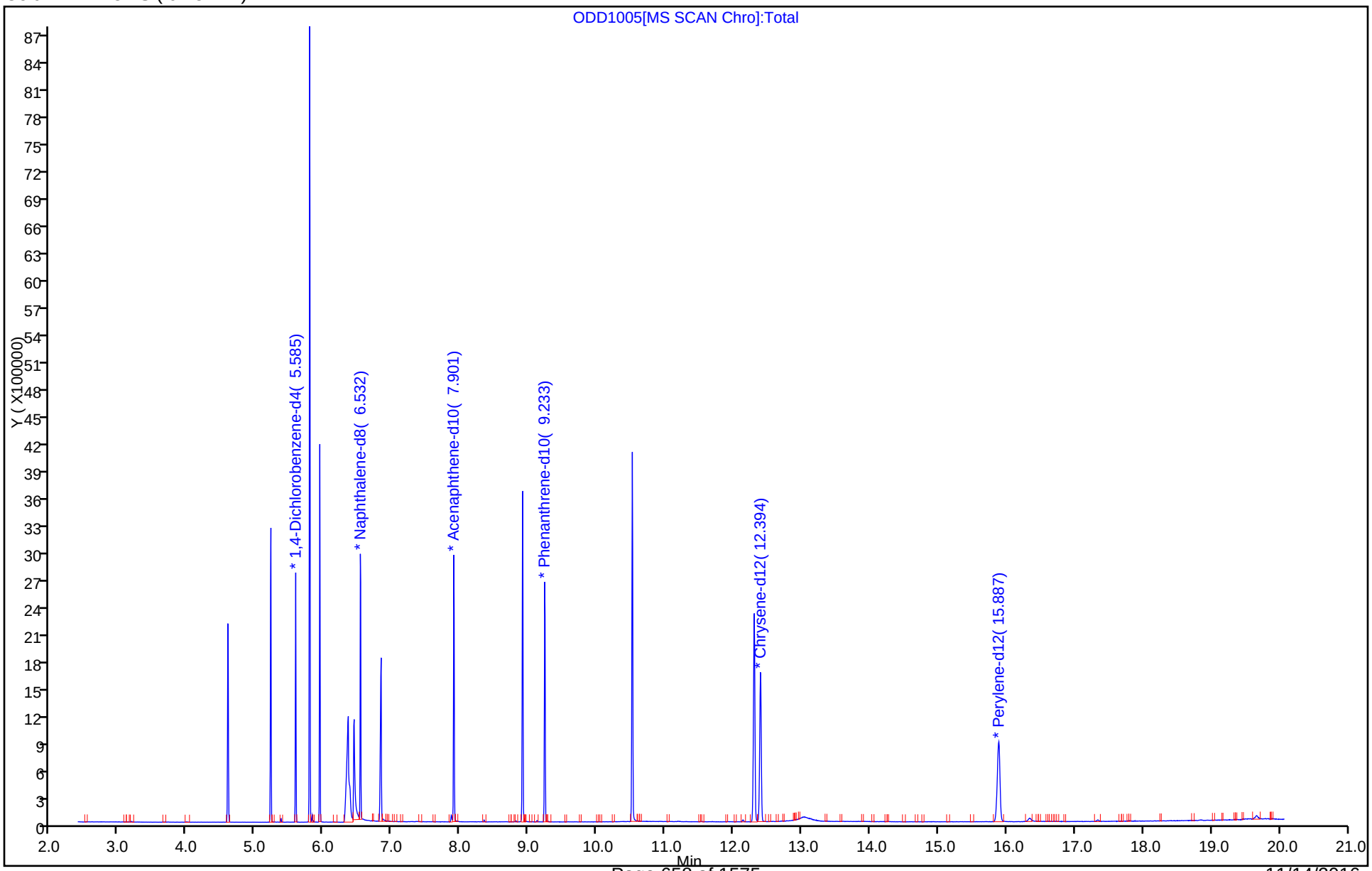
Report Date: 05-Oct-2016 15:40:55 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\ODD1005.D

Injection Date:	05-Oct-2016 14:46:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	ICV ODD			Worklist Smp#:	11
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-130823/22 Calibration Date: 10/05/2016 19:58

Instrument ID: SV5 Calib Start Date: 10/05/2016 15:14

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 19:23

Lab File ID: HSL1005.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
N-Nitrosodimethylamine	Ave	1.056	0.8881	0.1000	63.1	75.0	-15.9	20.0
Pyridine	Ave	1.848	1.760		71.4	75.0	-4.8	20.0
Phenol	Ave	1.683	1.736	0.8000	77.3	75.0	3.1	20.0
Aniline	Ave	2.127	2.131	0.9000	75.1	75.0	0.2	20.0
Bis(2-chloroethyl)ether	Ave	1.369	1.324	0.7000	72.6	75.0	-3.3	20.0
2-Chlorophenol	Ave	1.384	1.390	0.8000	75.3	75.0	0.4	20.0
1,3-Dichlorobenzene	Ave	1.538	1.493	0.9000	72.8	75.0	-2.9	20.0
1,4-Dichlorobenzene	Ave	1.509	1.509	0.9000	75.0	75.0	-0.0	20.0
Benzyl alcohol	Ave	0.9323	0.9230	0.1000	74.2	75.0	-1.0	20.0
1,2-Dichlorobenzene	Ave	1.469	1.404	0.9000	71.7	75.0	-4.4	20.0
2-Methylphenol	Ave	1.256	1.278	0.7000	76.3	75.0	1.8	20.0
2,2'-oxybis[1-chloropropane]	Ave	2.168	2.104	0.0100	72.8	75.0	-3.0	20.0
3 & 4 Methylphenol	Ave	1.368	1.307	0.6000	71.7	75.0	-4.5	20.0
N-Nitrosodi-n-propylamine	Ave	1.102	1.056	0.5000	71.9	75.0	-4.2	20.0
Acetophenone	Ave	0.5031	0.4670		69.6	75.0	-7.2	30.0
Hexachloroethane	Ave	0.6426	0.6810	0.3000	79.5	75.0	6.0	20.0
Nitrobenzene	Ave	0.4013	0.4194	0.2000	78.4	75.0	4.5	20.0
Isophorone	Ave	0.7076	0.6916	0.4000	73.3	75.0	-2.3	20.0
2-Nitrophenol	Ave	0.1893	0.1983	0.1000	78.6	75.0	4.7	20.0
2,4-Dimethylphenol	Ave	0.3624	0.3553	0.2000	73.5	75.0	-2.0	20.0
Bis(2-chloroethoxy)methane	Ave	0.4399	0.4149	0.3000	70.8	75.0	-5.7	20.0
2,4-Dichlorophenol	Ave	0.2926	0.2844	0.2000	72.9	75.0	-2.8	20.0
1,2,4-Trichlorobenzene	Ave	0.3340	0.3287	0.1000	73.8	75.0	-1.6	20.0
Naphthalene	Ave	0.9565	0.9038	0.7000	70.9	75.0	-5.5	20.0
4-Chloroaniline	Ave	0.4432	0.4327	0.0100	73.2	75.0	-2.4	20.0
2,6-Dichlorophenol	Ave	0.2841	0.2761	0.0400	72.9	75.0	-2.8	30.0
Hexachlorobutadiene	Ave	0.1979	0.1883	0.0100	71.4	75.0	-4.8	20.0
4-Chloro-3-methylphenol	Ave	0.3322	0.3422	0.2000	77.2	75.0	3.0	20.0
2-Methylnaphthalene	Ave	0.6999	0.5731	0.4000	61.4	75.0	-18.1	20.0
1-Methylnaphthalene	Ave	0.6471	0.5632	0.2000	65.3	75.0	-13.0	30.0
Hexachlorocyclopentadiene	Ave	0.3614	0.4033	0.0500	83.7	75.0	11.6	20.0
1,2,4,5-Tetrachlorobenzene	Ave	0.5726	0.5395	0.0100	70.7	75.0	-5.8	30.0
2,4,6-Trichlorophenol	Ave	0.3642	0.3768	0.2000	77.6	75.0	3.5	20.0
2,4,5-Trichlorophenol	Ave	0.3835	0.3875	0.2000	75.8	75.0	1.0	20.0
Biphenyl	Ave	1.409	1.313	0.0100	69.9	75.0	-6.8	30.0
2-Chloronaphthalene	Ave	1.097	1.055	0.8000	72.1	75.0	-3.8	20.0
2-Nitroaniline	Ave	0.4097	0.4275		78.3	75.0	4.3	20.0
Dimethyl phthalate	Ave	1.258	1.218	0.0100	72.6	75.0	-3.2	20.0
1,3-Dinitrobenzene	Ave	0.2144	0.2135	0.0500	74.7	75.0	-0.4	30.0
2,6-Dinitrotoluene	Ave	0.2988	0.3159	0.2000	79.3	75.0	5.7	20.0
Acenaphthylene	Ave	1.699	1.654	0.9000	73.0	75.0	-2.7	20.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-130823/22 Calibration Date: 10/05/2016 19:58

Instrument ID: SV5 Calib Start Date: 10/05/2016 15:14

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 19:23

Lab File ID: HSL1005.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
3-Nitroaniline	Ave	0.3435	0.3477	0.0100	75.9	75.0	1.2	20.0
2,4-Dinitrophenol	Ave	0.1814	0.1929	0.0500	159	150	6.3	20.0
Acenaphthene	Ave	1.098	1.070	0.9000	73.1	75.0	-2.5	20.0
4-Nitrophenol	Ave	0.1770	0.2056	0.0500	174	150	16.2	20.0
2,4-Dinitrotoluene	Ave	0.4073	0.3964	0.2000	73.0	75.0	-2.7	20.0
Dibenzofuran	Ave	1.558	1.363	0.8000	65.6	75.0	-12.5	20.0
2,3,4,6-Tetrachlorophenol	Ave	0.3040	0.3404	0.0100	84.0	75.0	12.0	30.0
Diethyl phthalate	Ave	1.265	1.314	0.0100	77.9	75.0	3.9	20.0
4-Chlorophenyl phenyl ether	Ave	0.6390	0.6487	0.4000	76.1	75.0	1.5	20.0
4-Nitroaniline	Ave	0.3493	0.3842	0.0100	82.5	75.0	10.0	20.0
Fluorene	Ave	1.283	1.240	0.9000	72.5	75.0	-3.3	20.0
4,6-Dinitro-2-methylphenol	Ave	0.1377	0.1474	0.0100	161	150	7.0	20.0
N-Nitrosodiphenylamine	Ave	0.5652	0.5548	0.0100	73.6	75.0	-1.8	20.0
Azobenzene	Ave	0.8107	0.7585	0.2000	70.2	75.0	-6.4	20.0
4-Bromophenyl phenyl ether	Ave	0.2298	0.2048	0.1000	66.8	75.0	-10.9	20.0
Hexachlorobenzene	Ave	0.2362	0.2154	0.1000	68.4	75.0	-8.8	20.0
Pentachlorophenol	Ave	0.1254	0.1410	0.0500	169	150	12.5	20.0
Phenanthrene	Ave	1.028	1.004	0.7000	73.3	75.0	-2.3	20.0
Anthracene	Ave	1.062	1.015	0.7000	71.7	75.0	-4.4	20.0
Carbazole	Ave	0.9843	0.997	0.0100	76.0	75.0	1.3	20.0
Di-n-butyl phthalate	Ave	1.205	1.164	0.0100	72.4	75.0	-3.4	20.0
Fluoranthene	Ave	1.171	1.100	0.6000	70.5	75.0	-6.1	20.0
Pyrene	Ave	1.161	1.169	0.6000	75.5	75.0	0.7	20.0
Butyl benzyl phthalate	Ave	0.6020	0.6106	0.0100	76.1	75.0	1.4	20.0
Bis(2-ethylhexyl) phthalate	Ave	0.8240	0.8506	0.0100	77.4	75.0	3.2	20.0
Benzo[a]anthracene	Ave	1.167	1.181	0.8000	75.9	75.0	1.2	20.0
Chrysene	Ave	1.114	1.103	0.7000	74.3	75.0	-1.0	20.0
Di-n-octyl phthalate	Ave	1.432	1.527	0.0100	79.9	75.0	6.6	20.0
Benzo[b]fluoranthene	Ave	1.202	1.152	0.7000	71.9	75.0	-4.2	20.0
Benzo[k]fluoranthene	Ave	1.185	1.134	0.7000	71.8	75.0	-4.2	20.0
Benzo[a]pyrene	Ave	1.128	1.087	0.7000	72.3	75.0	-3.6	20.0
Indeno[1,2,3-cd]pyrene	Ave	0.9622	0.9905	0.1000	77.2	75.0	2.9	20.0
Dibenz(a,h)anthracene	Ave	0.996	1.078	0.4000	81.2	75.0	8.3	20.0
Benzo[g,h,i]perylene	Ave	0.9406	0.8896	0.5000	70.9	75.0	-5.4	20.0
2-Fluorophenol (Surr)	Ave	1.391	1.500	0.3000	80.9	75.0	7.8	
Phenol-d5 (Surr)	Ave	1.688	1.773	0.4000	78.8	75.0	5.0	
Nitrobenzene-d5 (Surr)	Ave	0.4422	0.4568	0.0500	77.5	75.0	3.3	
2-Fluorobiphenyl (Surr)	Ave	1.284	1.261	0.2000	73.7	75.0	-1.8	
2,4,6-Tribromophenol (Surr)	Ave	0.1824	0.1772	0.0200	72.9	75.0	-2.8	
Terphenyl-d14 (Surr)	Ave	0.8030	0.8077	0.1000	75.4	75.0	0.6	

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005.D
Lims ID: ICV HSL
Client ID:
Sample Type: ICV
Inject. Date: 05-Oct-2016 19:58:30 ALS Bottle#: 21 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: icv hsl
Operator ID: Instrument ID: SV5
Sublist:

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 05-Oct-2016 20:51:27 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK047

First Level Reviewer: onishim Date: 05-Oct-2016 20:43:11

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.585	5.585	0.000	99	227038	40.0	40.0	
* 2 Naphthalene-d8	136	6.537	6.532	0.005	100	892164	40.0	40.0	
* 3 Acenaphthene-d10	164	7.907	7.907	0.000	100	485385	40.0	40.0	
* 4 Phenanthrene-d10	188	9.238	9.238	0.000	100	819205	40.0	40.0	
* 5 Chrysene-d12	240	12.405	12.399	0.006	99	794126	40.0	40.0	
* 6 Perylene-d12	264	15.892	15.887	0.005	100	839605	40.0	40.0	
$ 7 2-Fluorophenol	112	4.425	4.425	0.000	98	638630	75.0	80.9	
$ 8 Phenol-d5	99	5.275	5.275	0.000	99	754720	75.0	78.8	
$ 9 1,2-Dichlorobenzene-d4	152	5.714	5.708	0.006	99	391297	NC	NC	
$ 10 Nitrobenzene-d5	82	6.002	6.002	0.000	98	764083	75.0	77.5	
$ 11 2-Fluorobiphenyl (Surr)	172	7.334	7.329	0.005	99	1147587	75.0	73.7	
$ 12 2,4,6-Tribromophenol	330	8.591	8.591	0.000	96	161256	75.0	72.9	
$ 13 Terphenyl-d14	244	10.806	10.800	0.006	100	1202653	75.0	75.4	
14 1,4-Dioxane	88	2.456	2.456	0.000	97	198611	NC	NC	
15 N-Nitrosodimethylamine	74	2.777	2.777	0.000	94	378056	75.0	63.1	
16 Pyridine	79	2.841	2.847	-0.006	99	749115	75.0	71.4	
26 Phenol	94	5.286	5.286	0.000	99	739046	75.0	77.3	
27 Aniline	93	5.312	5.313	0.000	100	907338	75.0	75.1	
28 Bis(2-chloroethyl)ether	93	5.355	5.350	0.005	99	563814	75.0	72.6	
30 2-Chlorophenol	128	5.419	5.419	0.000	97	591925	75.0	75.3	
31 1,3-Dichlorobenzene	146	5.542	5.543	0.000	99	635724	75.0	72.8	
32 1,4-Dichlorobenzene	146	5.601	5.601	0.000	97	642423	75.0	75.0	
33 Benzyl alcohol	108	5.682	5.682	0.000	99	392898	75.0	74.2	
34 1,2-Dichlorobenzene	146	5.724	5.724	0.000	98	597879	75.0	71.7	
35 2-Methylphenol	108	5.767	5.767	0.000	99	543899	75.0	76.3	
36 2,2'-oxybis[1-chloropropan	45	5.783	5.783	0.000	99	895466	75.0	72.8	
39 3 & 4 Methylphenol	108	5.879	5.879	0.000	93	556187	75.0	71.7	
40 N-Nitrosodi-n-propylamine	70	5.879	5.879	0.000	93	449568	75.0	71.9	
42 Acetophenone	105	5.885	5.885	0.000	92	781212	75.0	69.6	
45 Hexachloroethane	117	5.986	5.986	0.000	93	289907	75.0	79.5	
46 Nitrobenzene	77	6.018	6.013	0.005	99	701580	75.0	78.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.190	6.184	0.006	99	1156866	75.0	73.3	
49 2-Nitrophenol	139	6.248	6.249	-0.001	94	331764	75.0	78.6	
50 2,4-Dimethylphenol	107	6.265	6.265	0.000	98	594355	75.0	73.5	
52 Bis(2-chloroethoxy)methane	93	6.323	6.323	0.000	99	694118	75.0	70.8	
55 2,4-Dichlorophenol	162	6.425	6.425	0.000	98	475812	75.0	72.9	
57 1,2,4-Trichlorobenzene	180	6.489	6.489	0.000	97	549760	75.0	73.8	
58 Naphthalene	128	6.553	6.548	0.005	100	1511870	75.0	70.9	
59 4-Chloroaniline	127	6.575	6.575	0.000	99	723737	75.0	73.2	
60 2,6-Dichlorophenol	162	6.585	6.585	0.000	97	461916	75.0	72.9	
62 Hexachlorobutadiene	225	6.639	6.639	0.000	97	315063	75.0	71.4	
67 4-Chloro-3-methylphenol	107	6.912	6.912	0.000	99	572409	75.0	77.2	
69 2-Methylnaphthalene	142	7.061	7.062	-0.001	99	958601	75.0	61.4	
70 1-Methylnaphthalene	142	7.142	7.142	0.000	99	942101	75.0	65.3	
71 Hexachlorocyclopentadiene	237	7.190	7.190	0.000	92	367077	75.0	83.7	
72 1,2,4,5-Tetrachlorobenzene	216	7.195	7.195	0.000	95	491014	75.0	70.7	
74 2,4,6-Trichlorophenol	196	7.270	7.270	0.000	97	342945	75.0	77.6	
75 2,4,5-Trichlorophenol	196	7.302	7.302	0.000	98	352624	75.0	75.8	
77 1,1'-Biphenyl	154	7.414	7.415	-0.001	98	1194933	75.0	69.9	
78 2-Chloronaphthalene	162	7.447	7.447	0.000	99	959940	75.0	72.1	
80 2-Nitroaniline	65	7.505	7.505	0.000	97	389030	75.0	78.3	
84 Dimethyl phthalate	163	7.634	7.634	0.000	98	1108471	75.0	72.6	
85 1,3-Dinitrobenzene	168	7.666	7.666	0.000	97	194334	75.0	74.7	
86 2,6-Dinitrotoluene	165	7.687	7.687	0.000	95	287508	75.0	79.3	
87 Acenaphthylene	152	7.789	7.789	0.000	100	1505361	75.0	73.0	
88 3-Nitroaniline	138	7.842	7.837	0.005	98	316444	75.0	75.9	
89 2,4-Dinitrophenol	184	7.928	7.923	0.005	84	351059	150.0	159.5	
90 Acenaphthene	153	7.933	7.933	0.000	99	973985	75.0	73.1	
91 4-Nitrophenol	109	7.960	7.960	0.000	98	374302	150.0	174.3	
92 2,4-Dinitrotoluene	165	8.035	8.030	0.005	97	360726	75.0	73.0	
94 Dibenzofuran	168	8.078	8.078	0.000	99	1240499	75.0	65.6	
97 2,3,4,6-Tetrachlorophenol	232	8.179	8.174	0.005	98	309812	75.0	84.0	
99 Diethyl phthalate	149	8.222	8.222	0.000	95	1196206	75.0	77.9	
101 4-Chlorophenyl phenyl ethe	204	8.350	8.351	-0.001	98	590411	75.0	76.1	
103 4-Nitroaniline	138	8.372	8.372	0.000	90	349697	75.0	82.5	
104 Fluorene	166	8.377	8.377	0.000	99	1128882	75.0	72.5	
105 4,6-Dinitro-2-methylphenol	198	8.399	8.399	0.000	97	452871	150.0	160.5	
107 Diphenylamine	169	8.452	8.452	0.000	99	852193	NC	NC	
106 N-Nitrosodiphenylamine	169	8.452	8.452	0.000	99	852193	75.0	73.6	
108 Azobenzene	77	8.495	8.495	0.000	99	1164989	75.0	70.2	
115 4-Bromophenyl phenyl ether	248	8.794	8.794	0.000	98	314583	75.0	66.8	
117 Hexachlorobenzene	284	8.891	8.891	0.000	99	330839	75.0	68.4	
120 Pentachlorophenol	266	9.057	9.057	-0.001	88	433243	150.0	168.7	
125 Phenanthrene	178	9.260	9.260	0.000	99	1542113	75.0	73.3	
126 Anthracene	178	9.308	9.308	0.000	99	1558885	75.0	71.7	
127 Carbazole	167	9.442	9.442	0.000	99	1531733	75.0	76.0	
129 Di-n-butyl phthalate	149	9.730	9.730	0.000	100	1787732	75.0	72.4	
134 Fluoranthene	202	10.415	10.415	0.000	99	1689656	75.0	70.5	
136 Pyrene	202	10.666	10.666	0.000	99	1740597	75.0	75.5	
142 Butyl benzyl phthalate	149	11.415	11.410	0.005	100	909134	75.0	76.1	
150 Benzo[a]anthracene	228	12.383	12.378	0.005	87	1758736	75.0	75.9	
149 Bis(2-ethylhexyl) phthalat	149	12.378	12.378	0.000	87	1266526	75.0	77.4	
151 Chrysene	228	12.453	12.448	0.005	99	1642146	75.0	74.3	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.833	13.822	0.011	100	2273284	75.0	79.9	
155 Benzo[b]fluoranthene	252	14.828	14.822	0.006	99	1813257	75.0	71.9	
156 Benzo[k]fluoranthene	252	14.903	14.897	0.006	100	1785661	75.0	71.8	
157 Benzo[a]pyrene	252	15.732	15.726	0.006	100	1711031	75.0	72.3	
161 Indeno[1,2,3-cd]pyrene	276	18.775	18.775	0.000	99	1559281	75.0	77.2	
162 Dibenz(a,h)anthracene	278	18.839	18.834	0.005	98	1696833	75.0	81.2	
163 Benzo[g,h,i]perylene	276	19.369	19.363	0.006	99	1400520	75.0	70.9	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLICV_00007 Amount Added: 1.00 Units: mL

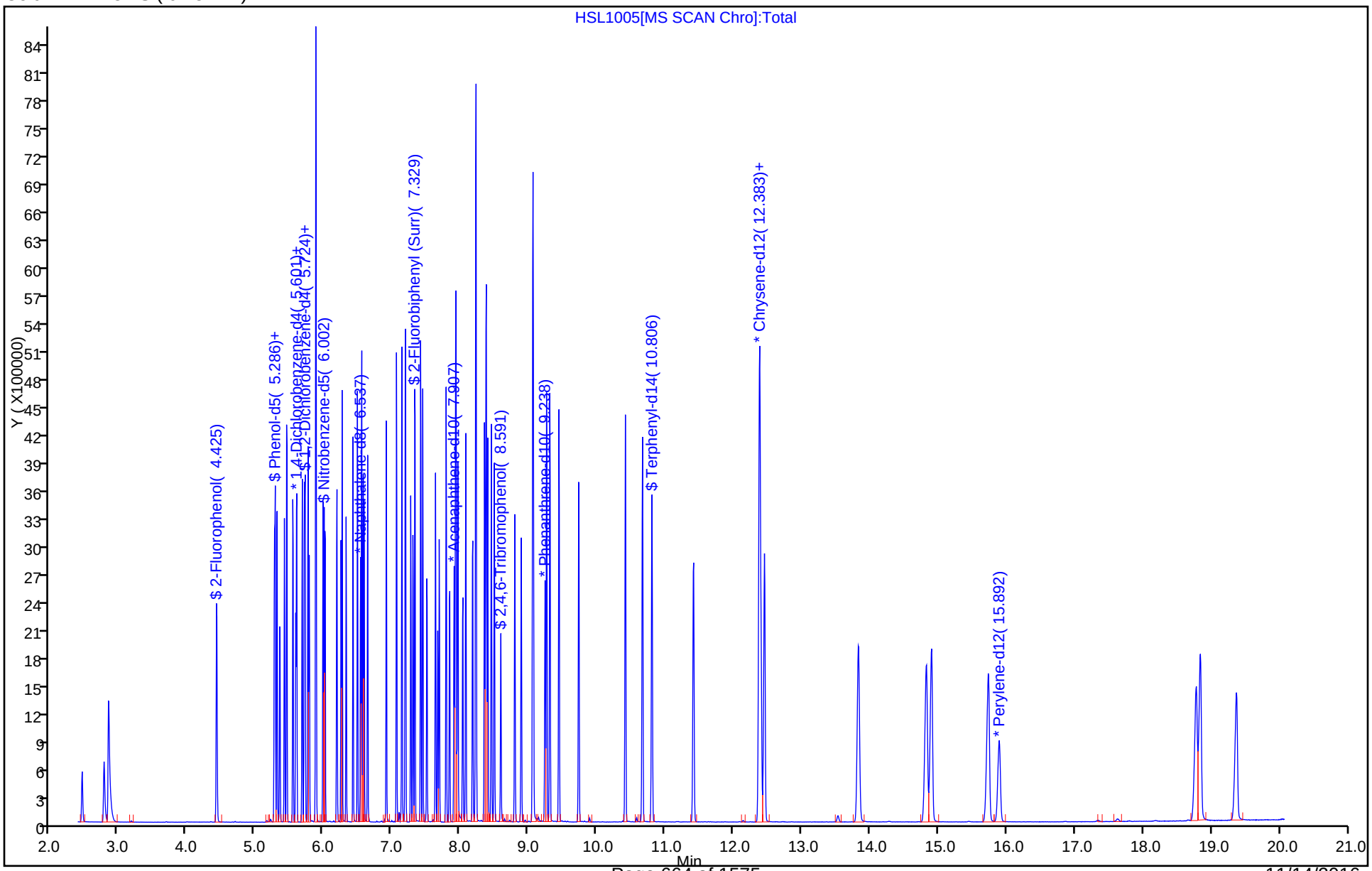
Report Date: 05-Oct-2016 20:53:00 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005.D

Injection Date:	05-Oct-2016 19:58:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	ICV HSL			Worklist Smp#:	22
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	21
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-134817/2 Calibration Date: 10/27/2016 10:14

Instrument ID: SV5 Calib Start Date: 10/05/2016 15:14

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 19:23

Lab File ID: HSL1027.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
N-Nitrosodimethylamine	Ave	1.056	0.8913	0.1000	63.3	75.0	-15.6	20.0
Pyridine	Ave	1.848	1.516		61.5	75.0	-18.0	20.0
Phenol	Ave	1.683	1.586	0.8000	70.7	75.0	-5.8	20.0
Aniline	Ave	2.127	1.924	0.9000	67.8	75.0	-9.6	30.0
Bis(2-chloroethyl)ether	Ave	1.369	1.240	0.7000	67.9	75.0	-9.5	20.0
2-Chlorophenol	Ave	1.384	1.301	0.8000	70.5	75.0	-6.0	20.0
1,3-Dichlorobenzene	Ave	1.538	1.458	0.9000	71.1	75.0	-5.2	20.0
1,4-Dichlorobenzene	Ave	1.509	1.471	0.9000	73.1	75.0	-2.5	20.0
Benzyl alcohol	Ave	0.9323	0.8956	0.1000	72.0	75.0	-3.9	20.0
1,2-Dichlorobenzene	Ave	1.469	1.377	0.9000	70.3	75.0	-6.3	20.0
2-Methylphenol	Ave	1.256	1.206	0.7000	72.0	75.0	-3.9	20.0
2,2'-oxybis[1-chloropropane]	Ave	2.168	2.364	0.0100	81.8	75.0	9.0	20.0
3 & 4 Methylphenol	Ave	1.368	1.286	0.6000	70.5	75.0	-6.0	20.0
N-Nitrosodi-n-propylamine	Ave	1.102	1.037	0.5000	70.5	75.0	-5.9	20.0
Acetophenone	Ave	0.5031	0.4930		73.5	75.0	-2.0	30.0
Hexachloroethane	Ave	0.6426	0.6272	0.3000	73.2	75.0	-2.4	20.0
Nitrobenzene	Ave	0.4013	0.3996	0.2000	74.7	75.0	-0.4	20.0
Isophorone	Ave	0.7076	0.6970	0.4000	73.9	75.0	-1.5	20.0
2-Nitrophenol	Ave	0.1893	0.1958	0.1000	77.5	75.0	3.4	20.0
2,4-Dimethylphenol	Ave	0.3624	0.3664	0.2000	75.8	75.0	1.1	20.0
Bis(2-chloroethoxy)methane	Ave	0.4399	0.4060	0.3000	69.2	75.0	-7.7	20.0
2,4-Dichlorophenol	Ave	0.2926	0.3007	0.2000	77.1	75.0	2.8	20.0
1,2,4-Trichlorobenzene	Ave	0.3340	0.3337	0.1000	75.0	75.0	-0.0	20.0
Naphthalene	Ave	0.9565	0.8818	0.7000	69.1	75.0	-7.8	20.0
4-Chloroaniline	Ave	0.4432	0.4304	0.0100	72.8	75.0	-2.9	20.0
2,6-Dichlorophenol	Ave	0.2841	0.2916	0.0400	77.0	75.0	2.6	30.0
Hexachlorobutadiene	Ave	0.1979	0.2039	0.0100	77.3	75.0	3.0	20.0
4-Chloro-3-methylphenol	Ave	0.3322	0.3339	0.2000	75.4	75.0	0.5	20.0
2-Methylnaphthalene	Ave	0.6999	0.6442	0.4000	69.0	75.0	-8.0	20.0
1-Methylnaphthalene	Ave	0.6471	0.6051	0.2000	70.1	75.0	-6.5	30.0
Hexachlorocyclopentadiene	Ave	0.3614	0.3680	0.0500	76.4	75.0	1.8	20.0
1,2,4,5-Tetrachlorobenzene	Ave	0.5726	0.5658	0.0100	74.1	75.0	-1.2	30.0
2,4,6-Trichlorophenol	Ave	0.3642	0.3909	0.2000	80.5	75.0	7.4	20.0
2,4,5-Trichlorophenol	Ave	0.3835	0.3891	0.2000	76.1	75.0	1.4	20.0
Biphenyl	Ave	1.409	1.295	0.0100	68.9	75.0	-8.1	30.0
2-Chloronaphthalene	Ave	1.097	1.053	0.8000	72.0	75.0	-3.9	20.0
2-Nitroaniline	Ave	0.4097	0.4283		78.4	75.0	4.5	20.0
Dimethyl phthalate	Ave	1.258	1.239	0.0100	73.9	75.0	-1.5	20.0
1,3-Dinitrobenzene	Ave	0.2144	0.2217	0.0500	77.6	75.0	3.4	30.0
2,6-Dinitrotoluene	Ave	0.2988	0.3068	0.2000	77.0	75.0	2.7	20.0
Acenaphthylene	Ave	1.699	1.577	0.9000	69.6	75.0	-7.2	20.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-134817/2 Calibration Date: 10/27/2016 10:14

Instrument ID: SV5 Calib Start Date: 10/05/2016 15:14

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 19:23

Lab File ID: HSL1027.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
3-Nitroaniline	Ave	0.3435	0.3396	0.0100	74.1	75.0	-1.2	20.0
2,4-Dinitrophenol	Ave	0.1814	0.1973	0.0500	163	150	8.8	20.0
Acenaphthene	Ave	1.098	1.030	0.9000	70.3	75.0	-6.2	20.0
4-Nitrophenol	Ave	0.1770	0.2099	0.0500	178	150	18.6	20.0
2,4-Dinitrotoluene	Ave	0.4073	0.4203	0.2000	77.4	75.0	3.2	20.0
Dibenzofuran	Ave	1.558	1.436	0.8000	69.1	75.0	-7.8	20.0
2,3,4,6-Tetrachlorophenol	Ave	0.3040	0.3178	0.0100	78.4	75.0	4.5	30.0
Diethyl phthalate	Ave	1.265	1.238	0.0100	73.4	75.0	-2.2	20.0
4-Chlorophenyl phenyl ether	Ave	0.6390	0.6270	0.4000	73.6	75.0	-1.9	20.0
4-Nitroaniline	Ave	0.3493	0.3628	0.0100	77.9	75.0	3.9	20.0
Fluorene	Ave	1.283	1.177	0.9000	68.8	75.0	-8.3	20.0
4,6-Dinitro-2-methylphenol	Ave	0.1377	0.1503	0.0100	164	150	9.1	20.0
N-Nitrosodiphenylamine	Ave	0.5652	0.5297	0.0100	70.3	75.0	-6.3	20.0
Azobenzene	Ave	0.8107	0.7424	0.2000	68.7	75.0	-8.4	20.0
4-Bromophenyl phenyl ether	Ave	0.2298	0.2196	0.1000	71.7	75.0	-4.4	20.0
Hexachlorobenzene	Ave	0.2362	0.2219	0.1000	70.5	75.0	-6.0	20.0
Pentachlorophenol	Ave	0.1254	0.1302	0.0500	156	150	3.8	20.0
Phenanthrene	Ave	1.028	0.9759	0.7000	71.2	75.0	-5.0	20.0
Anthracene	Ave	1.062	1.017	0.7000	71.8	75.0	-4.2	20.0
Carbazole	Ave	0.9843	0.9478	0.0100	72.2	75.0	-3.7	20.0
Di-n-butyl phthalate	Ave	1.205	1.183	0.0100	73.6	75.0	-1.8	20.0
Fluoranthene	Ave	1.171	1.150	0.6000	73.6	75.0	-1.8	20.0
Pyrene	Ave	1.161	1.164	0.6000	75.2	75.0	0.3	20.0
Butyl benzyl phthalate	Ave	0.6020	0.5952	0.0100	74.2	75.0	-1.1	20.0
Bis(2-ethylhexyl) phthalate	Ave	0.8240	0.8462	0.0100	77.0	75.0	2.7	20.0
Benzo[a]anthracene	Ave	1.167	1.149	0.8000	73.8	75.0	-1.6	20.0
Chrysene	Ave	1.114	1.070	0.7000	72.1	75.0	-3.9	20.0
Di-n-octyl phthalate	Ave	1.432	1.462	0.0100	76.6	75.0	2.1	20.0
Benzo[b]fluoranthene	Ave	1.202	1.145	0.7000	71.5	75.0	-4.7	20.0
Benzo[k]fluoranthene	Ave	1.185	1.136	0.7000	71.9	75.0	-4.1	20.0
Benzo[a]pyrene	Ave	1.128	1.135	0.7000	75.5	75.0	0.7	20.0
Indeno[1,2,3-cd]pyrene	Ave	0.9622	0.9458	0.1000	73.7	75.0	-1.7	20.0
Dibenz(a,h)anthracene	Ave	0.996	0.9625	0.4000	72.5	75.0	-3.3	20.0
Benzo[g,h,i]perylene	Ave	0.9406	0.8789	0.5000	70.1	75.0	-6.6	20.0
2-Fluorophenol (Surr)	Ave	1.391	1.345	0.3000	72.5	75.0	-3.4	20.0
Phenol-d5 (Surr)	Ave	1.688	1.615	0.4000	71.8	75.0	-4.3	20.0
Nitrobenzene-d5 (Surr)	Ave	0.4422	0.4241	0.0500	71.9	75.0	-4.1	20.0
2-Fluorobiphenyl (Surr)	Ave	1.284	1.263	0.2000	73.8	75.0	-1.6	20.0
2,4,6-Tribromophenol (Surr)	Ave	0.1824	0.1947	0.0200	80.0	75.0	6.7	20.0
Terphenyl-d14 (Surr)	Ave	0.8030	0.7874	0.1000	73.5	75.0	-1.9	20.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\HSL1027.D
Lims ID: CCV HSL
Client ID:
Sample Type: CCV
Inject. Date: 27-Oct-2016 10:14:30 ALS Bottle#: 97 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV HSL
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 27-Oct-2016 14:01:27 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: onishim Date: 27-Oct-2016 11:06:15

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	99	254749	40.0	40.0	
* 2 Naphthalene-d8	136	6.612	6.612	0.000	100	965204	40.0	40.0	
* 3 Acenaphthene-d10	164	7.992	7.992	0.000	100	580346	40.0	40.0	
* 4 Phenanthrene-d10	188	9.329	9.329	0.000	100	1021368	40.0	40.0	
* 5 Chrysene-d12	240	12.565	12.565	0.000	100	1048561	40.0	40.0	
* 6 Perylene-d12	264	16.170	16.170	0.000	100	1085073	40.0	40.0	
$ 7 2-Fluorophenol	112	4.510	4.510	0.000	0	642215	75.0	72.5	
$ 8 Phenol-d5	99	5.355	5.355	0.000	0	771533	75.0	71.8	
$ 9 1,2-Dichlorobenzene-d4	152	5.789	5.789	0.000	0	432523	NC	NC	
$ 10 Nitrobenzene-d5	82	6.077	6.077	0.000	0	767544	75.0	71.9	
$ 11 2-Fluorobiphenyl (Surr)	172	7.409	7.409	0.000	0	1374570	75.0	73.8	
$ 12 2,4,6-Tribromophenol	330	8.682	8.682	0.000	0	211803	75.0	80.0	
$ 13 Terphenyl-d14	244	10.907	10.907	0.000	0	1548123	75.0	73.5	
14 1,4-Dioxane	88	2.451	2.451	0.000	0	274323	NC	NC	
15 N-Nitrosodimethylamine	74	2.809	2.809	0.000	0	425708	75.0	63.3	
16 Pyridine	79	2.874	2.874	0.000	0	723921	75.0	61.5	
26 Phenol	94	5.366	5.366	0.000	0	757601	75.0	70.7	
27 Aniline	93	5.393	5.393	0.000	0	918974	75.0	67.8	
28 Bis(2-chloroethyl)ether	93	5.430	5.430	0.000	0	592088	75.0	67.9	
30 2-Chlorophenol	128	5.500	5.500	0.000	0	621542	75.0	70.5	
31 1,3-Dichlorobenzene	146	5.623	5.623	0.000	0	696449	75.0	71.1	
32 1,4-Dichlorobenzene	146	5.676	5.676	0.000	0	702830	75.0	73.1	
33 Benzyl alcohol	108	5.756	5.756	0.000	0	427804	75.0	72.0	
34 1,2-Dichlorobenzene	146	5.799	5.799	0.000	0	657613	75.0	70.3	
35 2-Methylphenol	108	5.842	5.842	0.000	0	576099	75.0	72.0	
36 2,2'-oxybis[1-chloropropan	45	5.858	5.858	0.000	0	1129031	75.0	81.8	
39 3 & 4 Methylphenol	108	5.954	5.954	0.000	0	614338	75.0	70.5	
40 N-Nitrosodi-n-propylamine	70	5.954	5.954	0.000	0	495240	75.0	70.5	
42 Acetophenone	105	5.960	5.960	0.000	0	892193	75.0	73.5	
45 Hexachloroethane	117	6.061	6.061	0.000	0	299561	75.0	73.2	
46 Nitrobenzene	77	6.093	6.093	0.000	0	723120	75.0	74.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.265	6.265	0.000	0	1261302	75.0	73.9	
49 2-Nitrophenol	139	6.323	6.323	0.000	0	354301	75.0	77.5	
50 2,4-Dimethylphenol	107	6.339	6.339	0.000	0	663131	75.0	75.8	
52 Bis(2-chloroethoxy)methane	93	6.398	6.398	0.000	0	734792	75.0	69.2	
55 2,4-Dichlorophenol	162	6.505	6.505	0.000	0	544197	75.0	77.1	
57 1,2,4-Trichlorobenzene	180	6.569	6.569	0.000	0	603980	75.0	75.0	
58 Naphthalene	128	6.628	6.628	0.000	0	1595843	75.0	69.1	
59 4-Chloroaniline	127	6.650	6.650	0.000	0	778840	75.0	72.8	
60 2,6-Dichlorophenol	162	6.666	6.666	0.000	0	527640	75.0	77.0	
62 Hexachlorobutadiene	225	6.714	6.714	0.000	0	368975	75.0	77.3	
67 4-Chloro-3-methylphenol	107	6.992	6.992	0.000	0	604350	75.0	75.4	
69 2-Methylnaphthalene	142	7.142	7.142	0.000	0	1165747	75.0	69.0	
70 1-Methylnaphthalene	142	7.222	7.222	0.000	0	1095144	75.0	70.1	
71 Hexachlorocyclopentadiene	237	7.270	7.270	0.000	0	400487	75.0	76.4	
72 1,2,4,5-Tetrachlorobenzene	216	7.275	7.275	0.000	0	615703	75.0	74.1	
74 2,4,6-Trichlorophenol	196	7.356	7.356	0.000	0	425392	75.0	80.5	
75 2,4,5-Trichlorophenol	196	7.388	7.388	0.000	0	423347	75.0	76.1	
77 1,1'-Biphenyl	154	7.500	7.500	0.000	0	1409014	75.0	68.9	
78 2-Chloronaphthalene	162	7.532	7.532	0.000	0	1146337	75.0	72.0	
80 2-Nitroaniline	65	7.591	7.591	0.000	0	466012	75.0	78.4	
84 Dimethyl phthalate	163	7.714	7.714	0.000	0	1348241	75.0	73.9	
85 1,3-Dinitrobenzene	168	7.751	7.751	0.000	0	241248	75.0	77.6	
86 2,6-Dinitrotoluene	165	7.773	7.773	0.000	0	333845	75.0	77.0	
87 Acenaphthylene	152	7.874	7.874	0.000	0	1715794	75.0	69.6	
88 3-Nitroaniline	138	7.923	7.923	0.000	0	369482	75.0	74.1	
89 2,4-Dinitrophenol	184	8.014	8.014	0.000	0	429365	150.0	163.1	
90 Acenaphthene	153	8.019	8.019	0.000	0	1120439	75.0	70.3	
91 4-Nitrophenol	109	8.051	8.051	0.000	0	456799	150.0	177.9	
92 2,4-Dinitrotoluene	165	8.121	8.121	0.000	0	457339	75.0	77.4	
94 Dibenzofuran	168	8.163	8.163	0.000	0	1562802	75.0	69.1	
97 2,3,4,6-Tetrachlorophenol	232	8.265	8.265	0.000	0	345805	75.0	78.4	
99 Diethyl phthalate	149	8.302	8.302	0.000	0	1347011	75.0	73.4	
101 4-Chlorophenyl phenyl ethe	204	8.436	8.436	0.000	0	682228	75.0	73.6	
103 4-Nitroaniline	138	8.463	8.463	0.000	0	394781	75.0	77.9	
104 Fluorene	166	8.468	8.468	0.000	0	1280899	75.0	68.8	
105 4,6-Dinitro-2-methylphenol	198	8.490	8.490	0.000	0	575797	150.0	163.7	
106 N-Nitrosodiphenylamine	169	8.538	8.538	0.000	0	1014452	75.0	70.3	
107 Diphenylamine	169	8.538	8.538	0.000	0	1014452	NC	NC	
108 Azobenzene	77	8.581	8.581	0.000	0	1421806	75.0	68.7	
115 4-Bromophenyl phenyl ether	248	8.880	8.880	0.000	0	420554	75.0	71.7	
117 Hexachlorobenzene	284	8.982	8.982	0.000	0	425021	75.0	70.5	
120 Pentachlorophenol	266	9.147	9.147	0.000	0	498487	150.0	155.7	
125 Phenanthrene	178	9.356	9.356	0.000	0	1868828	75.0	71.2	
126 Anthracene	178	9.404	9.404	0.000	0	1947896	75.0	71.8	
127 Carbazole	167	9.533	9.533	0.000	0	1815053	75.0	72.2	
129 Di-n-butyl phthalate	149	9.811	9.811	0.000	0	2265955	75.0	73.6	
134 Fluoranthene	202	10.517	10.517	0.000	0	2201453	75.0	73.6	
136 Pyrene	202	10.773	10.773	0.000	0	2288636	75.0	75.2	
142 Butyl benzyl phthalate	149	11.528	11.528	0.000	0	1170252	75.0	74.2	
149 Bis(2-ethylhexyl) phthalat	149	12.512	12.512	0.000	0	1663709	75.0	77.0	
150 Benzo[a]anthracene	228	12.544	12.544	0.000	0	2258259	75.0	73.8	
151 Chrysene	228	12.619	12.619	0.000	0	2104624	75.0	72.1	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	14.004	14.004	0.000	0	2874394	75.0	76.6	
155 Benzo[b]fluoranthene	252	15.074	15.074	0.000	0	2329513	75.0	71.5	
156 Benzo[k]fluoranthene	252	15.149	15.149	0.000	0	2310930	75.0	71.9	
157 Benzo[a]pyrene	252	16.010	16.010	0.000	0	2310118	75.0	75.5	
161 Indeno[1,2,3-cd]pyrene	276	19.026	19.026	0.000	0	1924195	75.0	73.7	
162 Dibenz(a,h)anthracene	278	19.085	19.085	0.000	0	1958172	75.0	72.5	
163 Benzo[g,h,i]perylene	276	19.631	19.631	0.000	0	1788107	75.0	70.1	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL7_00022 Amount Added: 1.00 Units: mL

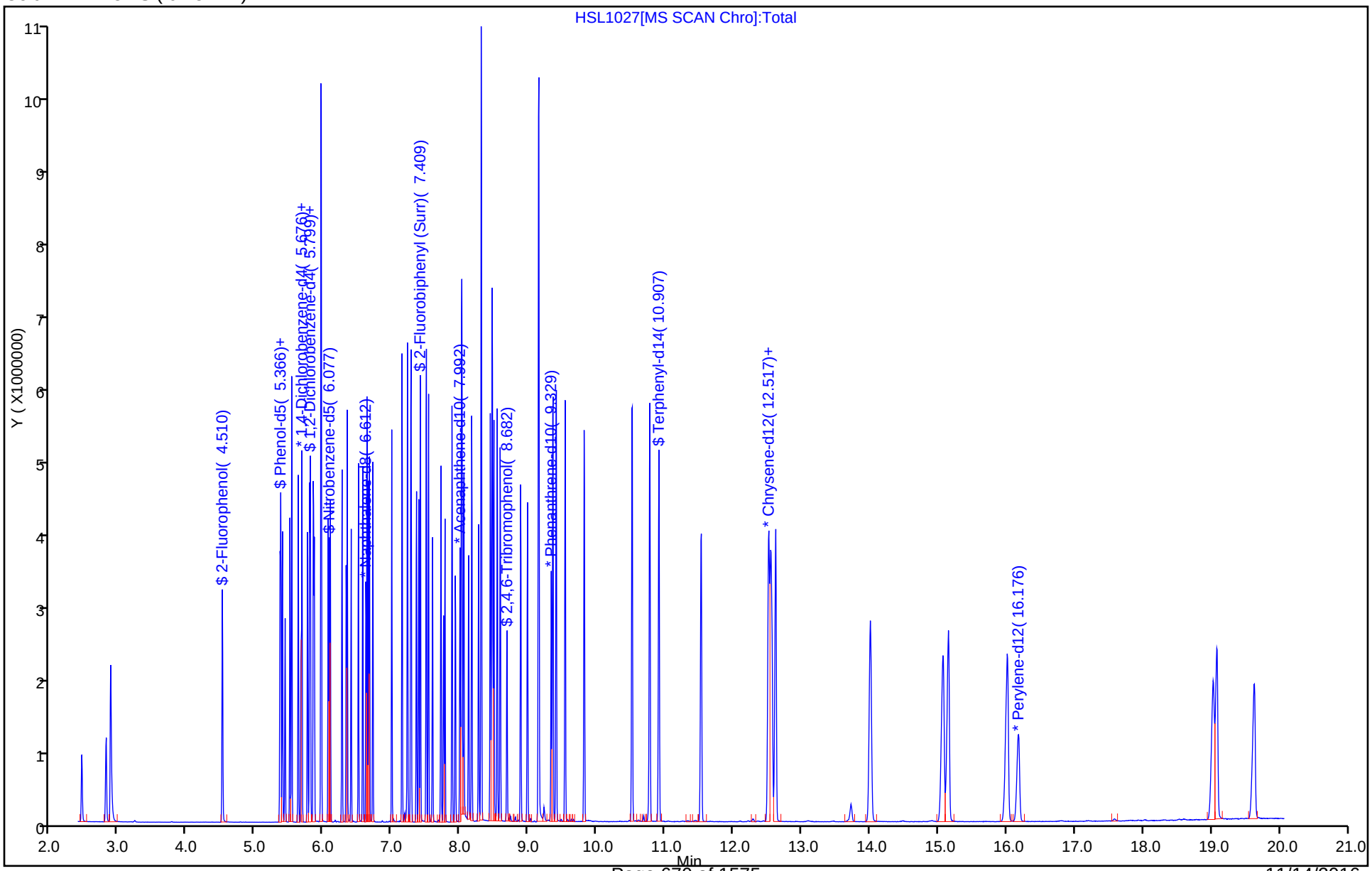
Report Date: 27-Oct-2016 14:01:28 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\HSL1027.D

Injection Date:	27-Oct-2016 10:14:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	CCV HSL			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	97
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-134817/3 Calibration Date: 10/27/2016 10:42

Instrument ID: SV5 Calib Start Date: 10/05/2016 10:35

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 14:16

Lab File ID: ODD1027.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Benzaldehyde	Ave	1.081	0.9434		65.5	75.0	-12.7	30.0
Benzoic acid	Qua2		0.2004	0.0100	148	150	-1.0	20.0
Benzidine	Ave	0.8668	0.7462		64.6	75.0	-13.9	30.0
3,3'-Dichlorobenzidine	Ave	0.4426	0.4487	0.0100	76.0	75.0	1.4	20.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\ODD1027.D
Lims ID: CCV ODD
Client ID:
Sample Type: CCV
Inject. Date: 27-Oct-2016 10:42:30 ALS Bottle#: 98 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV ODD
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 27-Oct-2016 14:01:30 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: onishim Date: 27-Oct-2016 11:52:51

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.660	5.660	0.000	100	255072	40.0	40.0	
* 2 Naphthalene-d8	136	6.612	6.612	0.000	100	929308	40.0	40.0	
* 3 Acenaphthene-d10	164	7.987	7.987	0.000	100	560313	40.0	40.0	
* 4 Phenanthrene-d10	188	9.324	9.324	0.000	100	976327	40.0	40.0	
* 5 Chrysene-d12	240	12.555	12.555	0.000	100	1003164	40.0	40.0	
* 6 Perylene-d12	264	16.160	16.160	0.000	100	991316	40.0	40.0	
21 1,4-Oxathiane	46	4.671	4.671	0.000	0	735368	NC	NC	
25 Benzaldehyde	106	5.297	5.297	0.000	0	451198	75.0	65.5	
37 Indene	115	5.869	5.869	0.000	0	1952659	NC	NC	
44 1,4-Dithiane	120	6.013	6.013	0.000	0	474960	NC	NC	
53 Benzoic acid	105	6.436	6.436	0.000	0	698494	150.0	148.5	
56 Thiodiglycol	61	6.511	6.511	0.000	0	458455	NC	NC	
66 Caprolactam	113	6.917	6.917	0.000	0	187429	NC	NC	
118 Atrazine	200	8.992	8.992	0.000	0	399244	NC	NC	
135 Benzidine	184	10.613	10.613	0.000	0	1403620	75.0	64.6	
147 3,3'-Dichlorobenzidine	252	12.453	12.453	0.000	0	843929	75.0	76.0	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

MSODDL6_00008 Amount Added: 1.00 Units: mL

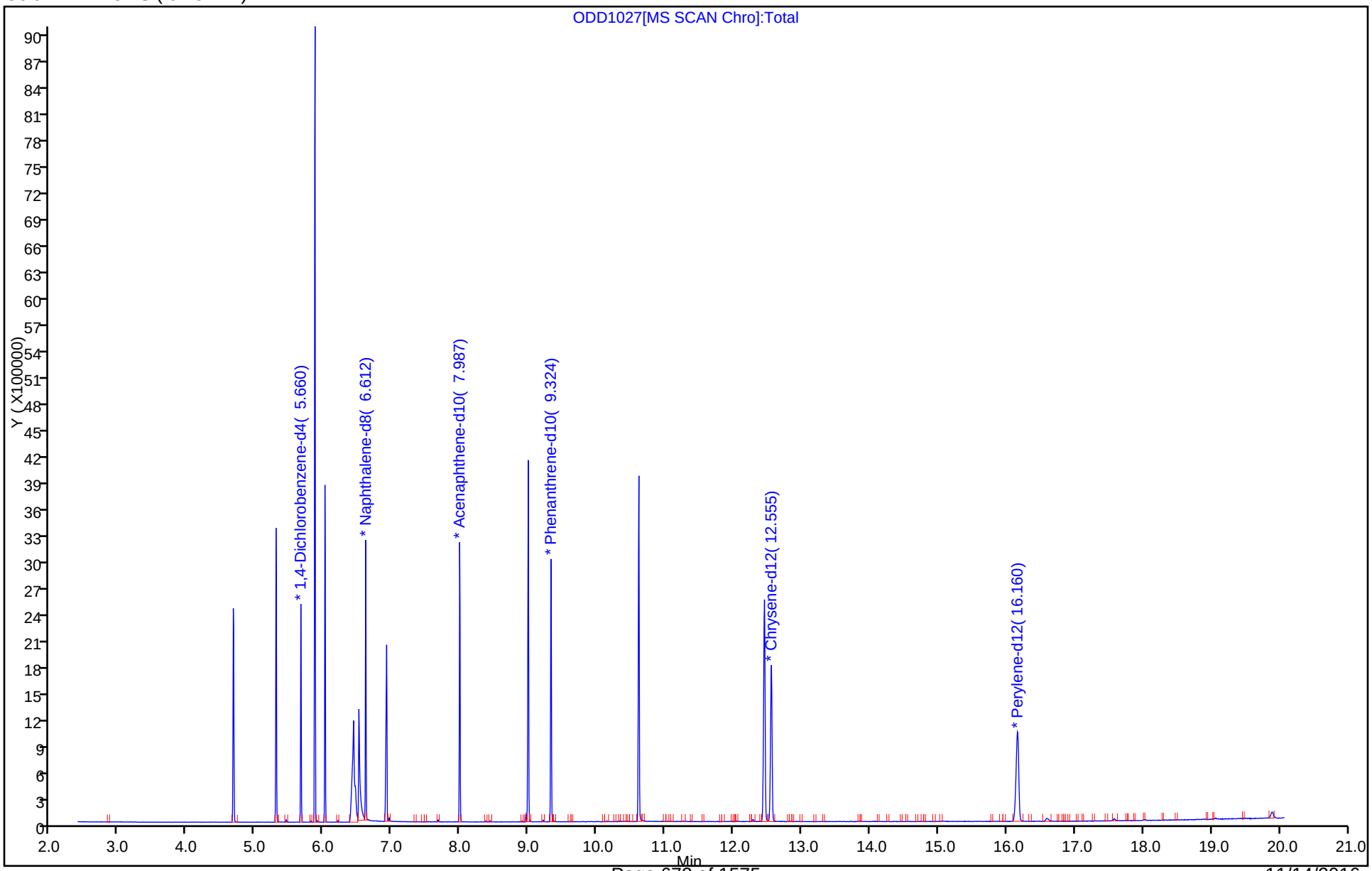
Report Date: 27-Oct-2016 14:01:31 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\ODD1027.D

Injection Date:	27-Oct-2016 10:42:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	CCV ODD			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	98
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVC 320-134817/17 Calibration Date: 10/27/2016 17:42

Instrument ID: SV5 Calib Start Date: 10/05/2016 15:14

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 19:23

Lab File ID: HSL1005L.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
N-Nitrosodimethylamine	Ave	1.056	0.8633		61.3	75.0	-18.3	50.0
Pyridine	Ave	1.848	1.461		59.3	75.0	-21.0	50.0
Phenol	Ave	1.683	1.591		70.9	75.0	-5.5	50.0
Aniline	Ave	2.127	1.960		69.1	75.0	-7.9	50.0
Bis(2-chloroethyl)ether	Ave	1.369	1.223		67.0	75.0	-10.7	50.0
2-Chlorophenol	Ave	1.384	1.284		69.6	75.0	-7.2	50.0
1,3-Dichlorobenzene	Ave	1.538	1.462		71.3	75.0	-4.9	50.0
1,4-Dichlorobenzene	Ave	1.509	1.450		72.1	75.0	-3.9	50.0
Benzyl alcohol	Ave	0.9323	0.8783		70.7	75.0	-5.8	50.0
1,2-Dichlorobenzene	Ave	1.469	1.366		69.8	75.0	-7.0	50.0
2-Methylphenol	Ave	1.256	1.210		72.3	75.0	-3.6	50.0
2,2'-oxybis[1-chloropropane]	Ave	2.168	2.374		82.1	75.0	9.5	50.0
3 & 4 Methylphenol	Ave	1.368	1.285		70.5	75.0	-6.1	50.0
N-Nitrosodi-n-propylamine	Ave	1.102	1.061		72.2	75.0	-3.8	50.0
Acetophenone	Ave	0.5031	0.4896		73.0	75.0	-2.7	50.0
Hexachloroethane	Ave	0.6426	0.6213		72.5	75.0	-3.3	50.0
Nitrobenzene	Ave	0.4013	0.3987		74.5	75.0	-0.7	50.0
Isophorone	Ave	0.7076	0.6940		73.6	75.0	-1.9	50.0
2-Nitrophenol	Ave	0.1893	0.1949		77.2	75.0	2.9	50.0
2,4-Dimethylphenol	Ave	0.3624	0.3668		75.9	75.0	1.2	50.0
Bis(2-chloroethoxy)methane	Ave	0.4399	0.4064		69.3	75.0	-7.6	50.0
2,4-Dichlorophenol	Ave	0.2926	0.2979		76.4	75.0	1.8	50.0
1,2,4-Trichlorobenzene	Ave	0.3340	0.3355		75.4	75.0	0.5	50.0
Naphthalene	Ave	0.9565	0.8874		69.6	75.0	-7.2	50.0
4-Chloroaniline	Ave	0.4432	0.4221		71.4	75.0	-4.8	50.0
2,6-Dichlorophenol	Ave	0.2841	0.2893		76.4	75.0	1.8	50.0
Hexachlorobutadiene	Ave	0.1979	0.2074		78.6	75.0	4.8	50.0
4-Chloro-3-methylphenol	Ave	0.3322	0.3343		75.5	75.0	0.6	50.0
2-Methylnaphthalene	Ave	0.6999	0.6475		69.4	75.0	-7.5	50.0
1-Methylnaphthalene	Ave	0.6471	0.6086		70.5	75.0	-6.0	50.0
Hexachlorocyclopentadiene	Ave	0.3614	0.3670		76.2	75.0	1.6	50.0
1,2,4,5-Tetrachlorobenzene	Ave	0.5726	0.5737		75.1	75.0	0.2	50.0
2,4,6-Trichlorophenol	Ave	0.3642	0.3933		81.0	75.0	8.0	50.0
2,4,5-Trichlorophenol	Ave	0.3835	0.4018		78.6	75.0	4.8	50.0
Biphenyl	Ave	1.409	1.306		69.5	75.0	-7.3	50.0
2-Chloronaphthalene	Ave	1.097	1.055		72.1	75.0	-3.8	50.0
2-Nitroaniline	Ave	0.4097	0.4325		79.2	75.0	5.6	50.0
Dimethyl phthalate	Ave	1.258	1.242		74.0	75.0	-1.3	50.0
1,3-Dinitrobenzene	Ave	0.2144	0.2241		78.4	75.0	4.5	50.0
2,6-Dinitrotoluene	Ave	0.2988	0.3098		77.8	75.0	3.7	50.0
Acenaphthylene	Ave	1.699	1.586		70.0	75.0	-6.7	50.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVC 320-134817/17 Calibration Date: 10/27/2016 17:42

Instrument ID: SV5 Calib Start Date: 10/05/2016 15:14

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 19:23

Lab File ID: HSL1005L.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
3-Nitroaniline	Ave	0.3435	0.3370		73.6	75.0	-1.9	50.0
2,4-Dinitrophenol	Ave	0.1814	0.1914		158	150	5.5	50.0
Acenaphthene	Ave	1.098	1.046		71.5	75.0	-4.7	50.0
4-Nitrophenol	Ave	0.1770	0.2139		181	150	20.9	50.0
2,4-Dinitrotoluene	Ave	0.4073	0.4184		77.0	75.0	2.7	50.0
Dibenzofuran	Ave	1.558	1.443		69.5	75.0	-7.4	50.0
2,3,4,6-Tetrachlorophenol	Ave	0.3040	0.3230		79.7	75.0	6.2	50.0
Diethyl phthalate	Ave	1.265	1.267		75.1	75.0	0.2	50.0
4-Chlorophenyl phenyl ether	Ave	0.6390	0.6432		75.5	75.0	0.7	50.0
4-Nitroaniline	Ave	0.3493	0.3599		77.3	75.0	3.0	50.0
Fluorene	Ave	1.283	1.198		70.0	75.0	-6.6	50.0
4,6-Dinitro-2-methylphenol	Ave	0.1377	0.1509		164	150	9.6	50.0
N-Nitrosodiphenylamine	Ave	0.5652	0.5301		70.3	75.0	-6.2	50.0
Azobenzene	Ave	0.8107	0.7448		68.9	75.0	-8.1	50.0
4-Bromophenyl phenyl ether	Ave	0.2298	0.2188		71.4	75.0	-4.8	50.0
Hexachlorobenzene	Ave	0.2362	0.2319		73.6	75.0	-1.8	50.0
Pentachlorophenol	Ave	0.1254	0.1320		158	150	5.3	50.0
Phenanthrene	Ave	1.028	0.9762		71.2	75.0	-5.0	50.0
Anthracene	Ave	1.062	1.012		71.4	75.0	-4.7	50.0
Carbazole	Ave	0.9843	0.9492		72.3	75.0	-3.6	50.0
Di-n-butyl phthalate	Ave	1.205	1.198		74.5	75.0	-0.6	50.0
Fluoranthene	Ave	1.171	1.174		75.2	75.0	0.3	50.0
Pyrene	Ave	1.161	1.148		74.1	75.0	-1.1	50.0
Butyl benzyl phthalate	Ave	0.6020	0.6019		75.0	75.0	-0.0	50.0
Bis(2-ethylhexyl) phthalate	Ave	0.8240	0.8445		76.9	75.0	2.5	50.0
Benzo[a]anthracene	Ave	1.167	1.136		73.0	75.0	-2.7	50.0
Chrysene	Ave	1.114	1.071		72.2	75.0	-3.8	50.0
Di-n-octyl phthalate	Ave	1.432	1.479		77.4	75.0	3.3	50.0
Benzo[b]fluoranthene	Ave	1.202	1.155		72.1	75.0	-3.9	50.0
Benzo[k]fluoranthene	Ave	1.185	1.148		72.7	75.0	-3.1	50.0
Benzo[a]pyrene	Ave	1.128	1.147		76.3	75.0	1.7	50.0
Indeno[1,2,3-cd]pyrene	Ave	0.9622	0.9754		76.0	75.0	1.4	50.0
Dibenz(a,h)anthracene	Ave	0.996	0.9751		73.5	75.0	-2.1	50.0
Benzo[g,h,i]perylene	Ave	0.9406	0.8870		70.7	75.0	-5.7	50.0
2-Fluorophenol (Surr)	Ave	1.391	1.333		71.8	75.0	-4.2	
Phenol-d5 (Surr)	Ave	1.688	1.591		70.7	75.0	-5.7	
Nitrobenzene-d5 (Surr)	Ave	0.4422	0.4196		71.2	75.0	-5.1	
2-Fluorobiphenyl (Surr)	Ave	1.284	1.265		73.9	75.0	-1.4	
2,4,6-Tribromophenol (Surr)	Ave	0.1824	0.1946		80.0	75.0	6.7	
Terphenyl-d14 (Surr)	Ave	0.8030	0.7783		72.7	75.0	-3.1	

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\HSL1005L.D
Lims ID: CCVC HSL
Client ID:
Sample Type: CCVC
Inject. Date: 27-Oct-2016 17:42:30 ALS Bottle#: 97 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV HSL
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub44

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:03:17 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:03:17

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.660	5.660	0.000	98	254306	40.0	40.0	
* 2 Naphthalene-d8	136	6.612	6.612	0.000	100	957039	40.0	40.0	
* 3 Acenaphthene-d10	164	7.992	7.992	0.000	100	572420	40.0	40.0	
* 4 Phenanthrene-d10	188	9.329	9.329	0.000	100	1005010	40.0	40.0	
* 5 Chrysene-d12	240	12.560	12.560	0.000	100	1044430	40.0	40.0	
* 6 Perylene-d12	264	16.165	16.165	0.000	100	1063807	40.0	40.0	
$ 7 2-Fluorophenol	112	4.510	4.510	0.000	0	635437	75.0	71.8	
$ 8 Phenol-d5	99	5.355	5.355	0.000	0	758789	75.0	70.7	
$ 9 1,2-Dichlorobenzene-d4	152	5.789	5.789	0.000	0	425214	NC	NC	
$ 10 Nitrobenzene-d5	82	6.077	6.077	0.000	0	752946	75.0	71.2	
$ 11 2-Fluorobiphenyl (Surr)	172	7.409	7.409	0.000	0	1358166	75.0	73.9	
$ 12 2,4,6-Tribromophenol	330	8.682	8.682	0.000	0	208812	75.0	80.0	
$ 13 Terphenyl-d14	244	10.907	10.907	0.000	0	1524097	75.0	72.7	
14 1,4-Dioxane	88	2.451	2.451	0.000	0	256382	NC	NC	
15 N-Nitrosodimethylamine	74	2.809	2.809	0.000	0	411639	75.0	61.3	
16 Pyridine	79	2.874	2.874	0.000	0	696414	75.0	59.3	
26 Phenol	94	5.366	5.366	0.000	0	758716	75.0	70.9	
27 Aniline	93	5.387	5.387	0.000	0	934596	75.0	69.1	
28 Bis(2-chloroethyl)ether	93	5.430	5.430	0.000	0	583224	75.0	67.0	
30 2-Chlorophenol	128	5.500	5.500	0.000	0	612303	75.0	69.6	
31 1,3-Dichlorobenzene	146	5.623	5.623	0.000	0	696958	75.0	71.3	
32 1,4-Dichlorobenzene	146	5.676	5.676	0.000	0	691410	75.0	72.1	
33 Benzyl alcohol	108	5.756	5.756	0.000	0	418811	75.0	70.7	
34 1,2-Dichlorobenzene	146	5.799	5.799	0.000	0	651440	75.0	69.8	
35 2-Methylphenol	108	5.842	5.842	0.000	0	576864	75.0	72.3	
36 2,2'-oxybis[1-chloropropan	45	5.858	5.858	0.000	0	1132079	75.0	82.1	
39 3 & 4 Methylphenol	108	5.954	5.954	0.000	0	612576	75.0	70.5	
40 N-Nitrosodi-n-propylamine	70	5.954	5.954	0.000	0	505820	75.0	72.2	
42 Acetophenone	105	5.960	5.960	0.000	0	878635	75.0	73.0	
45 Hexachloroethane	117	6.061	6.061	0.000	0	296250	75.0	72.5	
46 Nitrobenzene	77	6.093	6.093	0.000	0	715365	75.0	74.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.265	6.265	0.000	0	1245388	75.0	73.6	
49 2-Nitrophenol	139	6.323	6.323	0.000	0	349770	75.0	77.2	
50 2,4-Dimethylphenol	107	6.339	6.339	0.000	0	658271	75.0	75.9	
52 Bis(2-chloroethoxy)methane	93	6.398	6.398	0.000	0	729303	75.0	69.3	
55 2,4-Dichlorophenol	162	6.505	6.505	0.000	0	534525	75.0	76.4	
57 1,2,4-Trichlorobenzene	180	6.564	6.564	0.000	0	602096	75.0	75.4	
58 Naphthalene	128	6.628	6.628	0.000	0	1592378	75.0	69.6	
59 4-Chloroaniline	127	6.650	6.650	0.000	0	757422	75.0	71.4	
60 2,6-Dichlorophenol	162	6.666	6.666	0.000	0	519117	75.0	76.4	
62 Hexachlorobutadiene	225	6.714	6.714	0.000	0	372134	75.0	78.6	
67 4-Chloro-3-methylphenol	107	6.992	6.992	0.000	0	599882	75.0	75.5	
69 2-Methylnaphthalene	142	7.142	7.142	0.000	0	1161872	75.0	69.4	
70 1-Methylnaphthalene	142	7.222	7.222	0.000	0	1092057	75.0	70.5	
71 Hexachlorocyclopentadiene	237	7.270	7.270	0.000	0	393928	75.0	76.2	
72 1,2,4,5-Tetrachlorobenzene	216	7.275	7.275	0.000	0	615790	75.0	75.1	
74 2,4,6-Trichlorophenol	196	7.350	7.350	0.000	0	422106	75.0	81.0	
75 2,4,5-Trichlorophenol	196	7.388	7.388	0.000	0	431277	75.0	78.6	
77 1,1'-Biphenyl	154	7.495	7.495	0.000	0	1401349	75.0	69.5	
78 2-Chloronaphthalene	162	7.532	7.532	0.000	0	1132162	75.0	72.1	
80 2-Nitroaniline	65	7.591	7.591	0.000	0	464150	75.0	79.2	
84 Dimethyl phthalate	163	7.714	7.714	0.000	0	1332725	75.0	74.0	
85 1,3-Dinitrobenzene	168	7.752	7.752	0.000	0	240539	75.0	78.4	
86 2,6-Dinitrotoluene	165	7.773	7.773	0.000	0	332520	75.0	77.8	
87 Acenaphthylene	152	7.875	7.875	0.000	0	1702300	75.0	70.0	
88 3-Nitroaniline	138	7.923	7.923	0.000	0	361664	75.0	73.6	
89 2,4-Dinitrophenol	184	8.014	8.014	0.000	0	410842	150.0	158.3	
90 Acenaphthene	153	8.019	8.019	0.000	0	1123005	75.0	71.5	
91 4-Nitrophenol	109	8.046	8.046	0.000	0	459174	150.0	181.3	
92 2,4-Dinitrotoluene	165	8.121	8.121	0.000	0	449021	75.0	77.0	
94 Dibenzofuran	168	8.163	8.163	0.000	0	1549097	75.0	69.5	
97 2,3,4,6-Tetrachlorophenol	232	8.265	8.265	0.000	0	346642	75.0	79.7	
99 Diethyl phthalate	149	8.302	8.302	0.000	0	1360252	75.0	75.1	
101 4-Chlorophenyl phenyl ethe	204	8.436	8.436	0.000	0	690351	75.0	75.5	
103 4-Nitroaniline	138	8.458	8.458	0.000	0	386234	75.0	77.3	
104 Fluorene	166	8.463	8.463	0.000	0	1286145	75.0	70.0	
105 4,6-Dinitro-2-methylphenol	198	8.490	8.490	0.000	0	568678	150.0	164.3	
106 N-Nitrosodiphenylamine	169	8.538	8.538	0.000	0	998909	75.0	70.3	
107 Diphenylamine	169	8.538	8.538	0.000	0	998909	NC	NC	
108 Azobenzene	77	8.581	8.581	0.000	0	1403541	75.0	68.9	
115 4-Bromophenyl phenyl ether	248	8.880	8.880	0.000	0	412260	75.0	71.4	
117 Hexachlorobenzene	284	8.982	8.982	0.000	0	436974	75.0	73.6	
120 Pentachlorophenol	266	9.148	9.148	0.000	0	497485	150.0	157.9	
125 Phenanthrene	178	9.351	9.351	0.000	0	1839489	75.0	71.2	
126 Anthracene	178	9.399	9.399	0.000	0	1906348	75.0	71.4	
127 Carbazole	167	9.533	9.533	0.000	0	1788675	75.0	72.3	
129 Di-n-butyl phthalate	149	9.811	9.811	0.000	0	2256698	75.0	74.5	
134 Fluoranthene	202	10.511	10.511	0.000	0	2213123	75.0	75.2	
136 Pyrene	202	10.774	10.774	0.000	0	2247311	75.0	74.1	
142 Butyl benzyl phthalate	149	11.522	11.522	0.000	0	1178730	75.0	75.0	
149 Bis(2-ethylhexyl) phthalat	149	12.506	12.506	0.000	0	1653876	75.0	76.9	
150 Benzo[a]anthracene	228	12.539	12.539	0.000	0	2223824	75.0	73.0	
151 Chrysene	228	12.613	12.613	0.000	0	2098058	75.0	72.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Di-n-octyl phthalate	149	13.999	13.999	0.000	0	2895998	75.0	77.4	
155 Benzo[b]fluoranthene	252	15.068	15.068	0.000	0	2303690	75.0	72.1	
156 Benzo[k]fluoranthene	252	15.143	15.143	0.000	0	2289949	75.0	72.7	
157 Benzo[a]pyrene	252	16.004	16.004	0.000	0	2287774	75.0	76.3	
161 Indeno[1,2,3-cd]pyrene	276	19.021	19.021	0.000	0	1945633	75.0	76.0	
162 Dibenz(a,h)anthracene	278	19.080	19.080	0.000	0	1944955	75.0	73.5	
163 Benzo[g,h,i]perylene	276	19.626	19.626	0.000	0	1769209	75.0	70.7	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSHSLL7_00022 Amount Added: 1.00 Units: mL

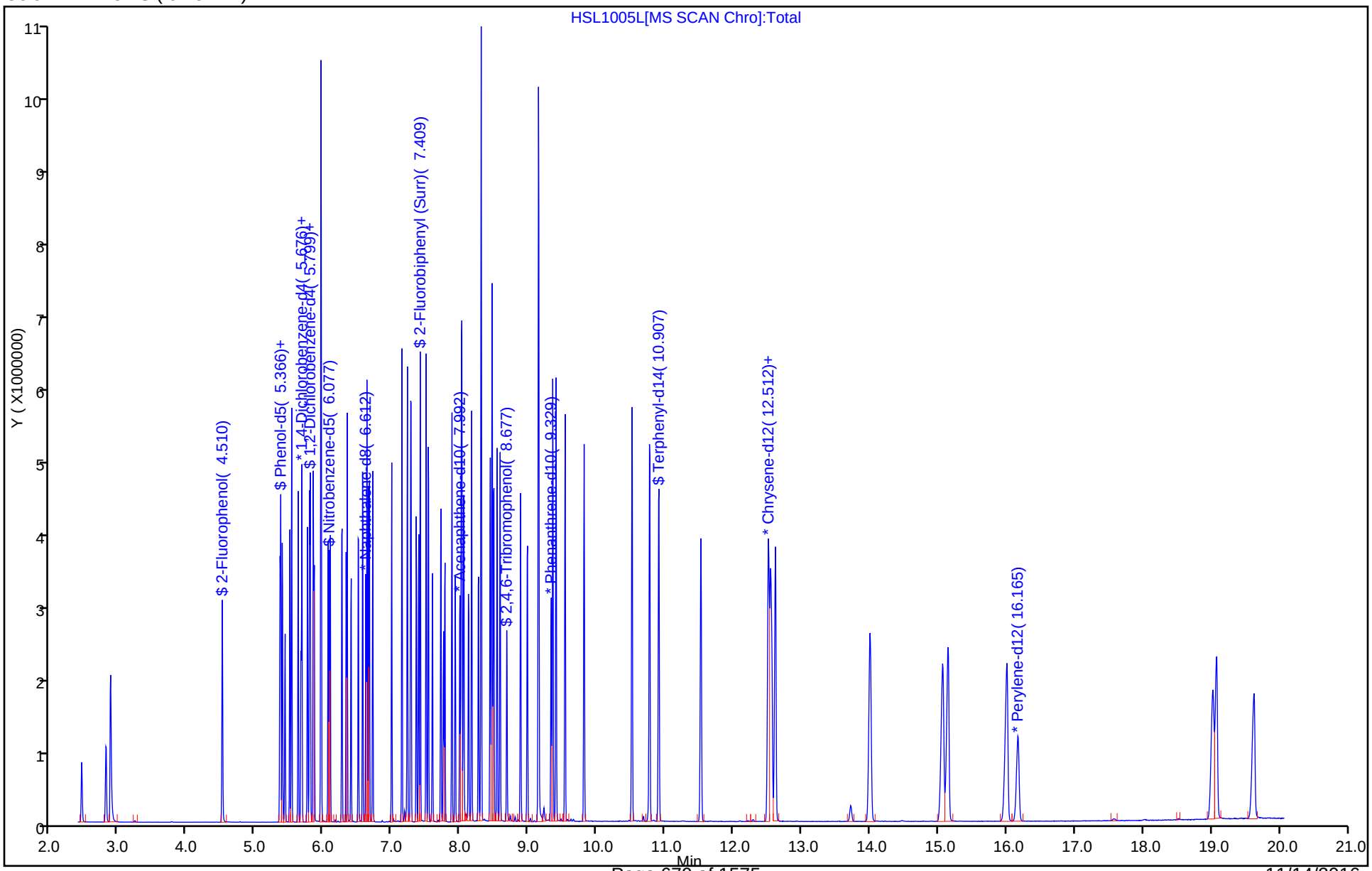
Report Date: 28-Oct-2016 14:03:18 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\HSL1005L.D

Injection Date:	27-Oct-2016 17:42:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	CCVC HSL			Worklist Smp#:	17
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	97
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVC 320-134817/18 Calibration Date: 10/27/2016 18:09

Instrument ID: SV5 Calib Start Date: 10/05/2016 10:35

GC Column: HP-5MS ID: 0.25(mm) Calib End Date: 10/05/2016 14:16

Lab File ID: ODD1005L.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Benzaldehyde	Ave	1.081	0.9542		66.2	75.0	-11.7	50.0
Benzoic acid	Qua2		0.2245		163	150	8.7	50.0
Benzidine	Ave	0.8668	0.7213		62.4	75.0	-16.8	50.0
3,3'-Dichlorobenzidine	Ave	0.4426	0.4499		76.2	75.0	1.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\ODD1005L.D
Lims ID: CCVC ODD
Client ID:
Sample Type: CCVC
Inject. Date: 27-Oct-2016 18:09:30 ALS Bottle#: 98 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV ODD
Operator ID: Instrument ID: SV5
Sublist: chrom-8270C_SV5*sub59

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:03:34 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:03:34

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.660	5.660	0.000	100	272618	40.0	40.0	
* 2 Naphthalene-d8	136	6.612	6.612	0.000	100	988103	40.0	40.0	
* 3 Acenaphthene-d10	164	7.987	7.987	0.000	100	607386	40.0	40.0	
* 4 Phenanthrene-d10	188	9.324	9.324	0.000	100	1073053	40.0	40.0	
* 5 Chrysene-d12	240	12.555	12.555	0.000	100	1113473	40.0	40.0	
* 6 Perylene-d12	264	16.160	16.160	0.000	100	1143162	40.0	40.0	
21 1,4-Oxathiane	46	4.671	4.671	0.000	0	783800	NC	NC	
25 Benzaldehyde	106	5.296	5.296	0.000	0	487740	75.0	66.2	
37 Indene	115	5.869	5.869	0.000	0	2064653	NC	NC	
44 1,4-Dithiane	120	6.013	6.013	0.000	0	501956	NC	NC	
53 Benzoic acid	105	6.436	6.436	0.000	0	832001	150.0	163.1	
56 Thiodiglycol	61	6.511	6.511	0.000	0	492829	NC	NC	
66 Caprolactam	113	6.917	6.917	0.000	0	199035	NC	NC	
118 Atrazine	200	8.992	8.992	0.000	0	439861	NC	NC	
135 Benzidine	184	10.613	10.613	0.000	0	1505896	75.0	62.4	
147 3,3'-Dichlorobenzidine	252	12.453	12.453	0.000	0	939311	75.0	76.2	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

MSODDL6_00008 Amount Added: 1.00 Units: mL

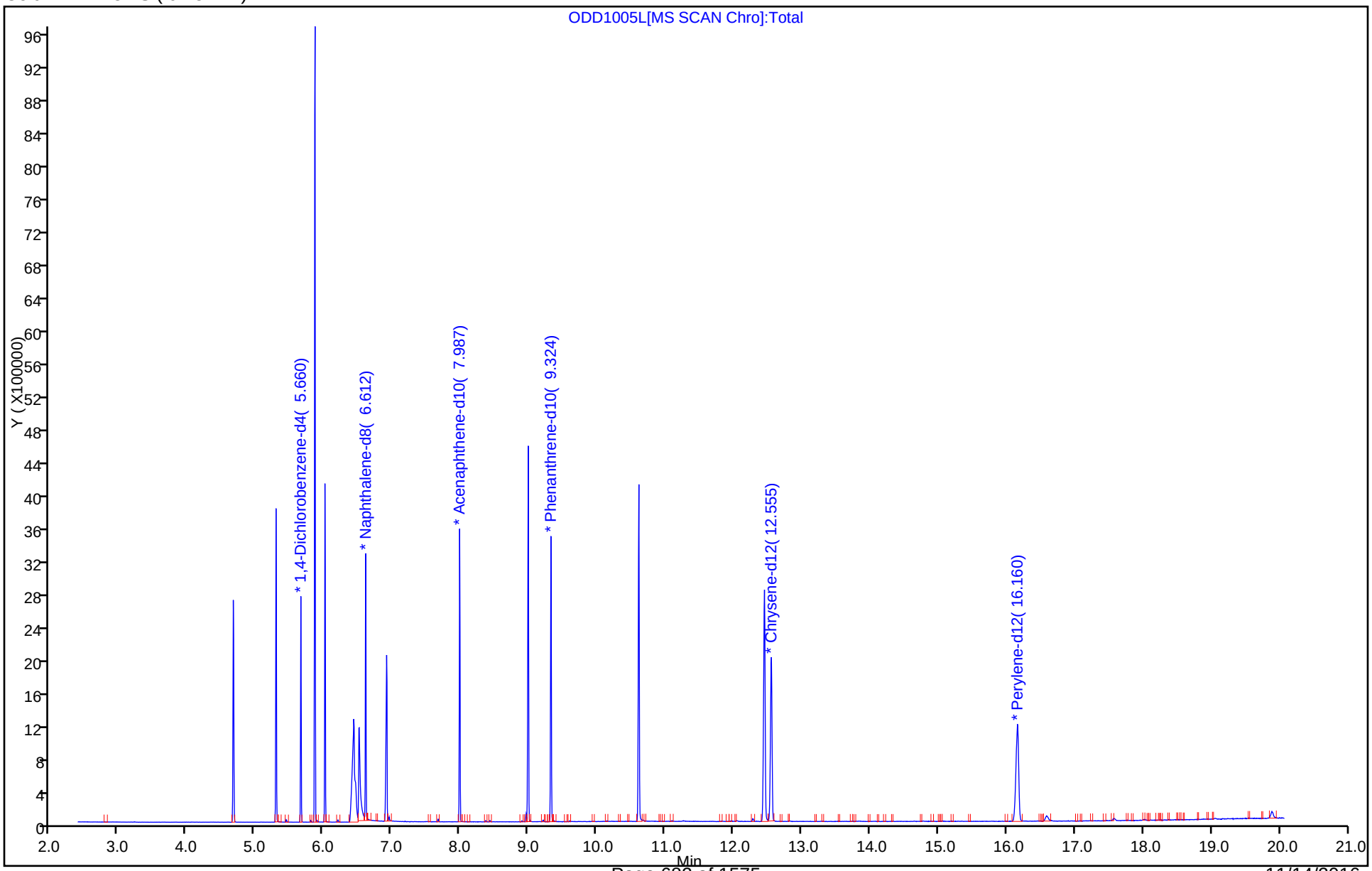
Report Date: 28-Oct-2016 14:03:35 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\ODD1005L.D

Injection Date:	27-Oct-2016 18:09:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	CCVC ODD			Worklist Smp#:	18
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	98
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 05-Oct-2016 10:14:30 ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: dftpp
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 06-Oct-2016 09:50:58 Calib Date: 05-Oct-2016 19:23:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\HSL1005J.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK035

First Level Reviewer: onishim Date: 06-Oct-2016 09:50:58

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
164 Pentachlorophenol_T	266	9.344	9.344	0.000	0	734877	NR	NR	
165 DFTPP									
166 Benzidine_T	184	12.050	12.050	0.000	0	3298814	NR	NR	
167 4,4'-DDE	246	12.484	12.484	0.000	0	2162	NR	NR	
168 4,4'-DDD	235	13.377	13.377	0.000	0	4290	NR	NR	
169 4,4'-DDT	235	14.185	14.185	0.000	0	2215672	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

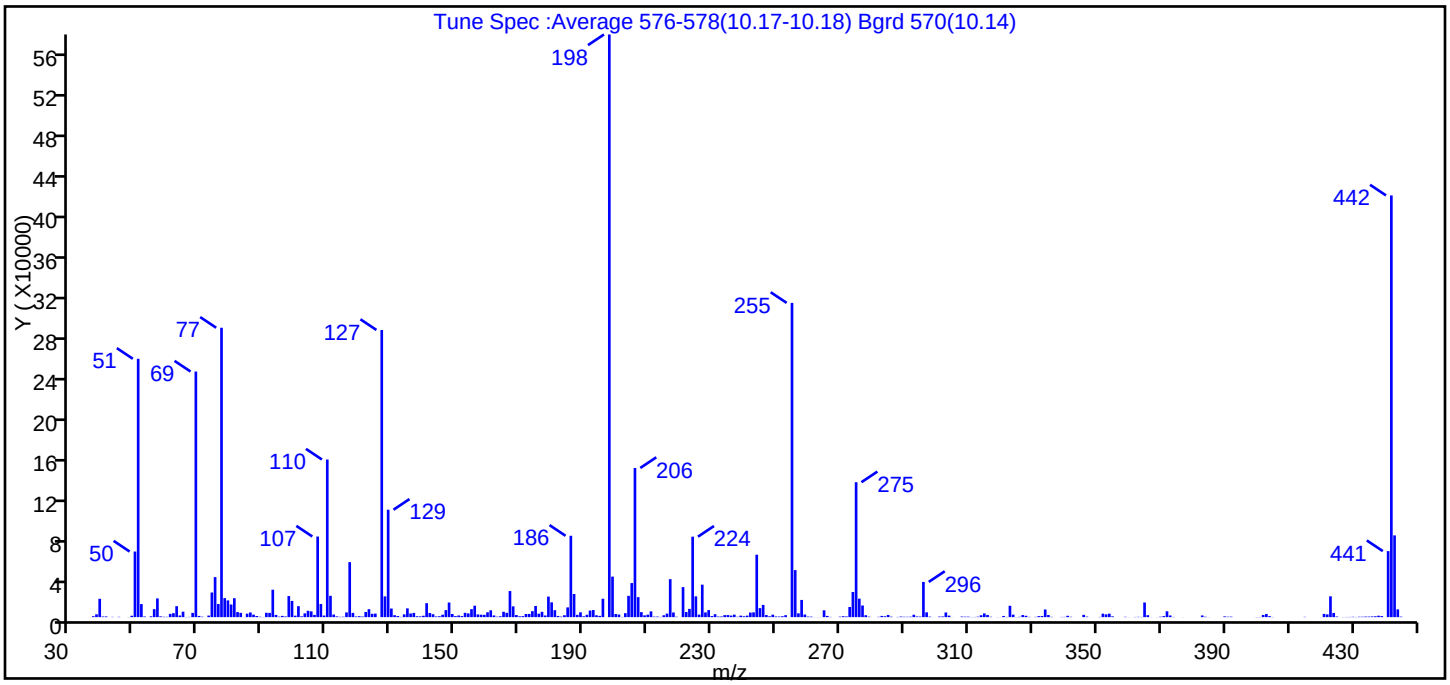
MSDFTPPPE_00008 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D
Injection Date: 05-Oct-2016 10:14:30 Instrument ID: SV5
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Tune Method: DFTPP Method 8270D, BP 198

165 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >50% of 442	100.0 (138.2)
51	10-80% of the base peak	44.3
68	<2% of mass 69	0.7 (1.7)
69	Present	42.2
70	<2% of mass 69	0.2 (0.5)
127	10-80% of the base peak	49.3
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.0
275	10-60% of the base peak	23.2
365	>1% of mass 198	2.5
441	present but <24% of mass 442	11.3 (15.7)
442	base peak, or >50% of 198	72.4
443	15-24% of mass 442	14.0 (19.4)

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D\8270C_SV5.rslt\spectra.d
Injection Date: 05-Oct-2016 10:14:30
Spectrum: Tune Spec :Average 576-578(10.17-10.18) Bgrd 570(10.14)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 345

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	68	129.00	105168	217.00	37192	314.00	1845
37.00	931	130.00	8414	218.00	4577	315.00	3666
38.00	2764	131.00	1923	219.00	388	316.00	2138
39.00	17984	132.00	1084	221.00	29408	317.00	383
40.00	631	133.00	242	222.00	5029	319.00	95
41.00	696	134.00	2712	223.00	8087	320.00	67
43.00	253	135.00	8601	224.00	78776	321.00	1158
44.00	11	136.00	3600	225.00	20352	322.00	229
45.00	310	137.00	4168	226.00	2465	323.00	11112
48.00	99	138.00	855	227.00	31792	324.00	2476
49.00	1352	139.00	731	228.00	4633	325.00	131
50.00	64224	140.00	1373	229.00	6914	326.00	353
51.00	252928	141.00	13676	230.00	1066	327.00	2037
52.00	12782	142.00	4041	231.00	2846	328.00	1333
53.00	619	143.00	2843	232.00	574	329.00	270
55.00	820	144.00	656	233.00	656	331.00	265
56.00	7821	145.00	891	234.00	1969	332.00	1020
57.00	18344	146.00	2396	235.00	2031	333.00	1060
58.00	746	147.00	6878	236.00	1532	334.00	7493
59.00	369	148.00	14333	237.00	2454	335.00	2072
60.00	315	149.00	3118	238.00	345	336.00	295
61.00	3218	150.00	998	239.00	1469	339.00	196
62.00	3896	151.00	1629	240.00	824	340.00	254
63.00	10732	152.00	1047	241.00	1486	341.00	1329
64.00	1604	153.00	4246	242.00	4475	342.00	345
65.00	5362	154.00	3635	243.00	4682	346.00	2241
66.00	168	155.00	7813	244.00	61136	347.00	500
67.00	254	156.00	11178	245.00	8833	351.00	230
68.00	4153	157.00	2666	246.00	11991	352.00	3380
69.00	240448	158.00	2397	247.00	2044	353.00	2755
70.00	1196	159.00	2243	248.00	829	354.00	3387
71.00	401	160.00	4744	249.00	2415	355.00	767
73.00	1541	161.00	6696	250.00	649	359.00	331

Report Date: 06-Oct-2016 09:51:03 Chrom Revision: 2.2 08-Sep-2016 14:45:52
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D\8270C_SV5.rslt\spectra.d
Injection Date: 05-Oct-2016 10:14:30
Spectrum: Tune Spec :Average 576-578(10.17-10.18) Bgrd 570(10.14)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 345

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74.00	24128	162.00	1661	251.00	562	360.00	70
75.00	39208	163.00	461	252.00	889	362.00	188
76.00	12880	164.00	832	253.00	1914	363.00	297
77.00	283328	165.00	5263	255.00	307648	364.00	204
78.00	18608	166.00	4230	256.00	46080	365.00	14361
79.00	16382	167.00	25552	257.00	3730	366.00	1909
80.00	12373	168.00	10556	258.00	16848	367.00	89
81.00	18544	169.00	2082	259.00	2574	369.00	82
82.00	4958	170.00	817	260.00	546	370.00	428
83.00	4194	171.00	998	261.00	492	371.00	1005
84.00	97	172.00	3064	262.00	73	372.00	5717
85.00	3418	173.00	3132	263.00	70	373.00	1627
86.00	4596	174.00	5861	264.00	78	374.00	204
87.00	2480	175.00	10948	265.00	6679	377.00	76
88.00	1094	176.00	3361	266.00	1205	383.00	1649
89.00	376	177.00	5242	267.00	227	384.00	406
90.00	107	178.00	1634	270.00	483	385.00	92
91.00	4308	179.00	20120	271.00	888	390.00	736
92.00	4140	180.00	14506	272.00	669	391.00	419
93.00	26864	181.00	6820	273.00	9934	392.00	478
94.00	2171	182.00	1185	274.00	24632	400.00	151
95.00	482	183.00	496	275.00	132096	401.00	182
96.00	1236	184.00	1883	276.00	18104	402.00	2127
97.00	657	185.00	9555	277.00	11389	403.00	3100
98.00	20624	186.00	79656	278.00	1884	404.00	960
99.00	15895	187.00	22632	279.00	455	405.00	170
100.00	1439	188.00	2270	282.00	311	415.00	283
101.00	10740	189.00	4754	283.00	1201	420.00	90
102.00	787	190.00	803	284.00	848	421.00	3190
103.00	3707	191.00	2320	285.00	2125	422.00	2701
104.00	6204	192.00	6446	286.00	447	423.00	20384
105.00	5656	193.00	6961	288.00	215	424.00	4100
106.00	2225	194.00	1839	289.00	576	425.00	581
107.00	78920	195.00	1242	290.00	372	427.00	108

Report Date: 06-Oct-2016 09:51:03 Chrom Revision: 2.2 08-Sep-2016 14:45:52
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D\8270C_SV5.rslt\spectra.d
Injection Date: 05-Oct-2016 10:14:30
Spectrum: Tune Spec :Average 576-578(10.17-10.18) Bgrd 570(10.14)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 345

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	12892	196.00	18008	291.00	343	428.00	175
109.00	1570	198.00	570432	292.00	426	429.00	215
110.00	154304	199.00	39680	293.00	2338	430.00	340
111.00	20904	200.00	3032	294.00	659	431.00	173
112.00	2540	201.00	2538	295.00	533	432.00	388
113.00	729	202.00	197	296.00	34480	433.00	397
114.00	322	203.00	3890	297.00	4689	434.00	573
115.00	411	204.00	20848	298.00	492	435.00	534
116.00	4616	205.00	33368	299.00	75	436.00	689
117.00	53848	206.00	146048	301.00	565	437.00	835
118.00	4179	207.00	19600	302.00	648	438.00	1404
119.00	669	208.00	4904	303.00	4568	439.00	1030
120.00	919	209.00	1752	304.00	1479	441.00	64648
121.00	578	210.00	2407	305.00	75	442.00	412864
122.00	5061	211.00	5660	308.00	564	443.00	80040
123.00	7773	212.00	517	309.00	446	444.00	7613
124.00	3277	213.00	551	310.00	476	445.00	500
125.00	3462	214.00	207	311.00	162		
127.00	281152	215.00	1842	312.00	196		
128.00	20336	216.00	3468	313.00	447		

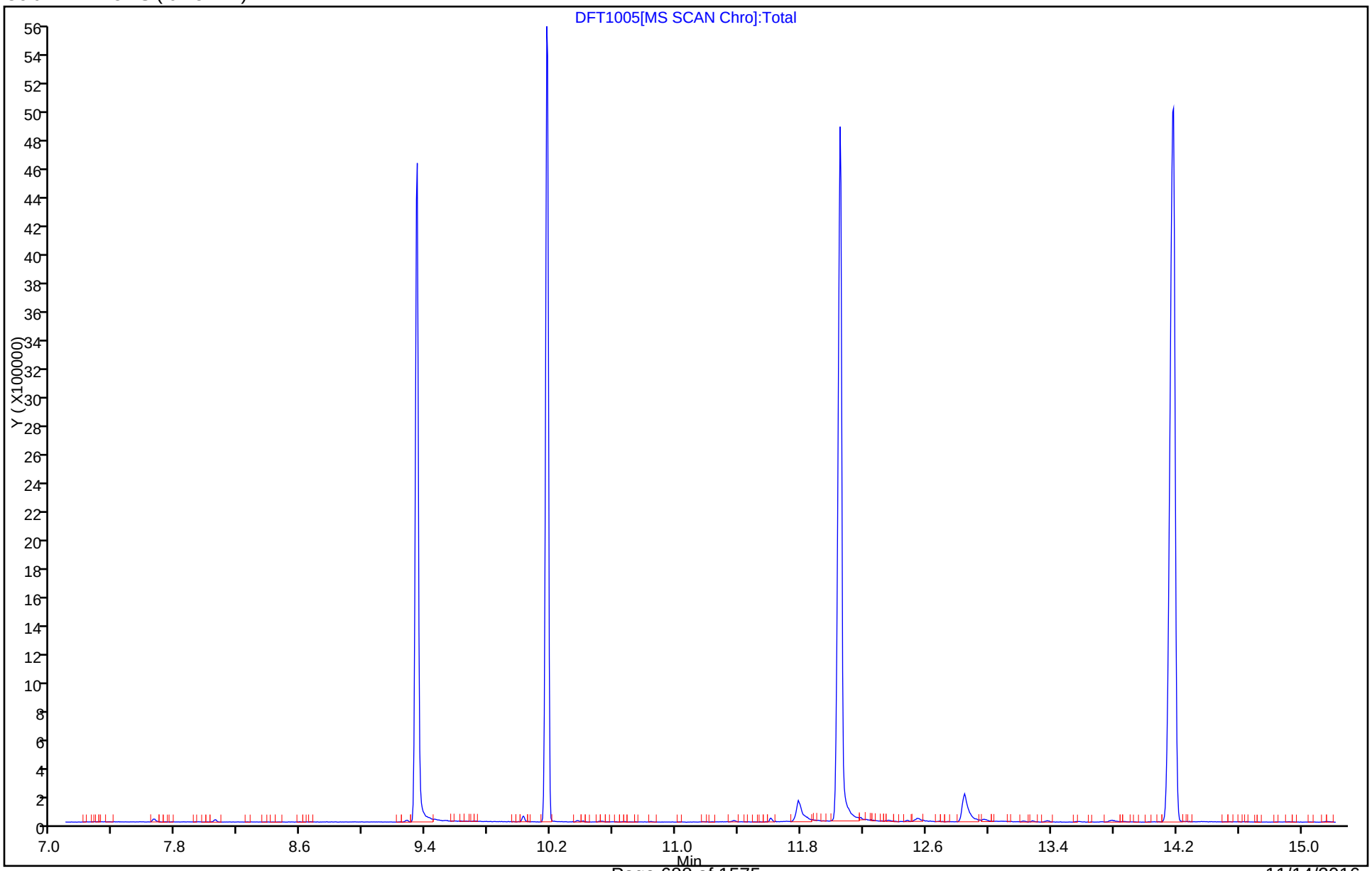
Report Date: 06-Oct-2016 09:51:03 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D

Injection Date:	05-Oct-2016 10:14:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	DFTPP			Worklist Smp#:	1
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	96
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)

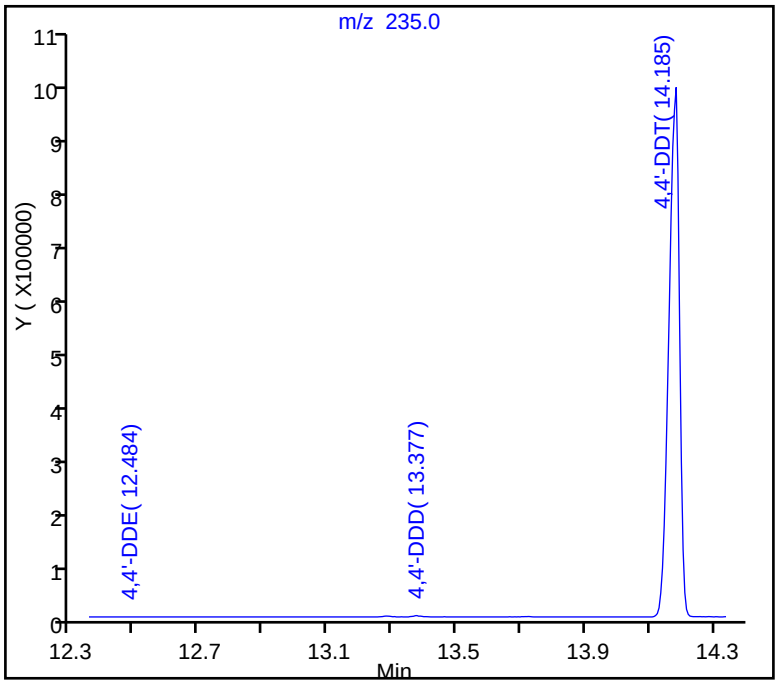


Breakdown Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D
Injection Date: 05-Oct-2016 10:14:30 Instrument ID: SV5
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

169 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

169 4,4'-DDT, Area = 2215672
168 4,4'-DDD, Area = 4290
167 4,4'-DDE, Area = 2162

%Breakdown: 0.29%, Max Limit: 20.00%
Passed

Peak Tailing Report

TestAmerica Sacramento

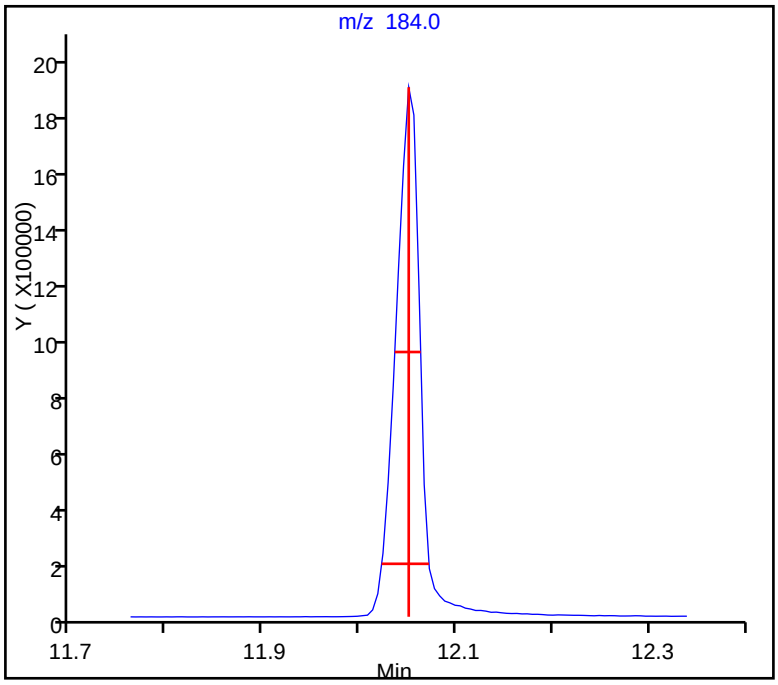
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D
Injection Date: 05-Oct-2016 10:14:30 Instrument ID: SV5
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

166 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.021 (min.)
Front Width = 0.028 (min.)

Tailing Factor = 0.7, Max. Tailing < 2.00
Passed



Peak Tailing Report

TestAmerica Sacramento

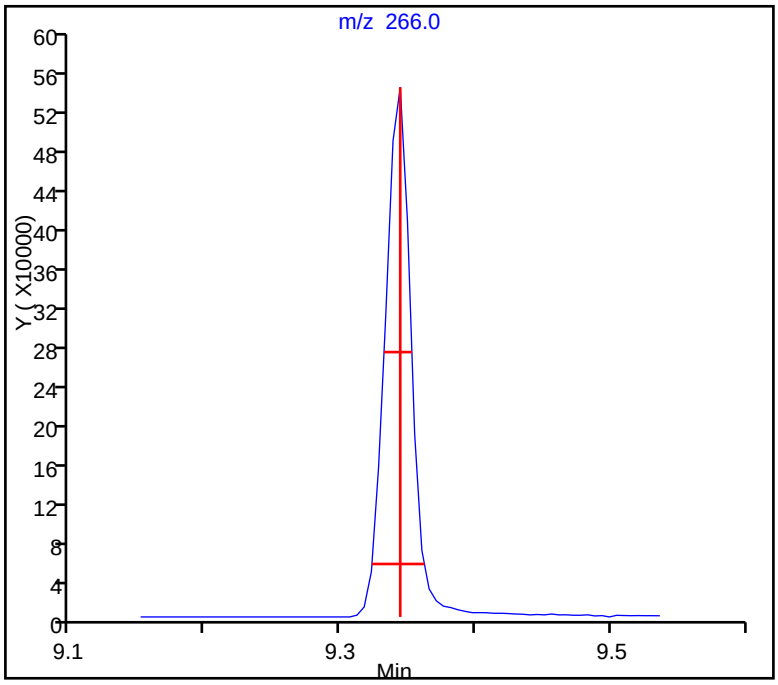
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161005-35277.b\DFT1005.D
Injection Date: 05-Oct-2016 10:14:30 Instrument ID: SV5
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

164 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.018 (min.)
Front Width = 0.021 (min.)

Tailing Factor = 0.9, Max. Tailing < 2.00
Passed



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 27-Oct-2016 09:52:30 ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: DFTPP
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 27-Oct-2016 14:01:24 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK026

First Level Reviewer: onishim Date: 27-Oct-2016 10:40:27

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
164 Pentachlorophenol_T	266	9.173	9.173	0.000	0	476338	NR	NR	
165 DFTPP									
166 Benzidine_T	184	11.847	11.847	0.000	0	2682002	NR	NR	
167 4,4'-DDE	246	12.253	12.253	0.000	0	1636	NR	NR	
168 4,4'-DDD	235	13.018	13.018	0.000	0	4356	NR	NR	
169 4,4'-DDT	235	13.863	13.863	0.000	0	1821309	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

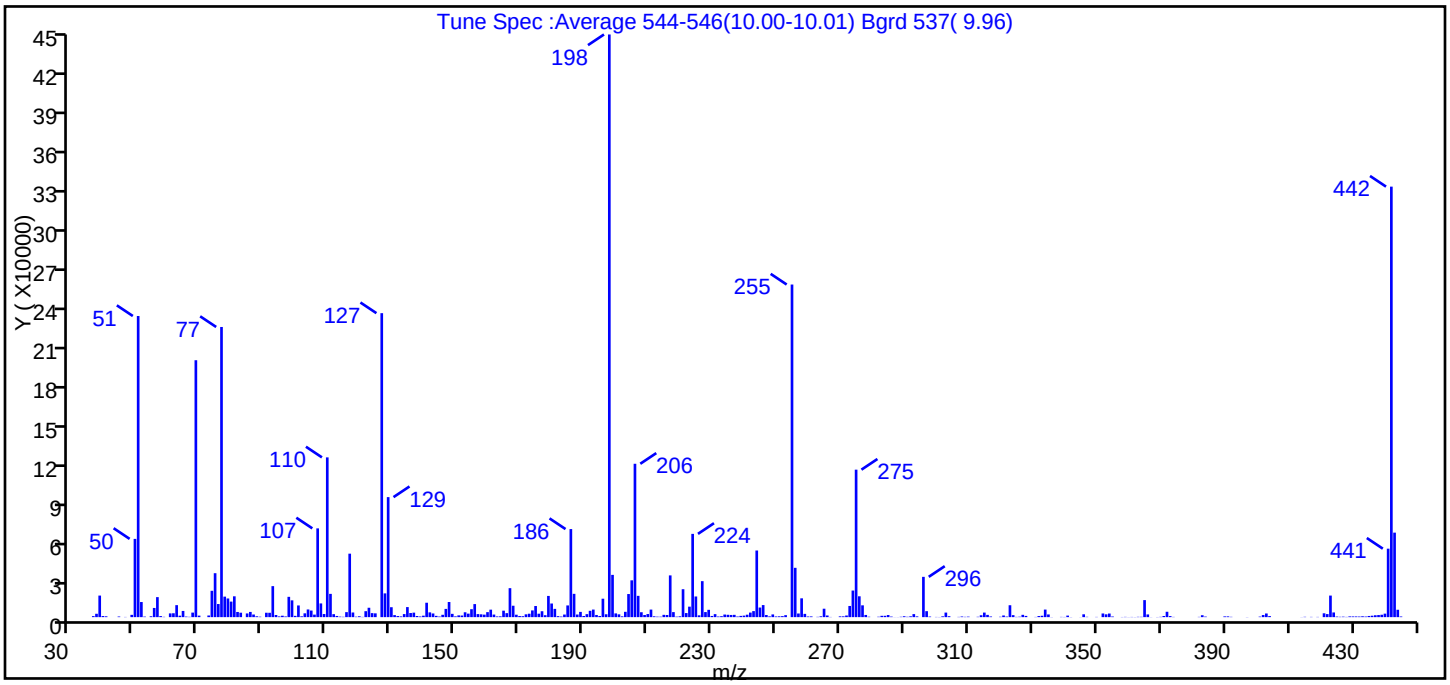
MSDFTPPPE_00008 Amount Added: 1.00 Units: mL

MS Tune Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D
Injection Date: 27-Oct-2016 09:52:30 Instrument ID: SV5
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL
Tune Method: DFTPP Method 8270D, BP 198

165 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >50% of 442	100.0 (135.3)
51	10-80% of the base peak	51.7
68	<2% of mass 69	0.8 (1.8)
69	Present	44.1
70	<2% of mass 69	0.3 (0.6)
127	10-80% of the base peak	52.2
197	<2% of mass 198	0.5
199	5-9% of mass 198	7.3
275	10-60% of the base peak	25.3
365	>1% of mass 198	2.9
441	present but <24% of mass 442	11.8 (15.9)
442	base peak, or >50% of 198	73.9
443	15-24% of mass 442	14.5 (19.6)

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D\8270C_SV5.rslt\spectra.d
Injection Date: 27-Oct-2016 09:52:30
Spectrum: Tune Spec :Average 544-546(10.00-10.01) Bgrd 537(9.96)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 340

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	788	134.00	2339	219.00	376	316.00	1727
38.00	2573	135.00	7686	220.00	621	317.00	500
39.00	16480	136.00	3155	221.00	21344	320.00	285
40.00	857	137.00	3438	222.00	3122	321.00	1274
41.00	640	138.00	871	223.00	8014	322.00	433
45.00	481	139.00	494	224.00	63640	323.00	9099
47.00	153	140.00	1121	225.00	15794	324.00	1518
49.00	1748	141.00	11009	226.00	1384	325.00	196
50.00	59808	142.00	3647	227.00	27504	326.00	330
51.00	230144	143.00	2805	228.00	3872	327.00	1770
52.00	11546	144.00	986	229.00	5604	328.00	941
53.00	417	145.00	456	230.00	906	331.00	156
55.00	680	146.00	1791	231.00	2301	332.00	842
56.00	7024	147.00	6299	232.00	473	333.00	1063
57.00	15298	148.00	11560	233.00	724	334.00	5785
58.00	813	149.00	2522	234.00	1985	335.00	2054
59.00	226	150.00	588	235.00	1798	336.00	103
61.00	2867	151.00	1350	236.00	1662	339.00	183
62.00	2973	152.00	1232	237.00	1755	340.00	140
63.00	9170	153.00	3723	238.00	466	341.00	1181
64.00	1113	154.00	2674	239.00	962	342.00	107
65.00	4737	155.00	6078	240.00	1166	345.00	74
66.00	418	156.00	9975	241.00	1860	346.00	2165
67.00	241	157.00	2331	242.00	3481	347.00	256
68.00	3471	158.00	2161	243.00	4614	350.00	176
69.00	196352	159.00	1918	244.00	50928	352.00	2800
70.00	1162	160.00	3820	245.00	7341	353.00	2160
73.00	1258	161.00	5720	246.00	9220	354.00	2757
74.00	20136	162.00	1969	247.00	1625	355.00	482
75.00	33584	163.00	542	248.00	586	358.00	122
76.00	10021	164.00	600	249.00	2081	359.00	197
77.00	221760	165.00	4940	250.00	515	360.00	85
78.00	15676	166.00	3056	251.00	630	361.00	155

Report Date: 27-Oct-2016 14:01:25 Chrom Revision: 2.2 17-Oct-2016 09:27:18
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D\8270C_SV5.rslt\spectra.d
Injection Date: 27-Oct-2016 09:52:30
Spectrum: Tune Spec :Average 544-546(10.00-10.01) Bgrd 537(9.96)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 340

m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	14268	167.00	22144	252.00	771	362.00	100
80.00	11874	168.00	8720	253.00	1511	363.00	240
81.00	15920	169.00	1853	255.00	254208	364.00	248
82.00	3955	170.00	850	256.00	37696	365.00	13016
83.00	3388	171.00	721	257.00	2776	366.00	2066
85.00	2832	172.00	2160	258.00	14385	367.00	79
86.00	3994	173.00	2611	259.00	2502	369.00	119
87.00	2008	174.00	5135	260.00	504	370.00	227
88.00	647	175.00	8508	261.00	544	371.00	877
89.00	326	176.00	2623	263.00	219	372.00	4111
91.00	3365	177.00	4518	264.00	630	373.00	809
92.00	3329	178.00	1483	265.00	6445	374.00	177
93.00	23696	179.00	16213	266.00	1256	382.00	201
94.00	1638	180.00	10416	267.00	150	383.00	1463
95.00	563	181.00	6325	270.00	600	384.00	414
96.00	1083	182.00	767	271.00	606	390.00	558
97.00	512	183.00	445	272.00	1246	391.00	571
98.00	15525	184.00	1988	273.00	8539	392.00	237
99.00	12838	185.00	8950	274.00	20328	397.00	98
100.00	982	186.00	67312	275.00	112712	401.00	407
101.00	8933	187.00	17808	276.00	15939	402.00	1611
102.00	628	188.00	2005	277.00	9026	403.00	2800
103.00	2914	189.00	4016	278.00	1673	404.00	809
104.00	5872	190.00	879	279.00	319	414.00	75
105.00	5044	191.00	2288	282.00	309	415.00	247
106.00	1927	192.00	4845	283.00	1017	417.00	190
107.00	67840	193.00	5787	284.00	1028	419.00	176
108.00	10482	194.00	1658	285.00	1611	421.00	2945
109.00	2384	195.00	877	286.00	419	422.00	2333
110.00	122104	196.00	14090	287.00	67	423.00	16480
111.00	17784	197.00	2202	288.00	74	424.00	3584
112.00	2282	198.00	445312	289.00	275	425.00	437
113.00	905	199.00	32304	290.00	680	426.00	261
114.00	396	200.00	2859	291.00	276	427.00	365

Report Date: 27-Oct-2016 14:01:25 Chrom Revision: 2.2 17-Oct-2016 09:27:18
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D\8270C_SV5.rslt\spectra.d
Injection Date: 27-Oct-2016 09:52:30
Spectrum: Tune Spec :Average 544-546(10.00-10.01) Bgrd 537(9.96)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 340

m/z	Y	m/z	Y	m/z	Y	m/z	Y
115.00	268	201.00	2140	292.00	629	428.00	173
116.00	3820	202.00	611	293.00	2318	429.00	563
117.00	48512	203.00	4075	294.00	576	430.00	533
118.00	3556	204.00	17664	296.00	30800	431.00	527
119.00	346	205.00	28136	297.00	4559	432.00	464
120.00	677	206.00	117216	298.00	446	433.00	655
121.00	181	207.00	16274	300.00	158	434.00	452
122.00	4552	208.00	3748	301.00	124	435.00	896
123.00	7177	209.00	1636	302.00	613	436.00	1096
124.00	3074	210.00	2360	303.00	3483	437.00	1438
125.00	2898	211.00	5783	304.00	706	438.00	1593
127.00	232320	212.00	631	307.00	190	439.00	1833
128.00	18160	213.00	374	308.00	490	440.00	2669
129.00	91728	214.00	335	309.00	240	441.00	52328
130.00	7586	215.00	1763	310.00	386	442.00	329024
131.00	1556	216.00	1644	313.00	271	443.00	64584
132.00	847	217.00	31904	314.00	1443	444.00	5640
133.00	551	218.00	3851	315.00	3487	445.00	493

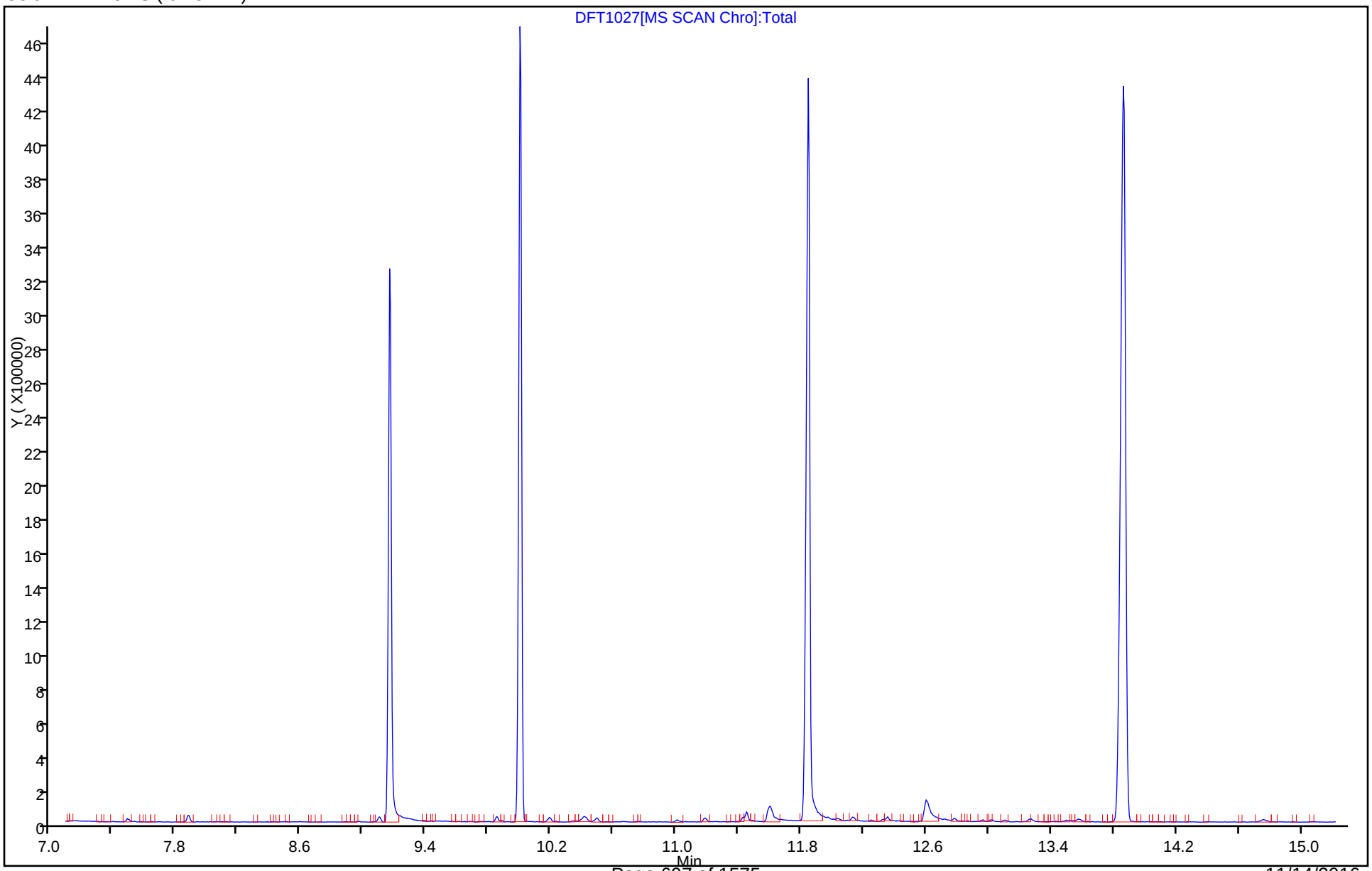
Report Date: 27-Oct-2016 14:01:25 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D

Injection Date:	27-Oct-2016 09:52:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	DFTPP			Worklist Smp#:	1
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	96
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)

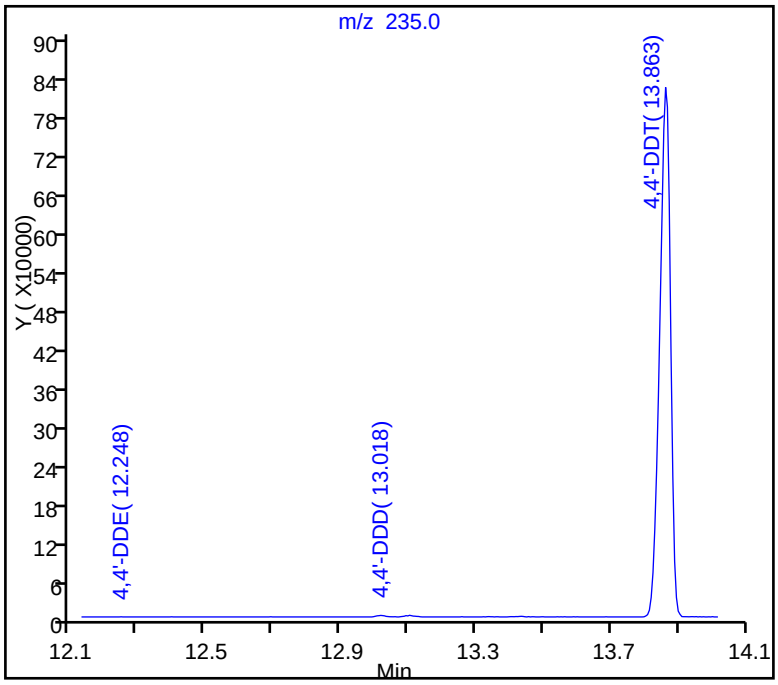


Breakdown Report

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D
Injection Date: 27-Oct-2016 09:52:30 Instrument ID: SV5
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

169 4,4'-DDT, Detector: MS SCAN



SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

169 4,4'-DDT, Area = 1821309
168 4,4'-DDD, Area = 4356
167 4,4'-DDE, Area = 1636

%Breakdown: 0.33%, Max Limit: 20.00%
Passed

Peak Tailing Report

TestAmerica Sacramento

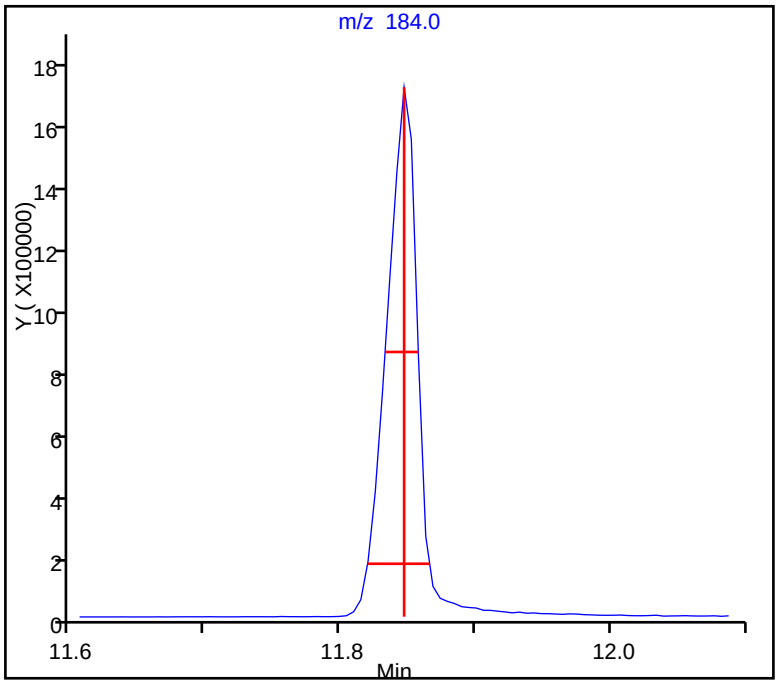
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D
Injection Date: 27-Oct-2016 09:52:30 Instrument ID: SV5
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

166 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.019 (min.)
Front Width = 0.027 (min.)

Tailing Factor = 0.7, Max. Tailing < 2.00
Passed



Peak Tailing Report

TestAmerica Sacramento

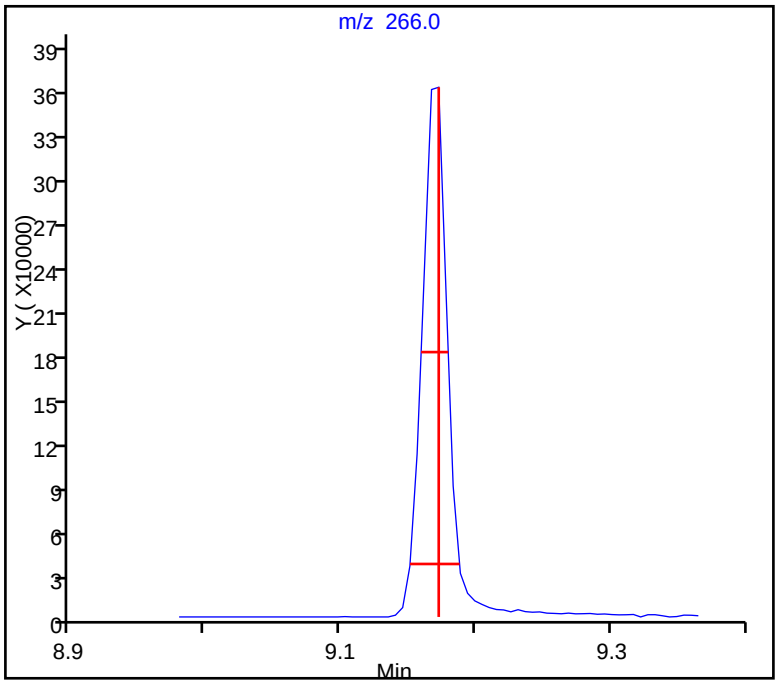
Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\DFT1027.D
Injection Date: 27-Oct-2016 09:52:30 Instrument ID: SV5
Lims ID: DFTPP
Client ID:
Operator ID: ALS Bottle#: 96 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8270C_SV5 Limit Group: MSS - 8270DoD - ICAL

164 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.015 (min.)
Front Width = 0.021 (min.)

Tailing Factor = 0.7, Max. Tailing < 2.00
Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-134119/1-A

Matrix: Water | Lab File ID: S102710.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) | Date Analyzed: 10/27/2016 15:19

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
83-32-9	Acenaphthene	3.0	U	10	3.0	1.1
208-96-8	Acenaphthylene	3.0	U	10	3.0	1.1
120-12-7	Anthracene	3.0	U	10	3.0	1.0
103-33-3	Azobenzene	3.0	U	10	3.0	1.0
56-55-3	Benzo[a]anthracene	3.0	U	10	3.0	1.0
205-99-2	Benzo[b]fluoranthene	3.0	U	10	3.0	1.2
207-08-9	Benzo[k]fluoranthene	3.0	U	10	3.0	0.96
65-85-0	Benzoic acid	50	U	75	50	20
191-24-2	Benzo[g,h,i]perylene	3.0	U	10	3.0	1.4
50-32-8	Benzo[a]pyrene	3.0	U	10	3.0	1.0
100-51-6	Benzyl alcohol	6.0	U	10	6.0	2.6
111-91-1	Bis(2-chloroethoxy)methane	3.0	U	10	3.0	1.0
111-44-4	Bis(2-chloroethyl)ether	3.0	U	10	3.0	1.5
108-60-1	2,2'-oxybis[1-chloropropane]	3.0	U	10	3.0	1.3
117-81-7	Bis(2-ethylhexyl) phthalate	3.0	U	10	3.0	1.0
101-55-3	4-Bromophenyl phenyl ether	3.0	U	10	3.0	1.1
85-68-7	Butyl benzyl phthalate	3.0	U	10	3.0	1.4
86-74-8	Carbazole	3.0	U	10	3.0	1.2
106-47-8	4-Chloroaniline	6.0	U	10	6.0	2.0
59-50-7	4-Chloro-3-methylphenol	6.0	U	10	6.0	2.0
95-57-8	2-Chlorophenol	6.0	U	10	6.0	1.6
91-58-7	2-Chloronaphthalene	3.0	U	10	3.0	1.3
7005-72-3	4-Chlorophenyl phenyl ether	3.0	U	10	3.0	1.1
218-01-9	Chrysene	3.0	U	10	3.0	1.0
53-70-3	Dibenz(a,h)anthracene	6.0	U	10	6.0	2.0
132-64-9	Dibenzofuran	3.0	U	10	3.0	1.1
84-74-2	Di-n-butyl phthalate	3.0	U	10	3.0	1.1
95-50-1	1,2-Dichlorobenzene	3.0	U	10	3.0	1.5
541-73-1	1,3-Dichlorobenzene	3.0	U	10	3.0	1.5
106-46-7	1,4-Dichlorobenzene	3.0	U	10	3.0	1.4
91-94-1	3,3'-Dichlorobenzidine	3.0	U	50	3.0	0.96
120-83-2	2,4-Dichlorophenol	6.0	U	10	6.0	2.6
84-66-2	Diethyl phthalate	3.0	U	10	3.0	0.93
105-67-9	2,4-Dimethylphenol	6.0	U	10	6.0	2.2

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-134119/1-A

Matrix: Water | Lab File ID: S102710.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) | Date Analyzed: 10/27/2016 15:19

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
131-11-3	Dimethyl phthalate	3.0	U	10	3.0	0.88
534-52-1	4,6-Dinitro-2-methylphenol	6.0	U	60	6.0	2.2
51-28-5	2,4-Dinitrophenol	50	U	60	50	20
121-14-2	2,4-Dinitrotoluene	6.0	U	10	6.0	2.0
606-20-2	2,6-Dinitrotoluene	6.0	U	10	6.0	2.0
117-84-0	Di-n-octyl phthalate	3.0	U	10	3.0	1.5
206-44-0	Fluoranthene	3.0	U	10	3.0	1.0
86-73-7	Fluorene	3.0	U	10	3.0	0.93
118-74-1	Hexachlorobenzene	3.0	U	10	3.0	1.4
87-68-3	Hexachlorobutadiene	3.0	U	10	3.0	1.3
67-72-1	Hexachloroethane	3.0	U	10	3.0	1.4
193-39-5	Indeno[1,2,3-cd]pyrene	10	U	15	10	3.4
78-59-1	Isophorone	3.0	U	10	3.0	1.0
91-57-6	2-Methylnaphthalene	3.0	U	10	3.0	1.5
95-48-7	2-Methylphenol	3.0	U	10	3.0	0.93
15831-10-4	3 & 4 Methylphenol	3.0	U	10	3.0	1.2
91-20-3	Naphthalene	3.0	U	10	3.0	1.3
88-74-4	2-Nitroaniline	6.0	U	50	6.0	2.0
99-09-2	3-Nitroaniline	3.0	U	50	3.0	1.4
100-01-6	4-Nitroaniline	3.0	U	50	3.0	1.5
98-95-3	Nitrobenzene	6.0	U	10	6.0	1.6
88-75-5	2-Nitrophenol	6.0	U	10	6.0	1.9
100-02-7	4-Nitrophenol	20	U	60	20	6.1
62-75-9	N-Nitrosodimethylamine	3.0	U	15	3.0	0.96
86-30-6	N-Nitrosodiphenylamine	3.0	U	10	3.0	1.0
621-64-7	N-Nitrosodi-n-propylamine	3.0	U	10	3.0	1.4
87-86-5	Pentachlorophenol	20	U	60	20	5.0
85-01-8	Phenanthrene	3.0	U	10	3.0	1.0
108-95-2	Phenol	3.0	U	10	3.0	1.1
129-00-0	Pyrene	3.0	U	10	3.0	1.4
120-82-1	1,2,4-Trichlorobenzene	3.0	U	10	3.0	1.4
95-95-4	2,4,5-Trichlorophenol	6.0	U	10	6.0	2.0
88-06-2	2,4,6-Trichlorophenol	6.0	U	10	6.0	2.0

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-134119/1-A

Matrix: Water Lab File ID: S102710.D

Analysis Method: 8270D Date Collected:

Extract. Method: 3510C Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) Date Analyzed: 10/27/2016 15:19

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	77		43-140
321-60-8	2-Fluorobiphenyl (Surr)	77		44-119
367-12-4	2-Fluorophenol (Surr)	49		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	75		44-120
4165-62-2	Phenol-d5 (Surr)	33		10-50
1718-51-0	Terphenyl-d14 (Surr)	86		50-134

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102710.D
Lims ID: MB 320-134119/1-A
Client ID:
Sample Type: MB
Inject. Date: 27-Oct-2016 15:19:30 ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-134119/1-a
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:00:36 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:00:36

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.660	5.660	0.000	99	265901	40.0	40.0	
* 2 Naphthalene-d8	136	6.612	6.612	0.000	100	986199	40.0	40.0	
* 3 Acenaphthene-d10	164	7.987	7.987	0.000	100	596813	40.0	40.0	
* 4 Phenanthrene-d10	188	9.324	9.324	0.000	100	1054446	40.0	40.0	
* 5 Chrysene-d12	240	12.549	12.555	-0.006	100	1096194	40.0	40.0	
* 6 Perylene-d12	264	16.159	16.160	-0.001	100	1112067	40.0	40.0	
$ 7 2-Fluorophenol	112	4.510	4.510	0.000	0	228150	50.0	24.7	
$ 8 Phenol-d5	99	5.350	5.355	-0.005	0	184054	50.0	16.4	
$ 10 Nitrobenzene-d5	82	6.072	6.077	-0.005	0	411102	50.0	37.7	
$ 11 2-Fluorobiphenyl (Surr)	172	7.409	7.409	0.000	0	738532	50.0	38.6	
$ 12 2,4,6-Tribromophenol	330	8.677	8.682	-0.005	0	104940	50.0	38.6	
$ 13 Terphenyl-d14	244	10.902	10.907	-0.005	0	947821	50.0	43.1	

Reagents:

MS8270IS_00014 Amount Added: 20.00 Units: uL Run Reagent

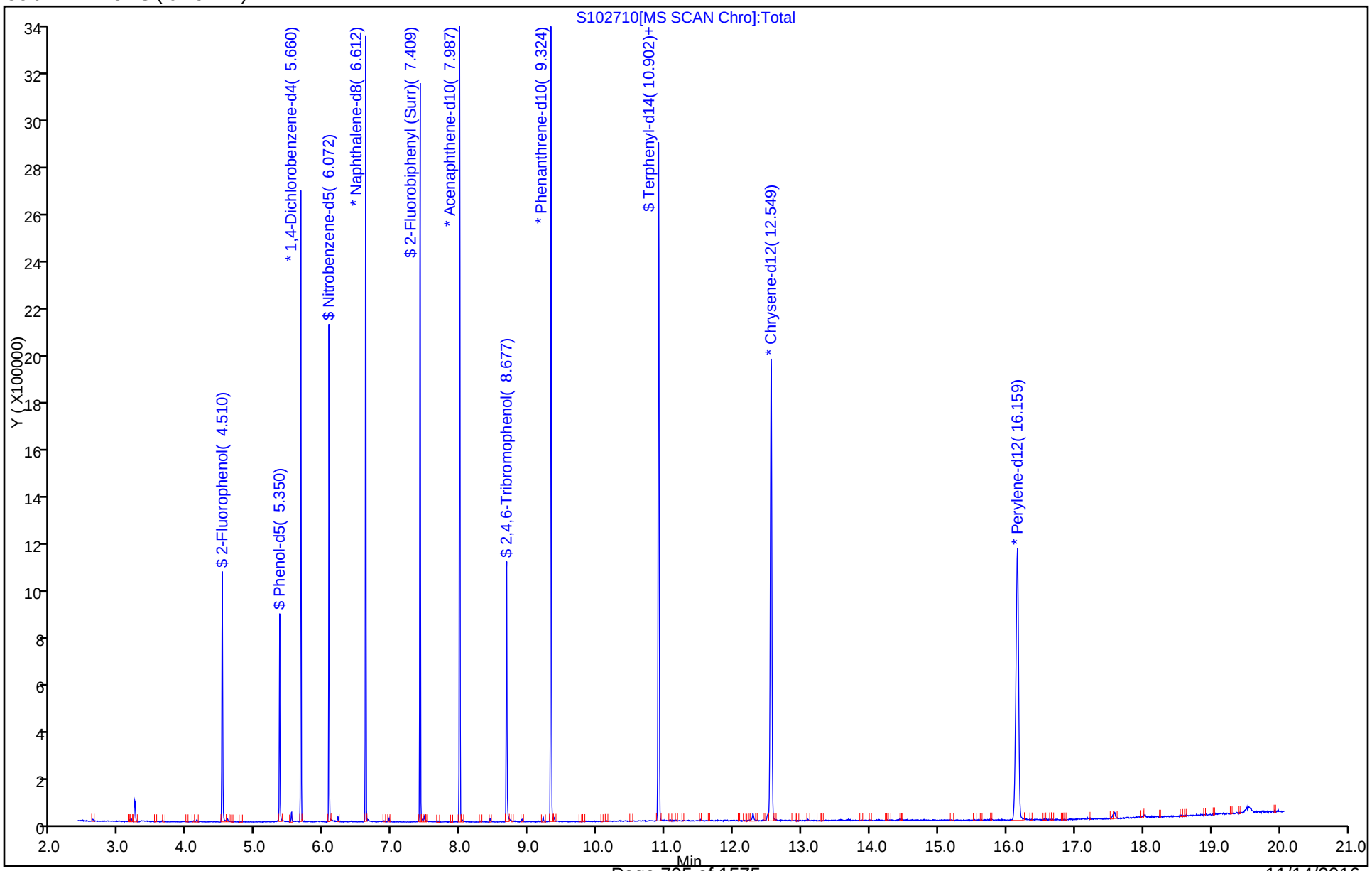
Report Date: 28-Oct-2016 14:00:37 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102710.D

Injection Date:	27-Oct-2016 15:19:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	MB 320-134119/1-A			Worklist Smp#:	13
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102710.D
Lims ID: MB 320-134119/1-A
Client ID:
Sample Type: MB
Inject. Date: 27-Oct-2016 15:19:30 ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-134119/1-a
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:00:36 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:00:36

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 2-Fluorophenol	50.0	24.7	49.34
$ 8 Phenol-d5	50.0	16.4	32.80
$ 10 Nitrobenzene-d5	50.0	37.7	75.42
$ 11 2-Fluorobiphenyl (Surr)	50.0	38.6	77.11
$ 12 2,4,6-Tribromophenol	50.0	38.6	77.13
$ 13 Terphenyl-d14	50.0	43.1	86.15

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-134119/2-A

Matrix: Water | Lab File ID: S102711.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) | Date Analyzed: 10/27/2016 15:47

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
83-32-9	Acenaphthene	76.3		10	3.0	1.1
208-96-8	Acenaphthylene	74.4		10	3.0	1.1
120-12-7	Anthracene	78.1		10	3.0	1.0
103-33-3	Azobenzene	75.2		10	3.0	1.0
56-55-3	Benzo[a]anthracene	83.9		10	3.0	1.0
205-99-2	Benzo[b]fluoranthene	84.5		10	3.0	1.2
207-08-9	Benzo[k]fluoranthene	81.4		10	3.0	0.96
65-85-0	Benzoic acid	28.8	J	75	50	20
191-24-2	Benzo[g,h,i]perylene	85.7		10	3.0	1.4
50-32-8	Benzo[a]pyrene	86.9		10	3.0	1.0
100-51-6	Benzyl alcohol	68.8		10	6.0	2.6
111-91-1	Bis(2-chloroethoxy)methane	74.5		10	3.0	1.0
111-44-4	Bis(2-chloroethyl)ether	71.6		10	3.0	1.5
108-60-1	2,2'-oxybis[1-chloropropane]	82.2		10	3.0	1.3
117-81-7	Bis(2-ethylhexyl) phthalate	88.7		10	3.0	1.0
101-55-3	4-Bromophenyl phenyl ether	79.7		10	3.0	1.1
85-68-7	Butyl benzyl phthalate	87.6		10	3.0	1.4
86-74-8	Carbazole	80.4		10	3.0	1.2
106-47-8	4-Chloroaniline	73.7		10	6.0	2.0
59-50-7	4-Chloro-3-methylphenol	82.7		10	6.0	2.0
95-57-8	2-Chlorophenol	72.1		10	6.0	1.6
91-58-7	2-Chloronaphthalene	77.1		10	3.0	1.3
7005-72-3	4-Chlorophenyl phenyl ether	83.3		10	3.0	1.1
218-01-9	Chrysene	83.5		10	3.0	1.0
53-70-3	Dibenz(a,h)anthracene	84.9		10	6.0	2.0
132-64-9	Dibenzofuran	75.7		10	3.0	1.1
84-74-2	Di-n-butyl phthalate	82.0		10	3.0	1.1
95-50-1	1,2-Dichlorobenzene	67.1		10	3.0	1.5
541-73-1	1,3-Dichlorobenzene	65.5		10	3.0	1.5
106-46-7	1,4-Dichlorobenzene	66.2		10	3.0	1.4
91-94-1	3,3'-Dichlorobenzidine	85.8		50	3.0	0.96
120-83-2	2,4-Dichlorophenol	82.3		10	6.0	2.6
84-66-2	Diethyl phthalate	86.2		10	3.0	0.93
105-67-9	2,4-Dimethylphenol	80.4		10	6.0	2.2

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-134119/2-A

Matrix: Water | Lab File ID: S102711.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) | Date Analyzed: 10/27/2016 15:47

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
131-11-3	Dimethyl phthalate	85.7		10	3.0	0.88
534-52-1	4,6-Dinitro-2-methylphenol	166		60	6.0	2.2
51-28-5	2,4-Dinitrophenol	134		60	50	20
121-14-2	2,4-Dinitrotoluene	91.3		10	6.0	2.0
606-20-2	2,6-Dinitrotoluene	86.7		10	6.0	2.0
117-84-0	Di-n-octyl phthalate	88.3		10	3.0	1.5
206-44-0	Fluoranthene	81.8		10	3.0	1.0
86-73-7	Fluorene	77.2		10	3.0	0.93
118-74-1	Hexachlorobenzene	79.9		10	3.0	1.4
87-68-3	Hexachlorobutadiene	65.7		10	3.0	1.3
67-72-1	Hexachloroethane	62.0		10	3.0	1.4
193-39-5	Indeno[1,2,3-cd]pyrene	92.7		15	10	3.4
78-59-1	Isophorone	77.9		10	3.0	1.0
91-57-6	2-Methylnaphthalene	71.2		10	3.0	1.5
95-48-7	2-Methylphenol	70.1		10	3.0	0.93
15831-10-4	3 & 4 Methylphenol	65.1		10	3.0	1.2
91-20-3	Naphthalene	69.6		10	3.0	1.3
88-74-4	2-Nitroaniline	90.0		50	6.0	2.0
99-09-2	3-Nitroaniline	80.0		50	3.0	1.4
100-01-6	4-Nitroaniline	89.9		50	3.0	1.5
98-95-3	Nitrobenzene	78.6		10	6.0	1.6
88-75-5	2-Nitrophenol	84.2		10	6.0	1.9
100-02-7	4-Nitrophenol	113		60	20	6.1
62-75-9	N-Nitrosodimethylamine	48.4		15	3.0	0.96
86-30-6	N-Nitrosodiphenylamine	77.5		10	3.0	1.0
621-64-7	N-Nitrosodi-n-propylamine	75.6		10	3.0	1.4
87-86-5	Pentachlorophenol	173		60	20	5.0
85-01-8	Phenanthrene	78.0		10	3.0	1.0
108-95-2	Phenol	37.7		10	3.0	1.1
129-00-0	Pyrene	84.8		10	3.0	1.4
120-82-1	1,2,4-Trichlorobenzene	71.5		10	3.0	1.4
95-95-4	2,4,5-Trichlorophenol	89.1		10	6.0	2.0
88-06-2	2,4,6-Trichlorophenol	90.5		10	6.0	2.0

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-134119/2-A

Matrix: Water Lab File ID: S102711.D

Analysis Method: 8270D Date Collected:

Extract. Method: 3510C Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) Date Analyzed: 10/27/2016 15:47

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	94		43-140
321-60-8	2-Fluorobiphenyl (Surr)	82		44-119
367-12-4	2-Fluorophenol (Surr)	55		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	76		44-120
4165-62-2	Phenol-d5 (Surr)	36		10-50
1718-51-0	Terphenyl-d14 (Surr)	91		50-134

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102711.D
Lims ID: LCS 320-134119/2-A
Client ID:
Sample Type: LCS
Inject. Date: 27-Oct-2016 15:47:30 ALS Bottle#: 11 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-134119/2-a
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:01:31 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:01:31

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.660	5.660	0.000	98	265060	40.0	40.0	
* 2 Naphthalene-d8	136	6.612	6.612	0.000	100	1003620	40.0	40.0	
* 3 Acenaphthene-d10	164	7.992	7.987	0.005	99	597225	40.0	40.0	
* 4 Phenanthrene-d10	188	9.329	9.324	0.005	100	1085730	40.0	40.0	
* 5 Chrysene-d12	240	12.565	12.555	0.010	100	1076826	40.0	40.0	
* 6 Perylene-d12	264	16.170	16.160	0.010	100	1104582	40.0	40.0	
$ 7 2-Fluorophenol	112	4.516	4.510	0.006	0	254163	50.0	27.6	
$ 8 Phenol-d5	99	5.355	5.355	0.000	0	199201	50.0	17.8	
$ 10 Nitrobenzene-d5	82	6.077	6.077	0.000	0	423511	50.0	38.2	
$ 11 2-Fluorobiphenyl (Surr)	172	7.409	7.409	0.000	0	782161	50.0	40.8	
$ 12 2,4,6-Tribromophenol	330	8.682	8.682	0.000	0	127874	50.0	47.0	
$ 13 Terphenyl-d14	244	10.902	10.907	-0.005	0	984047	50.0	45.5	
14 1,4-Dioxane	88	2.462	2.451	0.011	0	194195	NC	NC	
15 N-Nitrosodimethylamine	74	2.815	2.809	0.006	0	338930	100.0	48.4	
16 Pyridine	79	2.884	2.874	0.010	0	548194	100.0	44.8	
25 Benzaldehyde	106	5.302	5.297	0.006	0	507677	100.0	70.9	
26 Phenol	94	5.366	5.366	0.000	0	420608	100.0	37.7	
27 Aniline	93	5.393	5.393	0.000	0	965538	100.0	68.5	
28 Bis(2-chloroethyl)ether	93	5.430	5.430	0.000	0	649325	100.0	71.6	
30 2-Chlorophenol	128	5.500	5.500	0.000	0	661594	100.0	72.1	
31 1,3-Dichlorobenzene	146	5.623	5.623	0.000	0	667562	100.0	65.5	
32 1,4-Dichlorobenzene	146	5.676	5.676	0.000	0	662349	100.0	66.2	
33 Benzyl alcohol	108	5.756	5.756	0.000	0	424953	100.0	68.8	
34 1,2-Dichlorobenzene	146	5.799	5.799	0.000	0	653035	100.0	67.1	
35 2-Methylphenol	108	5.842	5.842	0.000	0	583433	100.0	70.1	
36 2,2'-oxybis[1-chloropropan	45	5.858	5.858	0.000	0	1180671	100.0	82.2	
37 Indene	115	5.869	5.869	0.000	0	1061745	NC	NC	
39 3 & 4 Methylphenol	108	5.954	5.954	0.000	0	589548	100.0	65.1	
40 N-Nitrosodi-n-propylamine	70	5.954	5.954	0.000	0	552066	100.0	75.6	
42 Acetophenone	105	5.960	5.960	0.000	0	968347	100.0	76.7	
45 Hexachloroethane	117	6.061	6.061	0.000	0	263942	100.0	62.0	
46 Nitrobenzene	77	6.093	6.093	0.000	0	791873	100.0	78.6	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.265	6.265	0.000	0	1383711	100.0	77.9	
49 2-Nitrophenol	139	6.323	6.323	0.000	0	400134	100.0	84.2	
50 2,4-Dimethylphenol	107	6.339	6.339	0.000	0	731047	100.0	80.4	
52 Bis(2-chloroethoxy)methane	93	6.398	6.398	0.000	0	821823	100.0	74.5	
53 Benzoic acid	105	6.398	6.436	-0.038	0	111680	100.0	28.8	
55 2,4-Dichlorophenol	162	6.505	6.505	0.000	0	604174	100.0	82.3	
57 1,2,4-Trichlorobenzene	180	6.564	6.569	-0.005	0	598867	100.0	71.5	
58 Naphthalene	128	6.628	6.628	0.000	0	1669504	100.0	69.6	
59 4-Chloroaniline	127	6.650	6.650	0.000	0	819743	100.0	73.7	
60 2,6-Dichlorophenol	162	6.666	6.666	0.000	0	586075	100.0	82.2	
62 Hexachlorobutadiene	225	6.714	6.714	0.000	0	326251	100.0	65.7	
66 Caprolactam	113	6.912	6.917	-0.005	0	80809	NC	NC	
67 4-Chloro-3-methylphenol	107	6.997	6.992	0.005	0	689360	100.0	82.7	
69 2-Methylnaphthalene	142	7.142	7.142	0.000	0	1250409	100.0	71.2	
70 1-Methylnaphthalene	142	7.222	7.222	0.000	0	1184488	100.0	73.0	
71 Hexachlorocyclopentadiene	237	7.270	7.270	0.000	0	304675	100.0	56.5	
72 1,2,4,5-Tetrachlorobenzene	216	7.275	7.275	0.000	0	656446	100.0	76.8	
74 2,4,6-Trichlorophenol	196	7.356	7.356	0.000	0	492212	100.0	90.5	
75 2,4,5-Trichlorophenol	196	7.388	7.388	0.000	0	510485	100.0	89.1	
77 1,1'-Biphenyl	154	7.495	7.500	-0.005	0	1568472	100.0	74.6	
78 2-Chloronaphthalene	162	7.532	7.532	0.000	0	1262339	100.0	77.1	
80 2-Nitroaniline	65	7.591	7.591	0.000	0	550746	100.0	90.0	
84 Dimethyl phthalate	163	7.714	7.714	0.000	0	1609580	100.0	85.7	
85 1,3-Dinitrobenzene	168	7.751	7.751	0.000	0	289699	100.0	90.5	
86 2,6-Dinitrotoluene	165	7.773	7.773	0.000	0	386923	100.0	86.7	
87 Acenaphthylene	152	7.874	7.874	0.000	0	1887093	100.0	74.4	
88 3-Nitroaniline	138	7.923	7.923	0.000	0	410113	100.0	80.0	
89 2,4-Dinitrophenol	184	8.014	8.014	0.000	0	362525	200.0	133.9	
90 Acenaphthene	153	8.019	8.019	0.000	0	1250646	100.0	76.3	
91 4-Nitrophenol	109	8.046	8.051	-0.005	0	297888	200.0	112.7	
92 2,4-Dinitrotoluene	165	8.121	8.121	0.000	0	555119	100.0	91.3	
94 Dibenzofuran	168	8.163	8.163	0.000	0	1760512	100.0	75.7	
97 2,3,4,6-Tetrachlorophenol	232	8.265	8.265	0.000	0	426043	100.0	93.9	
99 Diethyl phthalate	149	8.302	8.302	0.000	0	1627845	100.0	86.2	
101 4-Chlorophenyl phenyl ethe	204	8.436	8.436	0.000	0	794443	100.0	83.3	
103 4-Nitroaniline	138	8.457	8.463	-0.006	0	468969	100.0	89.9	
104 Fluorene	166	8.463	8.468	-0.005	0	1478313	100.0	77.2	
105 4,6-Dinitro-2-methylphenol	198	8.490	8.490	0.000	0	620429	200.0	166.0	
106 N-Nitrosodiphenylamine	169	8.538	8.538	0.000	0	1188910	100.0	77.5	
107 Diphenylamine	169	8.538	8.538	0.000	0	1188910	NC	NC	
108 Azobenzene	77	8.581	8.581	0.000	0	1654561	100.0	75.2	
115 4-Bromophenyl phenyl ether	248	8.880	8.880	0.000	0	497149	100.0	79.7	
117 Hexachlorobenzene	284	8.982	8.982	0.000	0	512369	100.0	79.9	
118 Atrazine	200	8.998	8.992	0.006	0	492034	NC	NC	
120 Pentachlorophenol	266	9.147	9.147	0.000	0	587549	200.0	172.6	
125 Phenanthrene	178	9.356	9.356	0.000	0	2175189	100.0	78.0	
126 Anthracene	178	9.404	9.404	0.000	0	2252344	100.0	78.1	
127 Carbazole	167	9.533	9.533	0.000	0	2149234	100.0	80.4	
129 Di-n-butyl phthalate	149	9.811	9.811	0.000	0	2680627	100.0	82.0	
134 Fluoranthene	202	10.517	10.517	0.000	0	2599630	100.0	81.8	
135 Benzidine	184	10.613	10.613	0.000	0	1230263	100.0	52.7	
136 Pyrene	202	10.773	10.773	0.000	0	2651670	100.0	84.8	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
142 Butyl benzyl phthalate	149	11.522	11.528	-0.006	0	1420279	100.0	87.6	
147 3,3'-Dichlorobenzidine	252	12.458	12.453	0.005	0	1022087	100.0	85.8	
149 Bis(2-ethylhexyl) phthalat	149	12.512	12.512	0.000	0	1967188	100.0	88.7	
150 Benzo[a]anthracene	228	12.544	12.544	0.000	0	2634942	100.0	83.9	
151 Chrysene	228	12.619	12.619	0.000	0	2503539	100.0	83.5	
153 Di-n-octyl phthalate	149	14.004	14.004	0.000	0	3405630	100.0	88.3	
155 Benzo[b]fluoranthene	252	15.068	15.074	-0.006	0	2804140	100.0	84.5	
156 Benzo[k]fluoranthene	252	15.149	15.149	0.000	0	2661686	100.0	81.4	
157 Benzo[a]pyrene	252	16.010	16.010	0.000	0	2706245	100.0	86.9	
161 Indeno[1,2,3-cd]pyrene	276	19.032	19.026	0.006	0	2462304	100.0	92.7	
162 Dibenz(a,h)anthracene	278	19.085	19.085	0.000	0	2334196	100.0	84.9	
163 Benzo[g,h,i]perylene	276	19.631	19.631	0.000	0	2226415	100.0	85.7	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MS8270IS_00014 Amount Added: 20.00 Units: uL Run Reagent

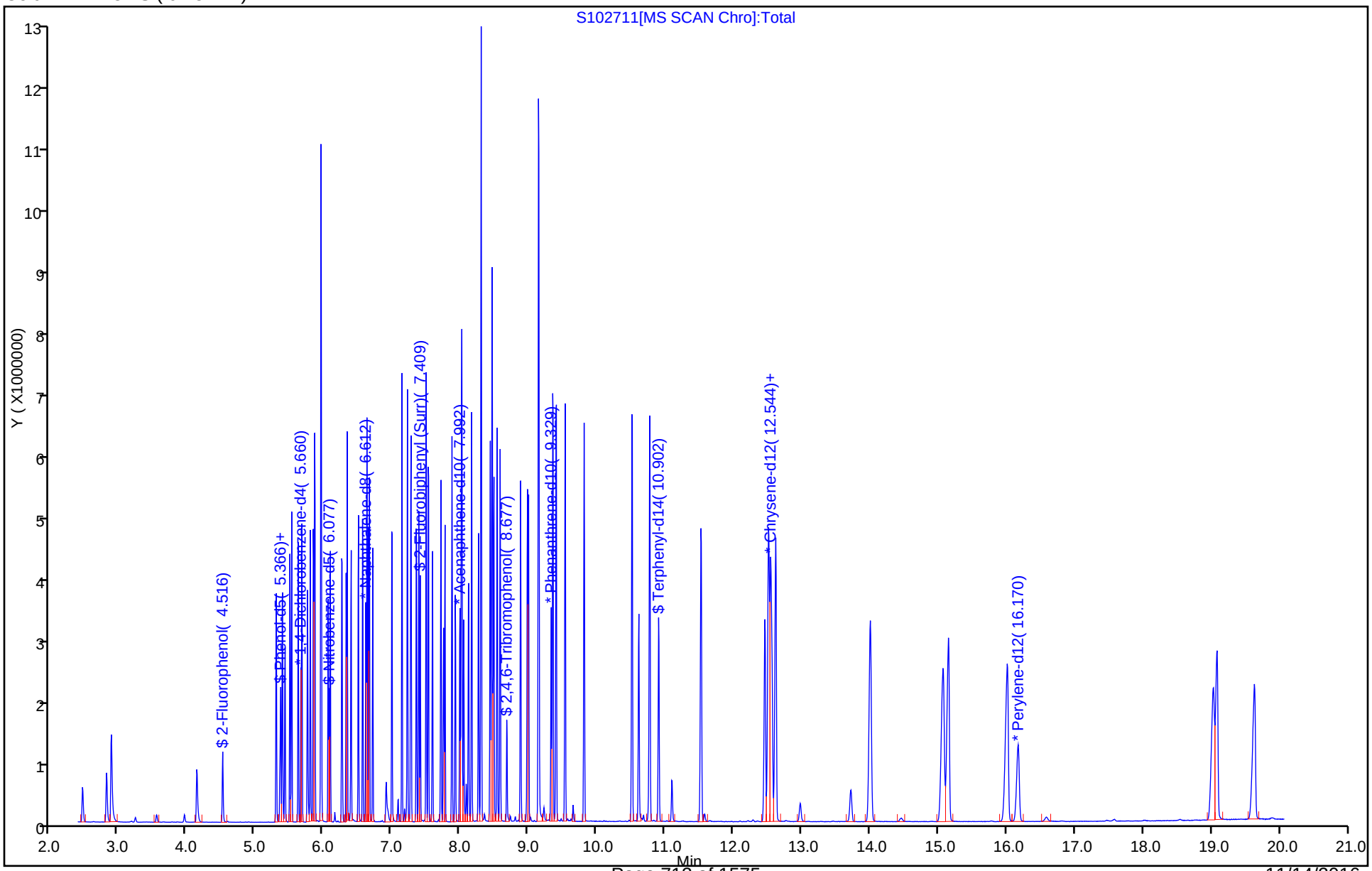
Report Date: 28-Oct-2016 14:01:32 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102711.D

Injection Date:	27-Oct-2016 15:47:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	LCS 320-134119/2-A			Worklist Smp#:	14
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102711.D
Lims ID: LCS 320-134119/2-A
Client ID:
Sample Type: LCS
Inject. Date: 27-Oct-2016 15:47:30 ALS Bottle#: 11 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-134119/2-a
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:01:31 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:01:31

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 2-Fluorophenol	50.0	27.6	55.14
$ 8 Phenol-d5	50.0	17.8	35.62
$ 10 Nitrobenzene-d5	50.0	38.2	76.35
$ 11 2-Fluorobiphenyl (Surr)	50.0	40.8	81.61
$ 12 2,4,6-Tribromophenol	50.0	47.0	93.92
$ 13 Terphenyl-d14	50.0	45.5	91.05

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-134119/3-A

Matrix: Water | Lab File ID: S102712.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) | Date Analyzed: 10/27/2016 16:15

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
83-32-9	Acenaphthene	78.4		10	3.0	1.1
208-96-8	Acenaphthylene	74.2		10	3.0	1.1
120-12-7	Anthracene	79.0		10	3.0	1.0
103-33-3	Azobenzene	76.6		10	3.0	1.0
56-55-3	Benzo[a]anthracene	84.9		10	3.0	1.0
205-99-2	Benzo[b]fluoranthene	84.4		10	3.0	1.2
207-08-9	Benzo[k]fluoranthene	80.9		10	3.0	0.96
65-85-0	Benzoic acid	33.6	J	75	50	20
191-24-2	Benzo[g,h,i]perylene	85.6		10	3.0	1.4
50-32-8	Benzo[a]pyrene	86.4		10	3.0	1.0
100-51-6	Benzyl alcohol	73.2		10	6.0	2.6
111-91-1	Bis(2-chloroethoxy)methane	76.6		10	3.0	1.0
111-44-4	Bis(2-chloroethyl)ether	76.1		10	3.0	1.5
108-60-1	2,2'-oxybis[1-chloropropane]	87.5		10	3.0	1.3
117-81-7	Bis(2-ethylhexyl) phthalate	89.1		10	3.0	1.0
101-55-3	4-Bromophenyl phenyl ether	80.2		10	3.0	1.1
85-68-7	Butyl benzyl phthalate	88.2		10	3.0	1.4
86-74-8	Carbazole	80.5		10	3.0	1.2
106-47-8	4-Chloroaniline	74.4		10	6.0	2.0
59-50-7	4-Chloro-3-methylphenol	85.1		10	6.0	2.0
95-57-8	2-Chlorophenol	77.3		10	6.0	1.6
91-58-7	2-Chloronaphthalene	78.1		10	3.0	1.3
7005-72-3	4-Chlorophenyl phenyl ether	82.3		10	3.0	1.1
218-01-9	Chrysene	83.9		10	3.0	1.0
53-70-3	Dibenz(a,h)anthracene	85.1		10	6.0	2.0
132-64-9	Dibenzofuran	75.8		10	3.0	1.1
84-74-2	Di-n-butyl phthalate	82.4		10	3.0	1.1
95-50-1	1,2-Dichlorobenzene	70.6		10	3.0	1.5
541-73-1	1,3-Dichlorobenzene	68.3		10	3.0	1.5
106-46-7	1,4-Dichlorobenzene	70.8		10	3.0	1.4
91-94-1	3,3'-Dichlorobenzidine	85.0		50	3.0	0.96
120-83-2	2,4-Dichlorophenol	86.3		10	6.0	2.6
84-66-2	Diethyl phthalate	85.6		10	3.0	0.93
105-67-9	2,4-Dimethylphenol	82.7		10	6.0	2.2

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-134119/3-A

Matrix: Water | Lab File ID: S102712.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) | Date Analyzed: 10/27/2016 16:15

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
131-11-3	Dimethyl phthalate	84.8		10	3.0	0.88
534-52-1	4,6-Dinitro-2-methylphenol	179		60	6.0	2.2
51-28-5	2,4-Dinitrophenol	158		60	50	20
121-14-2	2,4-Dinitrotoluene	90.1		10	6.0	2.0
606-20-2	2,6-Dinitrotoluene	90.2		10	6.0	2.0
117-84-0	Di-n-octyl phthalate	88.1		10	3.0	1.5
206-44-0	Fluoranthene	82.6		10	3.0	1.0
86-73-7	Fluorene	78.1		10	3.0	0.93
118-74-1	Hexachlorobenzene	80.2		10	3.0	1.4
87-68-3	Hexachlorobutadiene	68.8		10	3.0	1.3
67-72-1	Hexachloroethane	65.7		10	3.0	1.4
193-39-5	Indeno[1,2,3-cd]pyrene	88.6		15	10	3.4
78-59-1	Isophorone	79.7		10	3.0	1.0
91-57-6	2-Methylnaphthalene	73.4		10	3.0	1.5
95-48-7	2-Methylphenol	74.6		10	3.0	0.93
15831-10-4	3 & 4 Methylphenol	67.9		10	3.0	1.2
91-20-3	Naphthalene	72.6		10	3.0	1.3
88-74-4	2-Nitroaniline	90.4		50	6.0	2.0
99-09-2	3-Nitroaniline	75.9		50	3.0	1.4
100-01-6	4-Nitroaniline	86.6		50	3.0	1.5
98-95-3	Nitrobenzene	82.5		10	6.0	1.6
88-75-5	2-Nitrophenol	88.4		10	6.0	1.9
100-02-7	4-Nitrophenol	115		60	20	6.1
62-75-9	N-Nitrosodimethylamine	51.1		15	3.0	0.96
86-30-6	N-Nitrosodiphenylamine	78.1		10	3.0	1.0
621-64-7	N-Nitrosodi-n-propylamine	81.0		10	3.0	1.4
87-86-5	Pentachlorophenol	177		60	20	5.0
85-01-8	Phenanthrene	79.7		10	3.0	1.0
108-95-2	Phenol	40.1		10	3.0	1.1
129-00-0	Pyrene	86.0		10	3.0	1.4
120-82-1	1,2,4-Trichlorobenzene	76.3		10	3.0	1.4
95-95-4	2,4,5-Trichlorophenol	87.1		10	6.0	2.0
88-06-2	2,4,6-Trichlorophenol	91.5		10	6.0	2.0

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-134119/3-A

Matrix: Water | Lab File ID: S102712.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3510C | Date Extracted: 10/24/2016 10:38

Sample wt/vol: 1000(mL) | Date Analyzed: 10/27/2016 16:15

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 134817 | Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	92		43-140
321-60-8	2-Fluorobiphenyl (Surr)	80		44-119
367-12-4	2-Fluorophenol (Surr)	56		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	79		44-120
4165-62-2	Phenol-d5 (Surr)	37		10-50
1718-51-0	Terphenyl-d14 (Surr)	90		50-134

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102712.D
Lims ID: LCSD 320-134119/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 27-Oct-2016 16:15:30 ALS Bottle#: 12 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-134119/3-a
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:01:59 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:01:58

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.665	5.660	0.005	98	265313	40.0	40.0	
* 2 Naphthalene-d8	136	6.612	6.612	0.000	100	1012507	40.0	40.0	
* 3 Acenaphthene-d10	164	7.992	7.987	0.005	100	607040	40.0	40.0	
* 4 Phenanthrene-d10	188	9.329	9.324	0.005	100	1086897	40.0	40.0	
* 5 Chrysene-d12	240	12.565	12.555	0.010	100	1074327	40.0	40.0	
* 6 Perylene-d12	264	16.170	16.160	0.010	100	1108311	40.0	40.0	
$ 7 2-Fluorophenol	112	4.516	4.510	0.006	0	257423	50.0	27.9	
$ 8 Phenol-d5	99	5.355	5.355	0.000	0	205958	50.0	18.4	
$ 10 Nitrobenzene-d5	82	6.077	6.077	0.000	0	442313	50.0	39.5	
$ 11 2-Fluorobiphenyl (Surr)	172	7.409	7.409	0.000	0	783324	50.0	40.2	
$ 12 2,4,6-Tribromophenol	330	8.682	8.682	0.000	0	127903	50.0	46.2	
$ 13 Terphenyl-d14	244	10.902	10.907	-0.005	0	971666	50.0	45.1	
14 1,4-Dioxane	88	2.462	2.451	0.011	0	203708	NC	NC	
15 N-Nitrosodimethylamine	74	2.815	2.809	0.006	0	358073	100.0	51.1	
16 Pyridine	79	2.884	2.874	0.010	0	582655	100.0	47.5	
25 Benzaldehyde	106	5.302	5.297	0.006	0	544640	100.0	76.0	
26 Phenol	94	5.366	5.366	0.000	0	447641	100.0	40.1	
27 Aniline	93	5.393	5.393	0.000	0	1020927	100.0	72.4	
28 Bis(2-chloroethyl)ether	93	5.430	5.430	0.000	0	690953	100.0	76.1	
30 2-Chlorophenol	128	5.500	5.500	0.000	0	709754	100.0	77.3	
31 1,3-Dichlorobenzene	146	5.623	5.623	0.000	0	696262	100.0	68.3	
32 1,4-Dichlorobenzene	146	5.676	5.676	0.000	0	708333	100.0	70.8	
33 Benzyl alcohol	108	5.756	5.756	0.000	0	452565	100.0	73.2	
34 1,2-Dichlorobenzene	146	5.799	5.799	0.000	0	687416	100.0	70.6	
35 2-Methylphenol	108	5.842	5.842	0.000	0	621107	100.0	74.6	
36 2,2'-oxybis[1-chloropropan	45	5.858	5.858	0.000	0	1257738	100.0	87.5	
37 Indene	115	5.869	5.869	0.000	0	1128909	NC	NC	
39 3 & 4 Methylphenol	108	5.954	5.954	0.000	0	615503	100.0	67.9	
40 N-Nitrosodi-n-propylamine	70	5.954	5.954	0.000	0	592285	100.0	81.0	
42 Acetophenone	105	5.960	5.960	0.000	0	1038974	100.0	81.6	
45 Hexachloroethane	117	6.061	6.061	0.000	0	279931	100.0	65.7	
46 Nitrobenzene	77	6.093	6.093	0.000	0	838240	100.0	82.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 Isophorone	82	6.265	6.265	0.000	0	1427479	100.0	79.7	
49 2-Nitrophenol	139	6.323	6.323	0.000	0	423713	100.0	88.4	
50 2,4-Dimethylphenol	107	6.339	6.339	0.000	0	758625	100.0	82.7	
52 Bis(2-chloroethoxy)methane	93	6.398	6.398	0.000	0	852763	100.0	76.6	
53 Benzoic acid	105	6.404	6.436	-0.032	0	135425	100.0	33.6	
55 2,4-Dichlorophenol	162	6.505	6.505	0.000	0	639138	100.0	86.3	
57 1,2,4-Trichlorobenzene	180	6.569	6.569	0.000	0	644737	100.0	76.3	
58 Naphthalene	128	6.628	6.628	0.000	0	1757479	100.0	72.6	
59 4-Chloroaniline	127	6.650	6.650	0.000	0	834402	100.0	74.4	
60 2,6-Dichlorophenol	162	6.666	6.666	0.000	0	611249	100.0	85.0	
62 Hexachlorobutadiene	225	6.714	6.714	0.000	0	344644	100.0	68.8	
66 Caprolactam	113	6.912	6.917	-0.005	0	80981	NC	NC	
67 4-Chloro-3-methylphenol	107	6.997	6.992	0.005	0	715537	100.0	85.1	
69 2-Methylnaphthalene	142	7.142	7.142	0.000	0	1299728	100.0	73.4	
70 1-Methylnaphthalene	142	7.222	7.222	0.000	0	1219739	100.0	74.5	
71 Hexachlorocyclopentadiene	237	7.270	7.270	0.000	0	312142	100.0	56.9	
72 1,2,4,5-Tetrachlorobenzene	216	7.275	7.275	0.000	0	683410	100.0	78.6	
74 2,4,6-Trichlorophenol	196	7.356	7.356	0.000	0	505564	100.0	91.5	
75 2,4,5-Trichlorophenol	196	7.388	7.388	0.000	0	507150	100.0	87.1	
77 1,1'-Biphenyl	154	7.500	7.500	0.000	0	1607181	100.0	75.2	
78 2-Chloronaphthalene	162	7.532	7.532	0.000	0	1299205	100.0	78.1	
80 2-Nitroaniline	65	7.591	7.591	0.000	0	562007	100.0	90.4	
84 Dimethyl phthalate	163	7.714	7.714	0.000	0	1618956	100.0	84.8	
85 1,3-Dinitrobenzene	168	7.757	7.751	0.006	0	300136	100.0	92.2	
86 2,6-Dinitrotoluene	165	7.773	7.773	0.000	0	409086	100.0	90.2	
87 Acenaphthylene	152	7.874	7.874	0.000	0	1912784	100.0	74.2	
88 3-Nitroaniline	138	7.923	7.923	0.000	0	395845	100.0	75.9	
89 2,4-Dinitrophenol	184	8.014	8.014	0.000	0	436080	200.0	158.4	
90 Acenaphthene	153	8.019	8.019	0.000	0	1306158	100.0	78.4	
91 4-Nitrophenol	109	8.046	8.051	-0.005	0	309790	200.0	115.3	
92 2,4-Dinitrotoluene	165	8.121	8.121	-0.001	0	557109	100.0	90.1	
94 Dibenzofuran	168	8.163	8.163	0.000	0	1793526	100.0	75.8	
97 2,3,4,6-Tetrachlorophenol	232	8.265	8.265	0.000	0	420107	100.0	91.0	
99 Diethyl phthalate	149	8.302	8.302	0.000	0	1643438	100.0	85.6	
101 4-Chlorophenyl phenyl ethe	204	8.436	8.436	0.000	0	798546	100.0	82.3	
103 4-Nitroaniline	138	8.463	8.463	0.000	0	458881	100.0	86.6	
104 Fluorene	166	8.468	8.468	0.000	0	1520371	100.0	78.1	
105 4,6-Dinitro-2-methylphenol	198	8.490	8.490	0.000	0	668849	200.0	178.7	
106 N-Nitrosodiphenylamine	169	8.538	8.538	0.000	0	1199962	100.0	78.1	
107 Diphenylamine	169	8.538	8.538	0.000	0	1199962	NC	NC	
108 Azobenzene	77	8.580	8.581	0.000	0	1686383	100.0	76.6	
115 4-Bromophenyl phenyl ether	248	8.880	8.880	0.000	0	500798	100.0	80.2	
117 Hexachlorobenzene	284	8.982	8.982	0.000	0	514492	100.0	80.2	
118 Atrazine	200	8.998	8.992	0.006	0	505524	NC	NC	
120 Pentachlorophenol	266	9.147	9.147	0.000	0	604467	200.0	177.4	
125 Phenanthrene	178	9.356	9.356	0.000	0	2225812	100.0	79.7	
126 Anthracene	178	9.404	9.404	0.000	0	2280451	100.0	79.0	
127 Carbazole	167	9.533	9.533	0.000	0	2152773	100.0	80.5	
129 Di-n-butyl phthalate	149	9.811	9.811	0.000	0	2697940	100.0	82.4	
134 Fluoranthene	202	10.517	10.517	0.000	0	2628340	100.0	82.6	
135 Benzidine	184	10.613	10.613	0.000	0	1162804	100.0	49.9	
136 Pyrene	202	10.773	10.773	0.000	0	2681281	100.0	86.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
142 Butyl benzyl phthalate	149	11.528	11.528	0.000	0	1426713	100.0	88.2	
147 3,3'-Dichlorobenzidine	252	12.458	12.453	0.005	0	1010841	100.0	85.0	
149 Bis(2-ethylhexyl) phthalat	149	12.512	12.512	0.000	0	1972273	100.0	89.1	
150 Benzo[a]anthracene	228	12.544	12.544	0.000	0	2660616	100.0	84.9	
151 Chrysene	228	12.619	12.619	0.000	0	2508704	100.0	83.9	
153 Di-n-octyl phthalate	149	14.004	14.004	0.000	0	3387408	100.0	88.1	
155 Benzo[b]fluoranthene	252	15.074	15.074	0.000	0	2810476	100.0	84.4	
156 Benzo[k]fluoranthene	252	15.149	15.149	0.000	0	2655814	100.0	80.9	
157 Benzo[a]pyrene	252	16.010	16.010	0.000	0	2699421	100.0	86.4	
161 Indeno[1,2,3-cd]pyrene	276	19.032	19.026	0.006	0	2362095	100.0	88.6	
162 Dibenz(a,h)anthracene	278	19.085	19.085	0.000	0	2346772	100.0	85.1	
163 Benzo[g,h,i]perylene	276	19.636	19.631	0.005	0	2230615	100.0	85.6	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MS8270IS_00014 Amount Added: 20.00 Units: uL Run Reagent

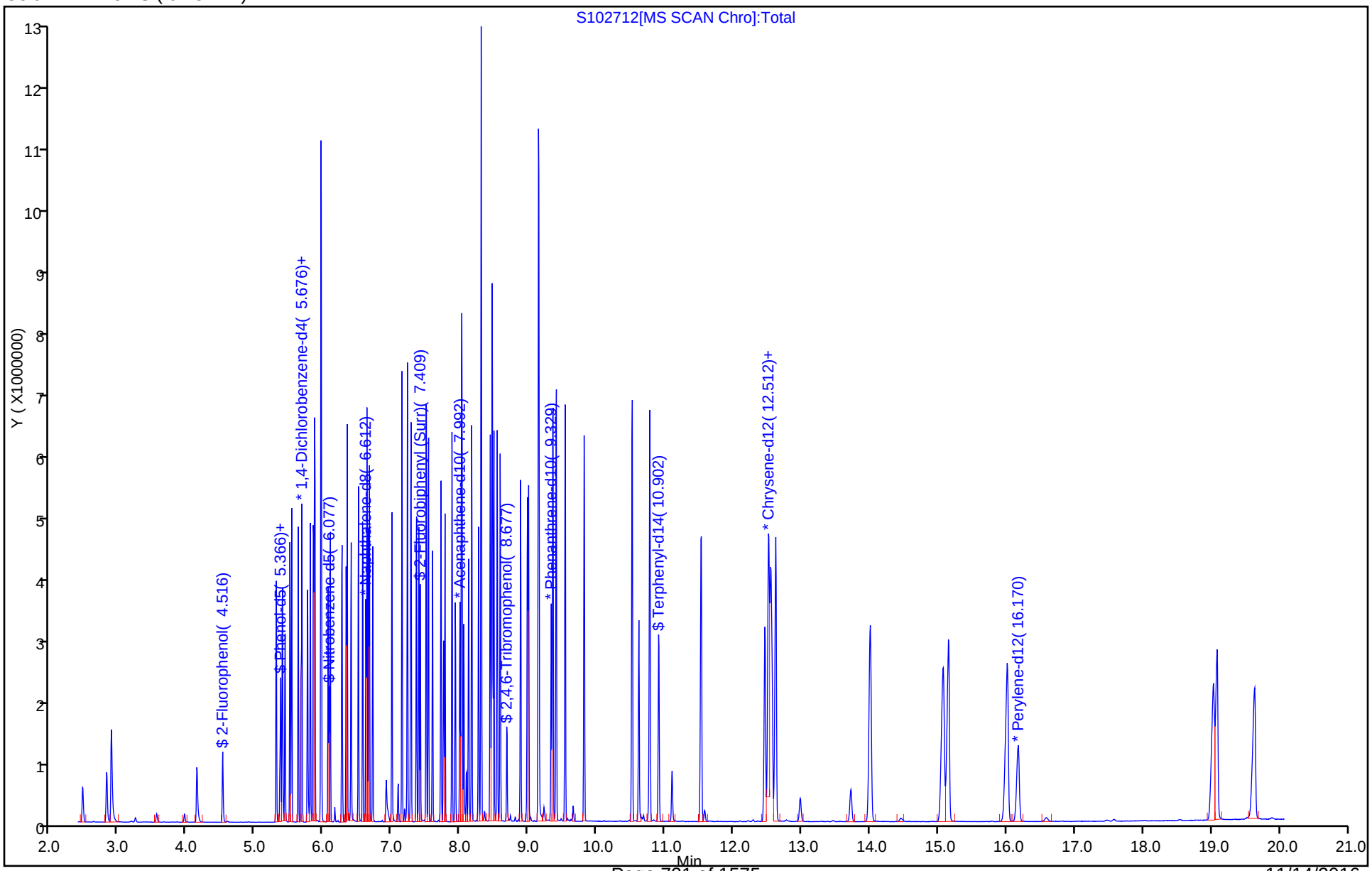
Report Date: 28-Oct-2016 14:02:00 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102712.D

Injection Date:	27-Oct-2016 16:15:30	Instrument ID:	SV5	Operator ID:	
Lims ID:	LCSD 320-134119/3-A			Worklist Smp#:	15
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	12
Method:	8270C_SV5	Limit Group:	MSS - 8270DoD - ICAL		

Column: HP-5MS (0.25 mm)



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\S102712.D
Lims ID: LCSD 320-134119/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 27-Oct-2016 16:15:30 ALS Bottle#: 12 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-134119/3-a
Operator ID: Instrument ID: SV5

Method: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b\8270C_SV5.m
Limit Group: MSS - 8270DoD - ICAL
Last Update: 28-Oct-2016 14:01:59 Calib Date: 26-Oct-2016 17:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\SV5\20161026-36146.b\KEP1026H.D

Column 1 : HP-5MS (0.25 mm) Det: MS SCAN
Process Host: XAWRK024

First Level Reviewer: onishim Date: 28-Oct-2016 14:01:58

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 2-Fluorophenol	50.0	27.9	55.79
$ 8 Phenol-d5	50.0	18.4	36.79
$ 10 Nitrobenzene-d5	50.0	39.5	79.04
$ 11 2-Fluorobiphenyl (Surr)	50.0	40.2	80.41
$ 12 2,4,6-Tribromophenol	50.0	46.2	92.42
$ 13 Terphenyl-d14	50.0	45.1	90.11

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: SV5 Start Date: 10/05/2016 10:14

Analysis Batch Number: 130823 End Date: 10/05/2016 19:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 320-130823/1		10/05/2016 10:14	1	DFT1005.D	HP-5MS 0.25(mm)
IC 320-130823/2		10/05/2016 10:35	1	ODD1005A.D	HP-5MS 0.25(mm)
IC 320-130823/3		10/05/2016 11:03	1	ODD1005B.D	HP-5MS 0.25(mm)
IC 320-130823/4		10/05/2016 11:31	1	ODD1005C.D	HP-5MS 0.25(mm)
IC 320-130823/5		10/05/2016 11:58	1	ODD1005D.D	HP-5MS 0.25(mm)
IC 320-130823/6		10/05/2016 12:26	1	ODD1005E.D	HP-5MS 0.25(mm)
IC 320-130823/7		10/05/2016 12:53	1	ODD1005F.D	HP-5MS 0.25(mm)
IC 320-130823/8		10/05/2016 13:21	1	ODD1005G.D	HP-5MS 0.25(mm)
IC 320-130823/9		10/05/2016 13:49	1	ODD1005H.D	HP-5MS 0.25(mm)
IC 320-130823/10		10/05/2016 14:16	1	ODD1005I.D	HP-5MS 0.25(mm)
ICV 320-130823/11		10/05/2016 14:46	1	ODD1005.D	HP-5MS 0.25(mm)
IC 320-130823/12		10/05/2016 15:14	1	HSL1005A.D	HP-5MS 0.25(mm)
IC 320-130823/13		10/05/2016 15:41	1	HSL1005B.D	HP-5MS 0.25(mm)
IC 320-130823/14		10/05/2016 16:09	1	HSL1005C.D	HP-5MS 0.25(mm)
IC 320-130823/15		10/05/2016 16:37	1	HSL1005D.D	HP-5MS 0.25(mm)
IC 320-130823/16		10/05/2016 17:04	1	HSL1005E.D	HP-5MS 0.25(mm)
IC 320-130823/17		10/05/2016 17:32	1	HSL1005F.D	HP-5MS 0.25(mm)
ICIS 320-130823/18		10/05/2016 18:00	1	HSL1005G.D	HP-5MS 0.25(mm)
IC 320-130823/19		10/05/2016 18:27	1	HSL1005H.D	HP-5MS 0.25(mm)
IC 320-130823/20		10/05/2016 18:55	1	HSL1005I.D	HP-5MS 0.25(mm)
IC 320-130823/21		10/05/2016 19:23	1	HSL1005J.D	HP-5MS 0.25(mm)
ICV 320-130823/22		10/05/2016 19:58	1	HSL1005.D	HP-5MS 0.25(mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: SV5 Start Date: 10/27/2016 09:52

Analysis Batch Number: 134817 End Date: 10/27/2016 18:09

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 320-134817/1		10/27/2016 09:52	1	DFT1027.D	HP-5MS 0.25(mm)
CCV 320-134817/2		10/27/2016 10:14	1	HSL1027.D	HP-5MS 0.25(mm)
CCV 320-134817/3		10/27/2016 10:42	1	ODD1027.D	HP-5MS 0.25(mm)
MB 320-134119/1-A		10/27/2016 15:19	1	S102710.D	HP-5MS 0.25(mm)
LCS 320-134119/2-A		10/27/2016 15:47	1	S102711.D	HP-5MS 0.25(mm)
LCSD 320-134119/3-A		10/27/2016 16:15	1	S102712.D	HP-5MS 0.25(mm)
320-22881-1		10/27/2016 16:43	1	S102713.D	HP-5MS 0.25(mm)
CCVC 320-134817/17		10/27/2016 17:42	1	HSL1005L.D	HP-5MS 0.25(mm)
CCVC 320-134817/18		10/27/2016 18:09	1	ODD1005L.D	HP-5MS 0.25(mm)

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Batch Number: 134119 Batch Start Date: 10/24/16 10:38 Batch Analyst: Kuzmenko, Natalia

Batch Method: 3510C Batch End Date: 10/25/16 12:24

Lab Sample ID	Client Sample ID	Method Chain	Basis	ReceivedpH	GrossWeight	TareWeight	InitialAmount	FinalAmount	FirstAdjustpH
MB 320-134119/1		3510C, 8270D		7 SU			1000 mL	1 mL	2 SU
LCS 320-134119/2		3510C, 8270D		7 SU			1000 mL	1 mL	2 SU
LCSD 320-134119/3		3510C, 8270D		7 SU			1000 mL	1 mL	2 SU
320-22881-F-1	JBER-WW001	3510C, 8270D	T	7 SU	1556.3 g	500.37 g	1055.9 mL	1 mL	2 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	SecondAdjustpH	MS8270SP1 00030	MS8270SP2 00021	MS8270SP3 00019	MS8270SU 00094	
MB 320-134119/1		3510C, 8270D		11 SU				500 uL	
LCS 320-134119/2		3510C, 8270D		11 SU	1 mL	1 mL	1 mL	500 uL	
LCSD 320-134119/3		3510C, 8270D		11 SU	1 mL	1 mL	1 mL	500 uL	
320-22881-F-1	JBER-WW001	3510C, 8270D	T	11 SU				500 uL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Batch Number: 134119 Batch Start Date: 10/24/16 10:38 Batch Analyst: Kuzmenko, Natalia

Batch Method: 3510C Batch End Date: 10/25/16 12:24

Batch Notes	
Acid used for pH adjustment	H2SO4
Acid Used for pH Adjustment ID	0000137221
Balance ID	QA-036
Base used for pH adjustment	NaOH
Base Used to Adjust pH ID	0000153803
Batch Comment	Millipore water used. Dispensed by VY 10/24/16
Analyst ID - Concentration	NGK 10/25/16 FV-1mL vials # 16134406
Na2SO4 ID	SS00318
Oven, Bath or Block Temperature 1	75 C
Pipette ID	K35057E
Prep Solvent ID	0000151763
Prep Solvent Name	DCM
Prep Solvent Volume Used	360 mL
Person's name who did the prep	VY 10/24/16
Analyst ID - Reagent Drop Witness	ERW 10/24/16
Analyst ID - Reagent Drop	VY 10/24/16
Water Bath ID	BT-022

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Dec 11/2
L1/L4

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

GCMS Semivolatile CCV and Tune Data Review Checklist

LIMS Batch Number: 134817 134701	**Worklist #:** 36161	**Instrument ID:** SV5
Analyst/1st Reviewer: ONL	**Method (circle):** 625 8270C 8270D TO-13A NPE CWM 1,4-Dx PAH PAH-IDA	**Analysis Type (circle):** Full Scan SIM
Matrix: Non-potable Water Solid Leachate Tissue Air Waste	**QC Type (circle):** Standard QAPP DOD Other- Explain QSM 5.0	
Job Nos: 22981 22793-3	**Prep Batch(es):** 134119 134518	**ICAL Batch:** 130823, 130825

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. Tune/Calibration Verification					
1. Did DFTPP meet tune criteria? If SIM, did the PFTBA Tune check meet ion ratio criteria?		✓		✓	
2. Are the Benzidine and PCP tailing ≤ 2? (8270D) Benzidine tailing ≤ 3 and PCP tailing ≤ 5? (8270C)		✓		✓	If no, list details:
3. Is the DDT degradation ≤ 20%		✓		✓	If no, list details:
4. Were all standards injected within 12 hr of DFTPP? (or 24 hrs for 625)?		✓		✓	If no, list details:
5. Was the correct ICAL used for quantitation? Date and instrument ID of ICAL verified? (Check in both Chrom/Target and TALS)		✓		✓	
6 Do the RFs meet method minimum criteria? (8270D/625) Are the RFs for SPCCs ≥0.050? (8270C) SPCC: 2,4-Dinitrophenol, 4-Nitrophenol, Hexachlorocylopentadiene & N-nitroso-di-n-propylamine		✓		✓	If no, list details:
7. Is the %D (difference or drift) ≤20% for all CCCs? All other analytes within 15%, or lab limits (8270C); %D ≤ 20% for all analytes, at least 80% of compounds meet criteria? (8270D) %D ≤ 30% for all analytes (non-DOD SIM) %D ≤ 20% for all analytes (DOD SIM) CCC: Phenol, 1,4-DCB, 2-Nitrophenol, 2,4-Dichlorophenol, Hexachlorobutadiene, 4-Chloro-3-methylphenol, 2,4,6-Trichlorophenol, Acenaphthene, N-nitrosodiphenylamine, Pentachlorophenol, Di-n-octyl phthalate & Benzo(a)pyrene		✓		✓	If no, list details: (8270C: %D high, samples ND?) (8270D: <20% of cmpds fail criteria & for failed cmpds RL standard verifies sensitivity for NDs?)
8. For any compound > 20% D (low), was RL standard analyzed and detected? (8270D)	✓				
9. NOTE: For any compounds > 20% D (high or low), detects will be flagged as "EST" & narrated.	✓				□ Must be done in consultation with client.
10. Are the internal standard responses within limits?		✓		✓	If no, list details:

LIMS Batch Number: 34817 34701	Worklist #: 36161	Instrument ID: SVS

(between -50% and +100% of the mid-level ICAL standard)		✓		✓	
11. Are the internal standard retention times within method limits? (±30 sec of ICAL mid pt for 8270C/D)		✓		✓	If no, list details: _____
12. Benzo(b & k)fluoranthene: height of the valley between must be less than 50% of the average of the two peak heights?		✓		✓	
13. Elution order checked Isomeric pairs and coeluters?		✓		✓	Chrom: View/Documents/Methods/Isomers)
• aniline / bis(2-chloroethyl)ether		✓		✓	
• n-nitrosodiphenylamine/diphenylamine * (conc)		✓		✓	
• 1,3- , 1,4- , 1,2-dichlorobenzene		✓		✓	
• benzyl alcohol / 2-methylphenol / 4-methylphenol		✓		✓	
• 2 & 1 - methylnaphthalene		✓		✓	
• 2,4,6- and 2,4,5-trichlorophenol		✓		✓	
• phenanthrene / anthracene		✓		✓	
• fluoranthene / pyrene		✓		✓	
• benzo(a)anthracene / chrysene		✓		✓	
• benzo(e)pyrene / benzo(a)pyrene / perylene		✓		✓	
• bis(2-ethylhexyl)/di-n-octyl phthalate		✓		✓	
• benzo(b)fluoranthene / benzo(k)fluoranthene		✓		✓	
• indeno(1,2,3-cd)pyrene / benzo(g,h,i)perylene		✓		✓	
• safrole/1-chloronaphthalene	✓				
• 1-/2-naphthylamine	✓				
• 2 and 1-chloronaphthalene	✓				
• 2,4- and 2,6-dichlorophenol		✓		✓	
14. If any criteria from items above were not met, was a NCM generated & approved by supervisor?		✓		✓	
15. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	
16. Is the ICV properly linked?		✓		✓	
17. Is the FC43 Tune Documentation attached in TALS (SIM Methods: NPE, CWM, 1,4-Dx, PAH, PAH-IDA)	✓				
18. Isotope Dilution: S/N for all IDA > 10:1, S/N for targets > 2.5:1	✓				
19. 1,4-Dx: S/N > 10:1 (client criteria > 20:1)?	✓				

2nd Reviewer: V. Nilsen **Review Date:** 10/31/16

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

GCMS Semivolatile Sample & QC Data Review Checklist

LIMS Batch Number: 134817 134701	Worklist #: 36161	Instrument ID: SVS
Analyst/1st Reviewer: ONL	Method (circle): 625 8270C 8270D TO-13A NPE CWM 1,4-Dx PAH PAH-IDA	Analysis Type (circle): Full Scan SIM
Matrix: Non-potable Water Solid Leachate Tissue Air Waste	QC Type (circle): Standard QAPP DOD Other- Explain QSM5.0	
Job Nos: 22881 22793	Prep Batch(es): 134119 134518	

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
B. Client Sample and QC Sample Results					
1. All samples & QC injected within method time criteria? (8270C, 8270D 12 hr; 625=24 hr)		✓		✓	Time of last injection:_____
2. LCS (LFB) %recovery within limits? (625=cmpd specific-Table 5 'P' value (All other methods =lab statistical limits)		✓		✓	
3. MS/MSD (LFM/LFMD) %recoveries within limits? (625=cmpd specific-Table 5 'P' value) (All other methods =lab statistical limits)	✓				
4. MS/MSD RPD within limits? (625=cmpd specific-limits) (All other methods =lab statistical limits)	✓				
5. Do all spiked samples (LCS, MS, MSD) yield positive detections? Concentrations of ND require evaluation, correction or explanation.		✓		✓	
6. Are all duplicate or spiked duplicate sample RPDs <75%? Excessive RPDs (>75%) require evaluation, correction or explanation.		✓		✓	
7. Target cmpds in Method Blank are below required concentration.		✓		✓	
8. Surrogates within %Recovery acceptance limits for all samples and QC? *If no, list details:*		✓		✓	□ Samples submitted for re-extraction □ Confirmed by re-extraction □ Insufficient sample for re-extraction □ Surrogates high, samples ND □ Visual Matrix interference-Client notified- Explain_____
9. Internal standard (IS) response between -50% and +100% of (circle one) CCV standard? Mid-point ICAL? *If no, list details:*		✓		✓	□ High IS response. Sample(s) rerun to confirm, or at dilution. □ Low IS response. Sample(s) reanalyzed.

LIMS Batch Number: 134817 134701	Worklist #: 36161	Instrument ID: SV5

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
B. Client Sample and QC Sample Results (continued)					
10. Are internal standards <0.5 min of IS in last CCV?		✓		✓	
11. Samples with target analyte concentrations > calibration range diluted and reanalyzed? *If no, list details:*		✓		✓	□ Results E flagged
11. Are peaks evaluated to assure there are no saturated peaks?		✓		✓	
12. Were preparation & analysis Holding Times met for all samples in the batch? Were analytical holding times met for all samples in the batch? *If no, list details:*		✓		✓	□ H flag for samples past hold □ NCM filed for samples past hold
13. Were prep and dilution factors verified between Chrom and TALs and final report?		✓		✓	Comments:
14. Were spectra for all detections evaluated for correct identification?		✓		✓	
15. Was a review performed of all chromatographic peaks that were deleted to verify removal was appropriate?		✓		✓	
16. Were unidentified peaks reviewed for missed target compounds?		✓		✓	
17. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	
18. Were Isomeric pairs checked for correct assignment? (verify against ICAL & CCV)		✓		✓	
19. Were results from diluted & undiluted runs compared?	✓				
20. Dilution: Is highest target analyte >20% of calibration range?	✓				□ Is there matrix preventing? □ Are clean ups required?
C. Other – – Final Report Data Review					
21. Were all project requirements met?		✓		✓	
22. Samples checked to ensure all requested targets uploaded and reported correctly?		✓		✓	
23. Results for Samples/LCS/MS/MSD calculated/reported correctly in TALS and in final report? Are recovery & RPD limits present in final report?		✓		✓	(Reagents associated correctly?) (Limits in reference data?)
24. NCMs reviewed for applicability, correct references to batches/analytes, grammatical/typographical errors?		✓		✓	
25. Raw Data					
a. Unused data is clearly identified		✓		✓	
b. All crossed out data is initialed and dated		✓		✓	
c. Out of control QC is clearly identified		✓		✓	
d. Any data that has a qualifier tick is commented on with appropriate action taken		✓		✓	

LIMS Batch Number: 134817 134701	Worklist #: 36161	Instrument ID: SVS

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
C. Other – – Final Report Data Review (continued)					
e. The first page of the run includes the filename, instrument, and analyst initials/signature		✓		✓	
26. Run Log					If Chrom worklist is used for runlog, all runs upload to Worklist
a. Unused data is clearly identified		✓		✓	
b. All crossed out data is initialed and dated, not obliterated		✓		✓	
c. Analyst initials/signature provided		✓		✓	
27. TALS Samples Tab					
a. LIMS Sample IDs / Containers are correct		✓		✓	
b. Method and matrix are correct		✓		✓	
c. Date and time match raw data		✓		✓	
• Dilutions are correct		✓		✓	
• Correct suffix designated (where applicable)		✓		✓	
28. TALS Worksheet Tab is complete and correct		✓		✓	
29. TALS Reagent Tab is complete and correct		✓		✓	
30. TALS QC Links Tab is correct		✓		✓	Missing QC? □ Check QC links, to samples and duplicates □ Check cross batch links □QC at second level review? Missing limits? □ Check QC links □ Check spike (reagents) associated with appropriate analytes □ check limits in ref. data-QA
31. TALS Sample Results Tab		✓		✓	
a. All unused data are marked Rejected or Accepted		✓		✓	
b. All reported analytes are marked Primary or Secondary		✓		✓	
c. Flags are correctly applied (no flags missing)		✓		✓	□ Apply manually □ Failing condition not propagated to samples- Re-calc
32. TALS Batch Information Screen documentation is complete		✓		✓	
32. TALS Status set to appropriate review level		✓		✓	□ Check for "yellow calculator"

2nd Reviewer: V. Pellett **Review Date:** 10/31/16

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento

GCMS Semivolatile ICAL Data Review Checklist

HSL/ODD

LIMS Batch Number:	Worklist #:	Instrument ID:
130821 - 130825	35277	SVS (10/5/16)
Analyst/1st Reviewer:	**Method (circle):** 625 8270C 8270D TO-13A	**Analysis Type (circle):**
M.ONISHI	NPE CWM 1,4-Dx PAH PAH-IDA	(Full Scan) SIM
QC Type (circle): (Standard) QAPP (DOD)	**Other-Explain** QSM 4.2, 5.0	

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. Tune/Calibration Verification					
1. Did DFTPP meet tune criteria? If SIM, did the PFTBA Tune check meet ion ratio criteria?		✓		✓	
2. Are the Benzidine and PCP tailing ≤ 2? (8270D) Benzidine tailing ≤ 3 and PCP tailing ≤ 5? (8270C)		✓		✓	If no, list details:
3. Is the DDT degradation ≤ 20%		✓		✓	If no, list details:
4. Were all standards injected within 12 hr of DFTPP? (or 24 hrs for 625)?		✓		✓	If no, list details:
5. Were ≥ 5 levels of each compound analyzed? (≥ 3 levels for 625) (≥ 5 levels of surrogate analyzed for DoD?)		✓		✓	
6. Was low level standard at or below RL?		✓		✓	
7. If calibration points removed, were reasons for removal documented? Did sufficient calibration points remain? (removal from middle of curve not allowed)		✓		✓	(e.g.; some points <RL removed)
8. Does the low level standard have enough sensitivity to produce at least 5-10 scans across the peak, and all secondary ions are present?		✓		✓	
9. Do the average RFs meet minimum RF requirements? (625 – not method defined) (8270C-SPCCs = ≥0.05) (8270D- all cmpds have min RFs defined in method/SOP)		✓		✓	SPCC: 2,4-Dinitrophenol, 4-Nitrophenol, Hexachlorocylopentadiene & N-nitroso-di-n-propylamine
10.Did the calibration %RSD meet method requirements? (625: ≤ 35% all cmpds) (8270C: ≤ 30% for CCCs & ≤ 15% for all other cmpds/surrogates) (8270D: ≤ 20% for all cmpds/surrogates) (SIM Methods: ≤ 30% for all cmpds/surrogates (Std) or : ≤ 15% for all cmpds/surrogates (DOD))		✓		✓	CCC: Phenol, 1,4-DCB, 2-Nitrophenol, 2,4-Dichlorophenol, Hexachlorobutadiene, 4-Chloro-3-methylphenol, 2,4,6-Trichlorophenol, Acenaphthene, N-nitrosodiphenylamine, Pentachlorophenol, Di-n-octyl phthalate & Benzo(a)pyrene
11. Was a linear or quadratic regression fit used for analytes that exceeded the %RSD requirements?		✓		✓	
12. If regression fit used, is correlation coefficient ≥0.990?		✓		✓	
13. Does the low point of a linear regression fit meet		✓		✓	

LIMS Batch Number: 130821 – 130825	Worklist #: 35277	Instrument ID: 5V5

the ±30% read-back criteria? (8270D)		✓		✓	
14. At least 6 consecutive points used for quadratic curves?		✓		✓	
15. For quadratic – examine plot: Is a tangent's slope to the curve entirely positive or negative and continuous? (does not flatten or recurve within the range of calibration)		✓		✓	
16. For quadratic – evaluate curve fitting errors: Does each point fall within criteria when 'read-back' against the curve? (TA requirement – CA-Q-S-005; recommended limits ±30% low point & ±20% all other points) (Chrom Report = Details of Calibration per Analyte)		✓		✓	
17. Is the concentration intercept <|RL| for each cmpd? ("X" intercept in Chrom; "Y" intercept in Target)		✓		✓	
18. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	Reasons: 1)Split Peak; 2)Undetected peak; 3)Tailing; 4)RT shift; 5)Wrong peak selected; 6)Baseline Correction; 7)Other-explain
19. Was the high point checked for detector saturation?		✓		✓	
20. Do the relative retention times for each analyte in each standard agree within ± 0.006 units?		✓		✓	
21. Benzo(b & k)fluoranthene: height of the valley between must be less than 50% of the average of the two peak heights?		✓		✓	
22. Elution order checked Isomeric pairs and coeluters?		✓			Chrom: View/Documents/Methods/Isomers)
• aniline / bis(2-chloroethyl)ether		✓		✓	
• n-nitrosodiphenylamine/diphenylamine * (conc)		✓		✓	
• 1,3- , 1,4- , 1,2-dichlorobenzene		✓		✓	
• benzyl alcohol / 2-methylphenol / 4-methylphenol		✓		✓	
• 2 & 1 - methylnaphthalene		✓		✓	
• 2,4,6- and 2,4,5-trichlorophenol		✓		✓	
• phenanthrene / anthracene		✓		✓	
• fluoranthene / pyrene		✓		✓	
• benzo(a)anthracene / chrysene		✓		✓	
• benzo(e)pyrene / benzo(a)pyrene / perylene		✓		✓	
• bis(2-ethylhexyl)/di-n-octyl phthalate		✓		✓	
• benzo(b)fluoranthene / benzo(k)fluoranthene		✓		✓	
• indeno(1,2,3-cd)pyrene / benzo(g,h,i)perylene		✓		✓	
• safrole/1-chloronaphthalene	✓				
• 1-/2-naphthylamine	✓				
• 2 and 1-chloronaphthalene	✓				
• 2,4- and 2,6-dichlorophenol		✓		✓	
• 2,4,6 and 2,4,5-tribromophenol	✓				

LIMS Batch Number: 130821 - 130825	Worklist #: 35277	Instrument ID: SVS

23. Was the 2nd source initial calibration verification standard (ICV) within required criteria? (625 = QCS method defined/Table5) (8270C = SOP defined; 8270D = ± 30%, poor performers <50%) (DoD or QAPP specific = ± 20%)		✓		✓	
24. All Internal Standards responses within 50-200% of ICAL mid-point		✓		✓	
25. Isotope Dilution: S/N for all IDA > 10:1, S/N for targets > 2.5:1	✓				
26. 1,4-Dx: S/N > 10:1 (client criteria > 20:1)?	✓				
27. If any criteria from items above were not met, was a NCM generated & approved by supervisor?		✓		/	
28. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		/	
29. Are all files and QC linked and processed correctly?		✓		/	□ Files linked properly to calibration levels? □ All points are in the most recent active calibration event? [Calibration Events –'Fix ICAL linkage' if needed] □ Runs linked to DFTPP (625/8270)? [QC links] □ Checklist & run log scanned, attached & assigned properly?
30. Is the ICAL locked? Chrom? TALS?		✓		✓	
31. Is the FC43 Tune Documentation attached in TALS (SIM Methods: NPE, CWM, 1,4-Dx, PAH, PAH-IDA)	✓				

2nd Reviewer: KRussell **Review Date:** 10-7-16

Comments:

Limit group	Batch	DOD ICAL Event	HSL ICAL Event
TO-13A	130821	25598	25603
625_PREC	130822	25599	25604
8270_DoD	130823	25600	25605
8270D	130824	25601	25606
8270C	130825	25602	25607

Indene: 8270C Not Calibrated, Benzoic Acid RL=20ppb, linear ISZ (625 PREC only), RL=Qu10, Qu40 ISZ (Rest of limit groups)

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 36161 102716 Worklist Num: 36161
Instrument: SV5 Method: 8270C_SV5
Batch Directory: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b
Anaylysis Type: SemiVOA Creator: Onishi, Marc
Inj Volume: 1.00 Inj Vol Units: ul
Run Reagents:
MS8270IS_00014, Amount Added: 20.00 , Units: uL

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
DFTPP	320-0036161-001	DFTPP	27-Oct-2016 09:52:30	DFT1027.D	96	1.0		sv
CCV HSL	320-0036161-002	CCV	27-Oct-2016 10:14:30	HSL1027.D	97	1.0		sv
CCV ODD	320-0036161-003	CCV	27-Oct-2016 10:42:30	ODD1027.D	98	1.0		sv
MB GPC 1	320-0036161-004	MB	27-Oct-2016 11:10:30	S102701.D	1	1.0		sv
LCS GPC 1	320-0036161-005	LCS	27-Oct-2016 11:37:30	S102702.D	2	1.0		sv
MB GPC 2	320-0036161-006	MB	27-Oct-2016 12:05:30	S102703.D	3	1.0		sv
LCS GPC 2	320-0036161-007	LCS	27-Oct-2016 12:33:30	S102704.D	4	1.0		sv
320-22793-A-5-A	320-0036161-008	Client	27-Oct-2016 13:01:30	S102705.D	5	1.0	IDOC-MB	sv
LCS 320-134518/2-A	320-0036161-009	LCS	27-Oct-2016 13:28:30	S102706.D	6	1.0		sv
LCS 320-134518/3-A	320-0036161-010	LCS	27-Oct-2016 13:56:30	S102707.D	7	1.0		sv
LCS 320-134518/4-A	320-0036161-011	LCS	27-Oct-2016 14:24:30	S102708.D	8	1.0		sv
LCS 320-134518/5-A	320-0036161-012	LCS	27-Oct-2016 14:52:30	S102709.D	9	5.0		sv
MB 320-134119/1-A	320-0036161-013	MB	27-Oct-2016 15:19:30	S102710.D	10	1.0		sv
LCS 320-134119/2-A	320-0036161-014	LCS	27-Oct-2016 15:47:30	S102711.D	11	1.0		sv
LCSD 320-134119/3-A	320-0036161-015	LCSD	27-Oct-2016 16:15:30	S102712.D	12	1.0		sv
320-22881-F-1-A	320-0036161-016	Client	27-Oct-2016 16:43:30	S102713.D	13	1.0	JBER-WW001	sv
CCVC HSL	320-0036161-017	CCVC	27-Oct-2016 17:42:30	HSL1005L.D	97	1.0		sv
CCVC ODD	320-0036161-018	CCVC	27-Oct-2016 18:09:30	ODD1005L.D	98	1.0		sv

TestAmerica Laboratories
Worklist Report

Worklist Name: 36161 102716 Worklist Number: 36161
Instrument Name: SV5 Chrom Method: 8270C_SV5
Injection Volume: 1.000000 Units: ul
Analysis Type: Semi VOA
Batch Directory: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b
Upload Directory: \\CORPTALSAPP12\320-WS-RawData\Organics\MS\SV5
Run Reagent: MS8270IS_00014 Amount Added: 20.00, Units: uL

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
320-0036161-001	# 1 DFTPP	MSDFTPPPE_00008	DFTPP	sv	1.000000	mL	1.000000
320-0036161-002	# 2 CCV HSL	MSHSLL7_00022	CCV	sv	1.000000	mL	1.000000
320-0036161-003	# 3 CCV ODD	MSODDL6_00008	CCV	sv	1.000000	mL	1.000000
320-0036161-004	# 4 MB GPC 1	MS8270SU_00094	MB	sv	1.000000	mL	1.000000
320-0036161-005	# 5 LCS GPC 1	MS8270SU_00094 MS8270SP1_00030 MS8270SP2_00021 MS8270SP3_00019	LCS	sv	1.000000	mL	1.000000
320-0036161-006	# 6 MB GPC 2	MS8270SU_00094	MB	sv	1.000000	mL	1.000000
320-0036161-007	# 7 LCS GPC 2	MS8270SU_00094 MS8270SP1_00030 MS8270SP2_00021 MS8270SP3_00019	LCS	sv	1.000000	mL	1.000000
320-0036161-008	# 8 320-22793-A-5-A		Client	sv	1.000000	mL	1.000000
320-0036161-009	# 9 LCS 320-134518/2-A		LCS	sv	1.000000	mL	1.000000
320-0036161-010	#10 LCS 320-134518/3-A		LCS	sv	1.000000	mL	1.000000
320-0036161-011	#11 LCS 320-134518/4-A		LCS	sv	1.000000	mL	1.000000
320-0036161-012	#12 LCS 320-134518/5-A		LCS	sv	1.000000	mL	5.000000
320-0036161-013	#13 MB 320-134119/1-A		MB	sv	1.000000	mL	1.000000

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
320-0036161-014	#14 LCS 320-134119/2-A		LCS	sv	1.000000	mL	1.000000
320-0036161-015	#15 LCSD 320-134119/3-A		LCSD	sv	1.000000	mL	1.000000
320-0036161-016	#16 320-22881-F-1-A		Client	sv	1.000000	mL	1.000000
320-0036161-017	#17 CCVC HSL	MSHSLL7_00022	CCVC	sv	1.000000	mL	1.000000
320-0036161-018	#18 CCVC ODD	MSODDL6_00008	CCVC	sv	1.000000	mL	1.000000

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 36161 102716 Worklist Number: 36161
Instrument Name: SV5 Chrom Method: 8270C_SV5
Data Directory: \\ChromNA\Sacramento\ChromData\SV5\20161027-36161.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	MSS - 8270C - ICAL Raw Batch: 134701	MSS - 8270DoD - ICAL Raw Batch: 134817
# 1 DFTPP	# 1 DFTPP	# 1 DFTPP
# 2 CCV HSL	# 2 CCV HSL	# 2 CCV HSL
# 3 CCV ODD	# 3 CCV ODD	# 3 CCV ODD
# 4 MB GPC 1	# 4 MB GPC 1	
# 5 LCS GPC 1	# 5 LCS GPC 1	
# 6 MB GPC 2	# 6 MB GPC 2	
# 7 LCS GPC 2	# 7 LCS GPC 2	
# 8 320-22793-A-5-A	# 8 320-22793-A-5-A	
# 9 LCS 320-134518/2-A	# 9 LCS 320-134518/2-A	
#10 LCS 320-134518/3-A	#10 LCS 320-134518/3-A	
#11 LCS 320-134518/4-A	#11 LCS 320-134518/4-A	
#12 LCS 320-134518/5-A	#12 LCS 320-134518/5-A	
#13 MB 320-134119/1-A		#13 MB 320-134119/1-A
#14 LCS 320-134119/2-A		#14 LCS 320-134119/2-A
#15 LCSD 320-134119/3-A		#15 LCSD 320-134119/3-A
#16 320-22881-F-1-A		#16 320-22881-F-1-A
#17 CCVC HSL		#17 CCVC HSL
#18 CCVC ODD		#18 CCVC ODD

Solid SW-846-3500 Analysis Sheet BOK number 10165

(To Accompany Samples to Instruments)

Batch Number: 320-134518

Analyst: Zeighami, Alireza

Batch Open: 10/26/2016 8:21:00AM

Method Code: 320-3550B-320

Batch End: 10/26/2016 15:58 pm

IDOC

Ultrasonic Extraction

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	320-22793-A-5 (8270C)	Alireza Z prep IDOC (320-22793-3)	30 g	1 mL	10/25/16	12 Days	1		320-22793-A-5-A
2	LCS~320-134518/2 N/A	N/A	30 g	1 mL	N/A	N/A	N/A		LCS 320-134518/2-A
3	LCS~320-134518/3 N/A	N/A	30 g	1 mL	N/A	N/A	N/A		LCS 320-134518/3-A
4	LCS~320-134518/4 N/A	N/A	30 g	1 mL	N/A	N/A	N/A		LCS 320-134518/4-A
5	LCS~320-134518/5 N/A	N/A	30 g	1 mL	N/A	N/A	N/A		LCS 320-134518/5-A

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134518

Analyst: Zeighami, Alireza

Batch Open: 10/26/2016 8:21:00AM

Method Code: 320-3550B-320

Batch End:

Batch Notes

Perform Calculation (0=No, 1=Yes)	
Nominal Amount Used	
Prep Solvent Volume Used	300
Vendor of Reagent used	
Analyst ID - Concentration	AZ 10/26/16
Analyst ID - Reagent Drop Witness	SIZ 10/26/16
Extraction End time	
Na2SO4 ID	SS_00322
Magnesium Sulfate ID	
Silica Gel ID	
Concentration Start Time	
Concentration End Time	
Final Concentrator Volume	
Balance ID	QA-069
Person's name who did the prep	AZ 10/26/16
Prep Solvent Name	DCM:ACE 1:1
Prep Solvent ID	DA11_00262
Exchange Solvent Name	
Exchange Solvent ID	
Blank Soil Lot Number	
Florisil ID	

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134518

Analyst: Zeighami, Alireza

Batch Open: 10/26/2016 8:21:00AM

Method Code: 320-3550B-320

Batch End:

TBA ID	
Filter Paper ID	
Copper ID	
Mercury ID	
Sulfuric Acid ID	
Acid used for Clean Up ID	
Water Bath ID	BT_019
Thermometer ID	
Uncorrected Temperature	
Water Bath Temperature	80 C-85 C
N-evap ID	
Uncorrected N-evap Temperature	
N-evap Temperature	
Pipette ID	K35171E
Syringe ID	
Analyst ID - Reagent Drop	AZ 10/26/16
Florisil Solution Reagent ID	
Analyst ID - Clean Up	
Glass Wool ID	
MeCL2 ID	
Hexane ID	
Vial ID	16134406
Batch Comment	

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134518

Method Code: 320-3550B-320

Analyst: Zeighami, Alireza

Batch Open: 10/26/2016 8:21:00AM

Batch End:

Comments

320-22793-A-5

Sample Comments: Use as MB, create 4 LCS Sim = Alireza

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134518

Method Code: 320-3550B-320

Analyst: Zeighami, Alireza

Batch Open: 10/26/2016 8:21:00AM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
320-22793-A-5	MS8270SU_00094	500 uL	1 mL		
LCS 320-134518/2	MS8270SP1_00030	1 mL	1 mL		
LCS 320-134518/2	MS8270SP2_00021	1 mL	1 mL		
LCS 320-134518/2	MS8270SP3_00019	1 mL	1 mL		
LCS 320-134518/2	MS8270SU_00094	500 uL	1 mL		
LCS 320-134518/3	MS8270SP1_00030	1 mL	1 mL		
LCS 320-134518/3	MS8270SP2_00021	1 mL	1 mL		
LCS 320-134518/3	MS8270SP3_00019	1 mL	1 mL		
LCS 320-134518/3	MS8270SU_00094	500 uL	1 mL		
LCS 320-134518/4	MS8270SP1_00030	1 mL	1 mL		
LCS 320-134518/4	MS8270SP2_00021	1 mL	1 mL		
LCS 320-134518/4	MS8270SP3_00019	1 mL	1 mL		
LCS 320-134518/4	MS8270SU_00094	500 uL	1 mL		
LCS 320-134518/5	MS8270SP1_00030	1 mL	1 mL		
LCS 320-134518/5	MS8270SP2_00021	1 mL	1 mL		
LCS 320-134518/5	MS8270SP3_00019	1 mL	1 mL		
LCS 320-134518/5	MS8270SU_00094	500 uL	1 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134518

Analyst: Zeighami, Alireza

Batch Open: 10/26/2016 8:21:00AM

Method Code: 320-3550B-320

Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134518 Test: 8270

Earliest Holding Time: 10/31

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	N/A	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	N/A	✓
The pH is transcribed correctly in TALS	N/A	N/A
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: AZ Date: 10/26/16

2nd Level Reviewer: J. Nemeth Date: 10/26/16

Comments:

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134119

Analyst: Yan, Vincent

Batch Open: 10/24/2016 10:38:00AM

Method Code: 320-3510C_IVWT-320

Batch End:

Liquid-Liquid Extraction (Separatory Funnel)

Box # 10162

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-134119/1 N/A	N/A		1000 mL / 1mL	7	2	11	N/A	N/A	N/A		MB 320-134119/1-A
2	LCS~320-134119/2 N/A	N/A		1000 mL / 1mL	7	2	11	N/A	N/A	N/A		LCS 320-134119/2-A
3	LCSD~320-134119/3 N/A	N/A		1000 mL / 1mL	7	2	11	N/A	N/A	N/A		LCSD 320-134119/3-A
4	320-22881-F-1 (8270D_DOD5)	N/A (320-22881-1)	1556.3 g	/ 1mL	7	2	11	10/26/16	8_Days	4		320-22881-F-1-A

VY 10/24/16

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11/14/2016

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134119 | Analyst: Yan, Vincent | Batch Open: 10/24/2016 10:38:00AM

Method Code: 320-3510C_IVWT-320 | Batch End:

Batch Notes

Person's name who did the prep	VY 10/24/16
Prep Solvent Name	DCM
Prep Solvent ID	0000151763
Prep Solvent Volume Used	360
Analyst ID - Reagent Drop	VY 10/24/16
Analyst ID - Reagent Drop Witness	ERW 10/24/16
Analyst ID - SU Reagent Drop	
Analyst ID - SU Reagent Drop Witness	
Acid used for pH adjustment	H2SO4
Acid Used for pH Adjustment ID	0000137221
Base used for pH adjustment	NaOH
Base Used to Adjust pH ID	0000153803
Silica Gel ID	
Analyst ID - Concentration	
Exchange Solvent Name	
Exchange Solvent ID	
Concentration Start Time	
Concentration End Time	
Na2SO4 ID	
Water Bath ID	
Uncorrected Temperature	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134119 Analyst: Yan, Vincent Batch Open: 10/24/2016 10:38:00AM

Method Code: 320-3510C_IVWT-320 Batch End:

Oven, Bath or Block Temperature 1	
Sufficient volume for MS/MSD?	
Analyst ID - Clean Up	
Florisil ID	
Acid used for Clean Up ID	
Sulfuric Acid ID	
TBA ID	
HPLC H2O ID	
NaCl ID	
Balance ID	QA-036
Florisil Solution Reagent ID	
Mercury ID	
Filter Paper ID	
Pipette ID	K35057E
Syringe ID	
N-evap ID	
N-evap Temperature	
Uncorrected N-evap Temperature	
pH Paper ID	
Thermometer ID	
Analyst ID - Spike Analyst	
Analyst ID - Spike Witness Analyst	
Vial ID	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134119 Analyst: Yan, Vincent Batch Open: 10/24/2016 10:38:00AM

Method Code: 320-3510C_IVWT-320 Batch End:

Batch Comment Millipore water used. Dispensed by VY 10/24/16

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134119 Analyst: Yan, Vincent Batch Open: 10/24/2016 10:38:00AM

Method Code: 320-3510C_IVWT-320 Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-134119/1	MS8270SU_00094	500 uL			
LCS 320-134119/2	MS8270SP1_00030	1 mL			
LCS 320-134119/2	MS8270SP2_00021	1 mL			
LCS 320-134119/2	MS8270SP3_00019	1 mL			
LCS 320-134119/2	MS8270SU_00094	500 uL			
LCSD 320-134119/3	MS8270SP1_00030	1 mL			
LCSD 320-134119/3	MS8270SP2_00021	1 mL			
LCSD 320-134119/3	MS8270SP3_00019	1 mL			
LCSD 320-134119/3	MS8270SU_00094	500 uL			
320-22881-F-1	MS8270SU_00094	500 uL			

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134119 Analyst: Yan, Vincent Batch Open: 10/24/2016 10:38:00AM

Method Code: 320-3510C_IVWT-320 Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134119 Test: 8270D_DOD

Earliest Holding Time: ~~10/26/16~~ 10/27/16
VY 10/24/16

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: MM Date: 10/25/16

2nd Level Reviewer: V.V Mart Date: 10/25/16

Comments:

8151A_DOD5

Herbicides (GC)

FORM II
HERBICIDES SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): RTI-35silms ID: 0.32(mm)

Client Sample ID	Lab Sample ID	DCPAA1 #
JBER-WW001	320-22881-1	62
	MB 280-348542/1-A	73
	LCS 280-348542/2-A	67
	LCSD 280-348542/3-A	65

	QC LIMITS
DCPAA = 2,4-Dichlorophenylacetic acid	32-138

Column to be used to flag recovery values

FORM II 8151A DOD

FORM III
HERBICIDES LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 11020010.D

Lab ID: LCS 280-348542/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
2,4,5-T	5.00	3.31	66	42-147	
2,4-D	5.00	3.19 J	64	45-152	
2,4-DB	5.00	3.56 J	71	35-153	
Dalapon	5.00	2.80	56	19-139	
Dicamba	5.00	3.10	62	50-141	
Dichlorprop	5.00	3.07 J	61	46-159	
MCPA	500	353 J	71	35-144	
Silvex (2,4,5-TP)	5.00	3.39	68	51-134	
MCPP	500	354 J	71	33-157	

Column to be used to flag recovery and RPD values

FORM III 8151A DOD

FORM III
HERBICIDES LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 11020011.D

Lab ID: LCSD 280-348542/3-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,4,5-T	5.00	3.10	62	7	30	42-147	
2,4-D	5.00	3.00 J	60	6	30	45-152	
2,4-DB	5.00	3.12 J	62	13	30	35-153	
Dalapon	5.00	3.17	63	12	30	19-139	
Dicamba	5.00	3.02	60	2	30	50-141	
Dichlorprop	5.00	2.99 J	60	2	30	46-159	
MCPA	500	300 J	60	16	30	35-144	
Silvex (2,4,5-TP)	5.00	3.23	65	5	30	51-134	
MCPP	500	342 J	68	4	30	33-157	

Column to be used to flag recovery and RPD values

FORM III 8151A DOD

FORM IV
HERBICIDES METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: MB 280-348542/1-A

Matrix: Water Date Extracted: 10/27/2016 12:46

Lab File ID:(1) 11020009.D Lab File ID:(2) 11020009.D

Date Analyzed:(1) 11/02/2016 20:24 Date Analyzed:(2) 11/02/2016 20:24

Instrument ID:(1) SGC_M Instrument ID:(2) SGC_M

GC Column:(1) RTI-35silms ID: 0.32(mm) GC Column:(2) RTI-XLB ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-348542/2-A	11/02/2016 20:47	11/02/2016 20:47
	LCSD 280-348542/3-A	11/02/2016 21:10	11/02/2016 21:10
JBER-WW001	320-22881-1	11/02/2016 21:32	11/02/2016 21:32

FORM VIII
HERBICIDES ANALYTICAL SEQUENCE

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Sample No.: STD4 280-348088/6 Date Analyzed: 10/25/2016 15:06

Instrument ID: SGC_M GC Column: RTI-35silms ID: 0.32(mm)

Lab File ID (Standard): 10250006.D Heated Purge: (Y/N) N

Calibration ID: 27381

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs AND LCSs IS GIVEN BELOW:

				DCPAA RT #		
INITIAL CALIBRATION SURROGATE				9.14		
UPPER LIMIT				9.17		
LOWER LIMIT				9.11		
LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	LAB FILE ID			
STD4 280-348088/6 ICRT		10/25/2016 15:06	10250006.D	9.14		
ICV 280-348088/10		10/25/2016 16:37	10250010.D	9.14		

DCPAA = 2,4-Dichlorophenylacetic acid

DCPAA RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8151A DOD

FORM VIII
HERBICIDES ANALYTICAL SEQUENCE

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Sample No.: STD4 280-348088/6 Date Analyzed: 10/25/2016 15:06

Instrument ID: SGC_M GC Column: RTI-XLB ID: 0.32(mm)

Lab File ID (Standard): 10250006.D Heated Purge: (Y/N) N

Calibration ID: 27382

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs AND LCSs IS GIVEN BELOW:

				DCPAA RT #		
INITIAL CALIBRATION SURROGATE				9.62		
UPPER LIMIT				9.65		
LOWER LIMIT				9.59		
LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	LAB FILE ID			
STD4 280-348088/6 ICRT		10/25/2016 15:06	10250006.D	9.62		
ICV 280-348088/10		10/25/2016 16:37	10250010.D	9.62		

DCPAA = 2,4-Dichlorophenylacetic acid

DCPAA RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8151A DOD

FORM VIII
HERBICIDES ANALYTICAL SEQUENCE

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Sample No.: CCVRT 280-349518/8 Date Analyzed: 11/02/2016 20:02

Instrument ID: SGC_M GC Column: RTI-35silms ID: 0.32(mm)

Lab File ID (Standard): 11020008.D Heated Purge: (Y/N) N

Calibration ID: 27381

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs AND LCSs IS GIVEN BELOW:

				DCPAA RT #		
CONTINUING CALIBRATION SURROGATE				9.13		
UPPER LIMIT				9.16		
LOWER LIMIT				9.10		
LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	LAB FILE ID			
CCVRT 280-349518/8		11/02/2016 20:02	11020008.D	9.13		
MB 280-348542/1-A		11/02/2016 20:24	11020009.D	9.13		
LCS 280-348542/2-A		11/02/2016 20:47	11020010.D	9.13		
LCSD 280-348542/3-A		11/02/2016 21:10	11020011.D	9.13		
320-22881-1	JBER-WW001	11/02/2016 21:32	11020012.D	9.14		
CCV 280-349518/19		11/03/2016 00:10	11020019.D	9.14		

DCPAA = 2,4-Dichlorophenylacetic acid

DCPAA RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8151A DOD

FORM VIII
HERBICIDES ANALYTICAL SEQUENCE

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Sample No.: CCVRT 280-349518/8 Date Analyzed: 11/02/2016 20:02

Instrument ID: SGC_M GC Column: RTI-XLB ID: 0.32(mm)

Lab File ID (Standard): 11020008.D Heated Purge: (Y/N) N

Calibration ID: 27382

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs AND LCSs IS GIVEN BELOW:

				DCPAA RT #		
CONTINUING CALIBRATION SURROGATE				9.61		
UPPER LIMIT				9.64		
LOWER LIMIT				9.58		
LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	LAB FILE ID			
CCVRT 280-349518/8		11/02/2016 20:02	11020008.D	9.61		
CCV 280-349518/19		11/03/2016 00:10	11020019.D	9.61		

DCPAA = 2,4-Dichlorophenylacetic acid

DCPAA RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8151A DOD

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 280-348542/2-A

Instrument ID (1): SGC_M Instrument ID (2): SGC_M

Date Analyzed (1): 11/02/2016 20:47 Date Analyzed (2): 11/02/2016 20:47

GC Column (1): RTI-35silms ID: 0.32(mm) GC Column (2): RTI-XLB ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Dalapon	1		3.18	3.16	3.22	2.80		11.1
	2		4.38	4.35	4.41	3.13		
Dicamba	1		9.24	9.21	9.27	3.10		4.9
	2		9.67	9.63	9.69	3.25		
MCPP	1		9.29	9.26	9.32	354		8.0
	2		9.81	9.78	9.84	327		
MCPA	1		9.53	9.50	9.56	353		13.7
	2		9.95	9.92	9.98	307		
Dichlorprop	1		9.71	9.68	9.74	3.07		0.4
	2		10.15	10.12	10.18	3.05		
2,4-D	1		9.96	9.93	9.99	3.19		7.1
	2		10.26	10.23	10.29	3.43		
Silvex (2,4,5-TP)	1		10.28	10.25	10.31	3.39		5.0
	2		10.57	10.54	10.60	3.57		
2,4,5-T	1		10.44	10.41	10.47	3.31		11.8
	2		10.69	10.66	10.72	3.73		
2,4-DB	1		10.60	10.57	10.63	3.56		4.8
	2		10.88	10.85	10.91	3.74		

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 280-348542/3-A

Instrument ID (1): SGC_M Instrument ID (2): SGC_M

Date Analyzed (1): 11/02/2016 21:10 Date Analyzed (2): 11/02/2016 21:10

GC Column (1): RTI-35silms ID: 0.32(mm) GC Column (2): RTI-XLB ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Dalapon	1		3.18	3.16	3.22	3.17		7.0
	2		4.37	4.35	4.41	3.40		
Dicamba	1		9.24	9.21	9.27	3.02		7.8
	2		9.66	9.63	9.69	3.27		
MCPP	1		9.29	9.26	9.32	342		4.2
	2		9.80	9.78	9.84	328		
MCPA	1		9.53	9.50	9.56	300		4.6
	2		9.94	9.92	9.98	314		
Dichlorprop	1		9.70	9.68	9.74	2.99		1.3
	2		10.14	10.12	10.18	3.03		
2,4-D	1		9.96	9.93	9.99	3.00		15.0
	2		10.26	10.23	10.29	3.49		
Silvex (2,4,5-TP)	1		10.28	10.25	10.31	3.23		8.9
	2		10.57	10.54	10.60	3.53		
2,4,5-T	1		10.44	10.41	10.47	3.10		17.7
	2		10.69	10.66	10.72	3.70		
2,4-DB	1		10.60	10.57	10.63	3.12		18.3
	2		10.88	10.85	10.91	3.75		

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 320-22881-1

SDG No.:

Client Sample ID: JBER-WW001 | Lab Sample ID: 320-22881-1

Matrix: Water | Lab File ID: 11020012.D

Analysis Method: 8151A DOD | Date Collected: 10/20/2016 10:40

Extraction Method: 8151A | Date Extracted: 10/27/2016 12:46

Sample wt/vol: 1042(mL) | Date Analyzed: 11/02/2016 21:32

Con. Extract Vol.: 10(mL) | Dilution Factor: 10

Injection Volume: 1(uL) | GC Column: RTI-35silms ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 349518 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
93-76-5	2,4,5-T	5.8	U	9.6	5.8	1.8
94-75-7	2,4-D	5.8	U	38	5.8	2.0
94-82-6	2,4-DB	8.8	U	38	8.8	3.5
75-99-0	Dalapon	18	U	19	18	8.7
1918-00-9	Dicamba	5.8	U	19	5.8	1.4
120-36-5	Dichlorprop	18	U	38	18	6.2
94-74-6	MCPA	580	U	3800	580	160
93-72-1	Silvex (2,4,5-TP)	5.8	U	9.6	5.8	1.6
93-65-2	MCPP	880	U	3800	880	320

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	62		32-138

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020012.D
Lims ID: 320-22881-H-1-A
Client ID: JBER-WW001
Sample Type: Client
Inject. Date: 02-Nov-2016 21:32:35 ALS Bottle#: 7 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 10.0000
Sample Info: 320-22881-H-1-A
Misc. Info.: 280-0052632-012
Operator ID: AMB Instrument ID: SGC_M

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:37:29 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 10-Nov-2016 13:31:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 2,4-DBDinoseb						
1		-0.060			ND	
2		-0.060				
2 Dalapon						
1		3.190			ND	
2		4.376				
$ 3 2,4-Dichlorophenylacetic acid						M
1	9.142	9.133	0.009	12161414	0.0310	
2	9.617	9.609	0.008	6810474	0.0350	M
					RPD = 12.00	
4 Dicamba						
1		9.242			ND	
2		9.664				
5 MCPP						M
1	9.288	9.293	-0.005	600443	1.48	
2	9.784	9.805	-0.021	228829	0.7067	M
					RPD = 70.75	
6 MCPA						
1	9.548	9.531	0.017	788531	0.1965	
2	9.929	9.945	-0.016	132207	-0.8177	
					RPD = -326.51	
7 Dichlorprop						
1	9.692	9.706	-0.014	545847	-0.0159	
2	10.157	10.148	0.009	108387	-0.0151	
					RPD = -4.88	

LOD = 0.001000

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
8 2,4-D						
1	9.959	9.963	-0.004	101267	-0.0143	
2	10.261	10.258	0.003	440186	-0.0118	
					RPD = -18.88	
LOD = 0.001000						
9 Silvex (2,4,5-TP)						
1		10.282			ND	
2		10.572				
10 2,4,5-T						
1	10.449	10.444	0.005	838148	-0.005400	
2	10.684	10.692	-0.008	1041302	-0.008482	
					RPD = -44.41	
LOD = 0.001000						
11 Dinoseb						
1	10.572	10.561	0.011	847775	0.002556	
2	10.916	10.928	-0.012	377304	-0.001756	
					RPD = 1077.78	
12 2,4-DB						
1	10.599	10.601	-0.002	62807	-0.0108	
2	10.873	10.884	-0.011	655978	-0.001578	
					RPD = -149.19	
LOD = 0.001000						
13 Picloram						
1		11.121			ND	
2		11.191				

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

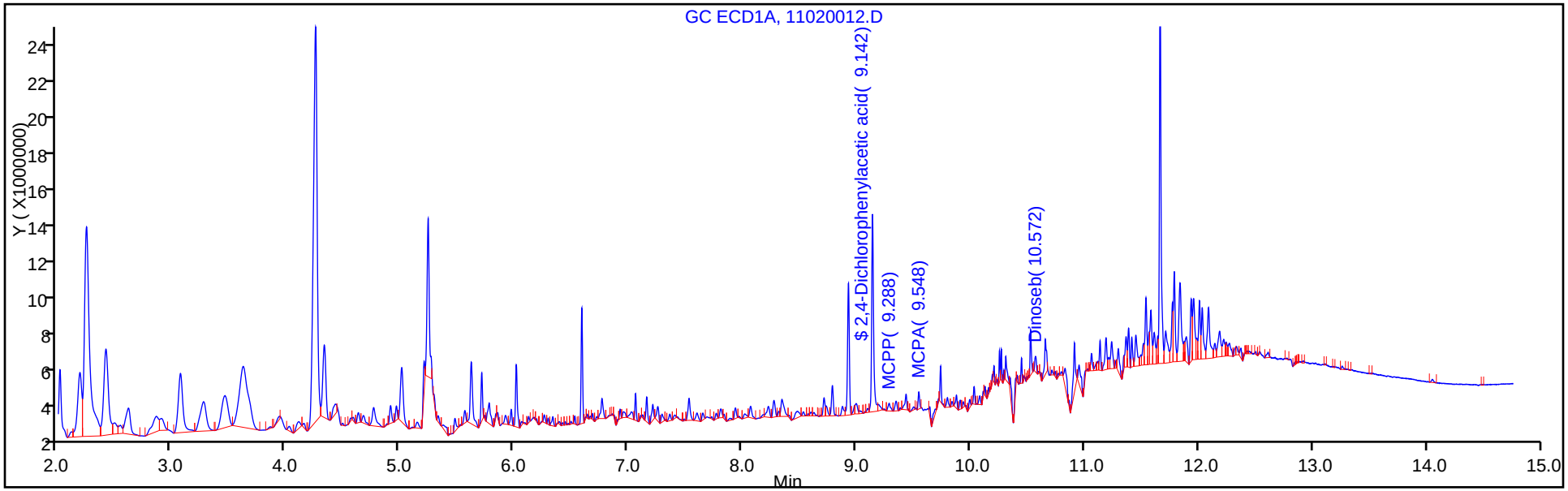
Report Date: 10-Nov-2016 13:37:48 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

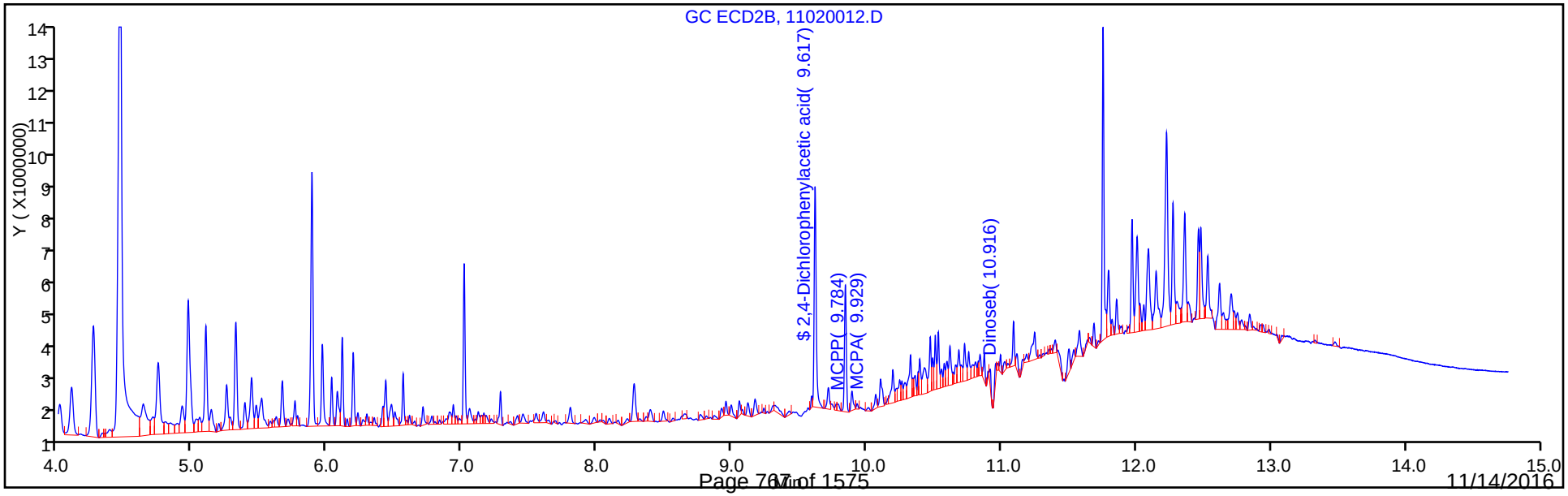
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020012.D

Injection Date:	02-Nov-2016 21:32:35	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	320-22881-H-1-A	Lab Sample ID:	280-22881-1	Worklist Smp#:	12
Client ID:	JBER-WW001				
Injection Vol:	1.0 ul	Dil. Factor:	10.0000	ALS Bottle#:	7
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020012.D				
Lims ID:	320-22881-H-1-A				
Client ID:	JBER-WW001				
Sample Type:	Client				
Inject. Date:	02-Nov-2016 21:32:35	ALS Bottle#:	7	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Sample Info:	320-22881-H-1-A				
Misc. Info.:	280-0052632-012				
Operator ID:	AMB	Instrument ID:	SGC_M		
Method:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m				
Limit Group:	GCSV - 8151				
Method Label:	8151A: Herbicides: DV-GC-0022				
Last Update:	10-Nov-2016 13:37:29	Calib Date:	25-Oct-2016 16:14:35		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D				
Column 1 :	Rti-35 sil MS (0.32 mm)		Det: GC ECD1A		
Column 2 :	Rti-XLB (0.32 mm)		Det: GC ECD2B		
Process Host:	XAWRK004				
First Level Reviewer: byla		Date:	10-Nov-2016 13:31:33		

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.0310	6.20

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.0350	6.99

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1 Analy Batch No.: 348088

SDG No.:

Instrument ID: SGC_M GC Column: RTI-35silms ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/25/2016 13:57 Calibration End Date: 10/25/2016 16:14 Calibration ID: 27381

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-348088/9	10250009.D
Level 2	STD2 280-348088/8	10250008.D
Level 3	STD3 280-348088/7	10250007.D
Level 4	STD4 280-348088/6	10250006.D
Level 5	STD5 280-348088/5	10250005.D
Level 6	STD6 280-348088/4	10250004.D
Level 7	STD7 280-348088/3	10250003.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Dalapon	3.203	3.205	3.205	3.206	3.205	3.205	3.204				3.176 - 3.236	3.205
Dicamba	9.250	9.250	9.249	9.250	9.250	9.245	9.244				9.220 - 9.280	9.248
MCPP	9.299	9.299	9.299	9.300	9.302	9.298	9.302				9.270 - 9.330	9.300
MCPA	9.539	9.538	9.538	9.539	9.541	9.536	9.541				9.509 - 9.569	9.539
Dichlorprop	9.718	9.717	9.715	9.714	9.714	9.708	9.707				9.684 - 9.744	9.713
2,4-D	9.981	9.977	9.974	9.970	9.971	9.964	9.963				9.940 - 10.000	9.971
Silvex (2,4,5-TP)	10.289	10.287	10.286	10.286	10.286	10.284	10.285				10.256 - 10.316	10.286
2,4,5-T	10.454	10.451	10.449	10.448	10.448	10.446	10.447				10.418 - 10.478	10.449
Dinoseb	10.567	10.566	10.565	10.565	10.565	10.564	10.564				10.535 - 10.595	10.565
2,4-DB	10.611	10.608	10.604	10.604	10.604	10.601	10.602				10.574 - 10.634	10.605
2,4-Dichlorophenylacetic acid	9.143	9.142	9.140	9.140	9.141	9.135	9.135				9.110 - 9.170	9.139

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 320-22881-1 Analy Batch No.: 348088

SDG No.:

Instrument ID: SGC_M GC Column: RTI-35silms ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/25/2016 13:57 Calibration End Date: 10/25/2016 16:14 Calibration ID: 27381

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-348088/9	10250009.D
Level 2	STD2 280-348088/8	10250008.D
Level 3	STD3 280-348088/7	10250007.D
Level 4	STD4 280-348088/6	10250006.D
Level 5	STD5 280-348088/5	10250005.D
Level 6	STD6 280-348088/4	10250004.D
Level 7	STD7 280-348088/3	10250003.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
Dalapon	467565546 371040920	440419047 358909765	404682395 340907589	390067857	Lin2	5345509.43	363915031							0.9970		0.9900
Dicamba	1078942258 987760615	1036630884 963453216	962323706 848798022	936537192	Lin2	7859497.20	927169300							0.9970		0.9900
MCPP	712254 883713	772070 880616	785301 804163	802987	Lin2	-649199.25	844120.596							0.9970		0.9900
MCPA	1250392 1204942	1207233 1196386	1119006 1070953	1108513	Lin2	566153.621	1131847.80							0.9970		0.9900
Dichlorprop	316981685 253012993	295818252 247206410	252692552 214566263	239848973	Lin2	4280485.86	235079593							0.9950		0.9900
2,4-D	377780644 316553968	356650282 309571628	312441459 267833039	299371048	Lin2	4305381.46	294627807							0.9960		0.9900
Silvex (2,4,5-TP)	1393707402 1263413585	1362111613 1246661033	1214256006 1100940130	1192398460	Lin2	11036637.0	1189387371							0.9970		0.9900
2,4,5-T	1306380329 1237580746	1296000619 1224482534	1183029192 1100386707	1173024670	Lin2	7185060.77	1175428098							0.9980		0.9900
Dinoseb	466927330 501322769	457940853 463443353	462128674 431528917	504423560	Lin2	-358191.06	471766430							0.9960		0.9900
2,4-DB	217929371 189589207	213389458 185765925	184454380 170476531	185026368	Lin2	2021537.58	180588913							0.9970		0.9900
2,4-Dichlorophenylacetic acid	330044135 249726379	300633387 241076406	262251095 208093459	242240668	Lin2	4958023.56	232357328							0.9950		0.9900

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 320-22881-1 Analy Batch No.: 348088

SDG No.:

Instrument ID: SGC_M GC Column: RTI-35silms ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/25/2016 13:57 Calibration End Date: 10/25/2016 16:14 Calibration ID: 27381

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-348088/9	10250009.D
Level 2	STD2 280-348088/8	10250008.D
Level 3	STD3 280-348088/7	10250007.D
Level 4	STD4 280-348088/6	10250006.D
Level 5	STD5 280-348088/5	10250005.D
Level 6	STD6 280-348088/4	10250004.D
Level 7	STD7 280-348088/3	10250003.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Dalapon	Lin2	21455414 329389437	40419458 625735880	92849317	178992388	255392103	0.0459 0.918	0.0918 1.84	0.229	0.459	0.688
Dicamba	Lin2	50777720 906850340	97572882 1597862277	226446797	440757816	697297259	0.0471 0.941	0.0941 1.88	0.235	0.471	0.706
MCPP	Lin2	3353306 82919069	7269836 151440555	18486043	37804749	62408076	4.71 94.2	9.42 188	23.5	47.1	70.6
MCPA	Lin2	5861777 112172021	11318903 200823145	26229239	51966543	84730684	4.69 93.8	9.38 188	23.4	46.9	70.3
Dichlorprop	Lin2	15091498 235389944	28167814 408619991	60153462	114192096	180689229	0.0476 0.952	0.0952 1.90	0.238	0.476	0.714
2,4-D	Lin2	17761357 291090202	33535826 503686813	73447176	140749298	223241772	0.0470 0.940	0.0940 1.88	0.235	0.470	0.705
Silvex (2,4,5-TP)	Lin2	66699352 1193241608	130374513 2107529690	290556284	570652093	906957235	0.0479 0.957	0.0957 1.91	0.239	0.479	0.718
2,4,5-T	Lin2	62226161 1166503286	123463499 2096566793	281753190	558740976	884235973	0.0476 0.953	0.0953 1.91	0.238	0.476	0.714
Dinoseb	Lin2	22167375 440039464	43481484 819473414	109697794	239475085	357004477	0.0475 0.950	0.0950 1.90	0.237	0.475	0.712
2,4-DB	Lin2	10367445 176746989	20302940 324399791	43874780	88021669	135288488	0.0476 0.951	0.0951 1.90	0.238	0.476	0.714
2,4-Dichlorophenylacetic acid	Lin2	15307447 223622474	27886753 386054986	60816029	112351222	173734642	0.0464 0.928	0.0928 1.86	0.232	0.464	0.696

Curve Type Legend:
Lin2 = Linear 1/conc^2

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250003.D
Lims ID: STD7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 25-Oct-2016 13:57:45 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD7
Misc. Info.: 280-0052267-003
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:18 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

First Level Reviewer: wellsd Date: 26-Oct-2016 08:08:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.204	3.206	-0.002	625735880	1.84	1.70	
2	4.381	4.385	-0.004	285669548	1.84	1.72	
						RPD = 0.65	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.135	9.140	-0.005	386054986	1.86	1.64	
2	9.613	9.619	-0.006	209973712	1.86	1.64	
						RPD = 0.14	
4 Dicamba							
1	9.244	9.250	-0.006	1597862277	1.88	1.71	
2	9.669	9.675	-0.006	780612928	1.88	1.67	
						RPD = 2.46	
5 MCPP							
1	9.302	9.300	0.002	151440555	188.3	180.2	
2	9.813	9.815	-0.002	86484596	188.3	176.2	
						RPD = 2.23	
6 MCPA							
1	9.541	9.539	0.002	200823145	187.5	176.9	
2	9.955	9.955	0.000	120981728	187.5	173.4	
						RPD = 2.01	
7 Dichlorprop							
1	9.707	9.714	-0.007	408619991	1.90	1.72	
2	10.151	10.156	-0.005	224166614	1.90	1.71	
						RPD = 0.58	
8 2,4-D							
1	9.963	9.970	-0.007	503686813	1.88	1.69	
2	10.261	10.264	-0.003	264129006	1.88	1.67	
						RPD = 1.26	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.285	10.286	-0.001	2107529690	1.91	1.76	
2	10.576	10.577	-0.001	1120416572	1.91	1.71	
						RPD = 2.87	
10 2,4,5-T							
1	10.447	10.448	-0.001	2096566793	1.91	1.78	
2	10.695	10.696	-0.001	1102328709	1.91	1.72	
						RPD = 3.26	
11 Dinoseb							
1	10.564	10.565	-0.001	819473414	1.90	1.74	
2	10.933	10.934	-0.001	452430487	1.90	1.68	
						RPD = 3.38	
12 2,4-DB							
1	10.602	10.604	-0.002	324399791	1.90	1.79	
2	10.887	10.890	-0.003	184673002	1.90	1.74	
						RPD = 2.77	
13 Picloram							
1	11.122	11.122	0.000	3290850967	1.89	1.85	
2	11.192	11.194	-0.002	1585383003	1.89	1.77	
						RPD = 4.37	

Reagents:

8151ICALL7_00048 Amount Added: 1.00 Units: mL

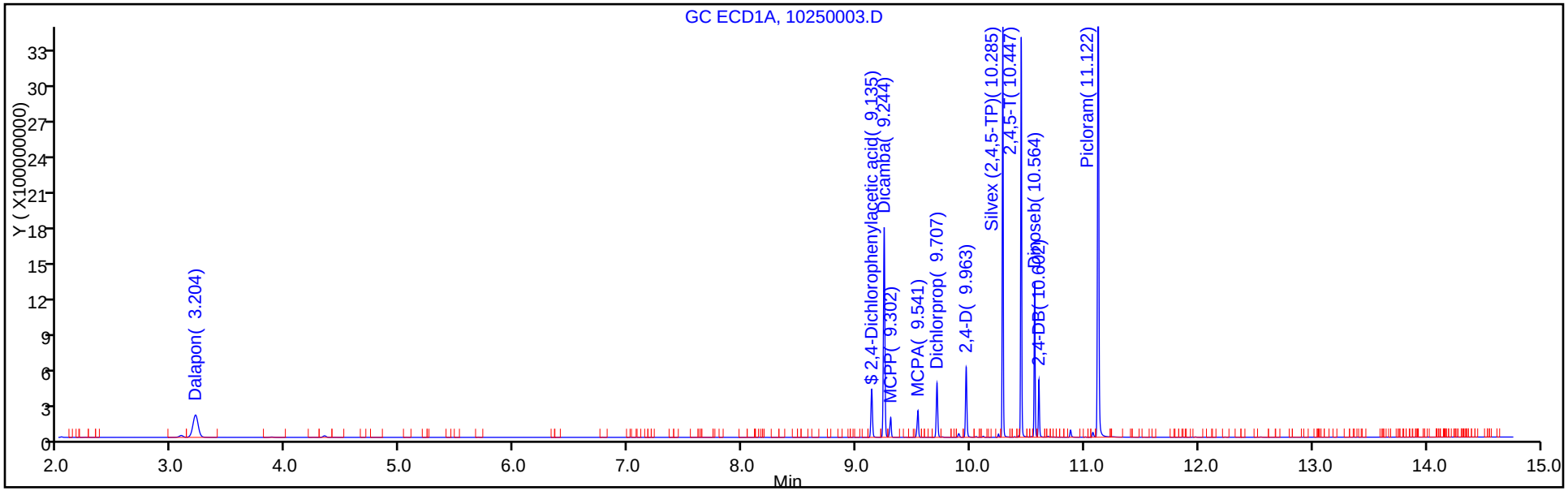
Report Date: 26-Oct-2016 08:21:20 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

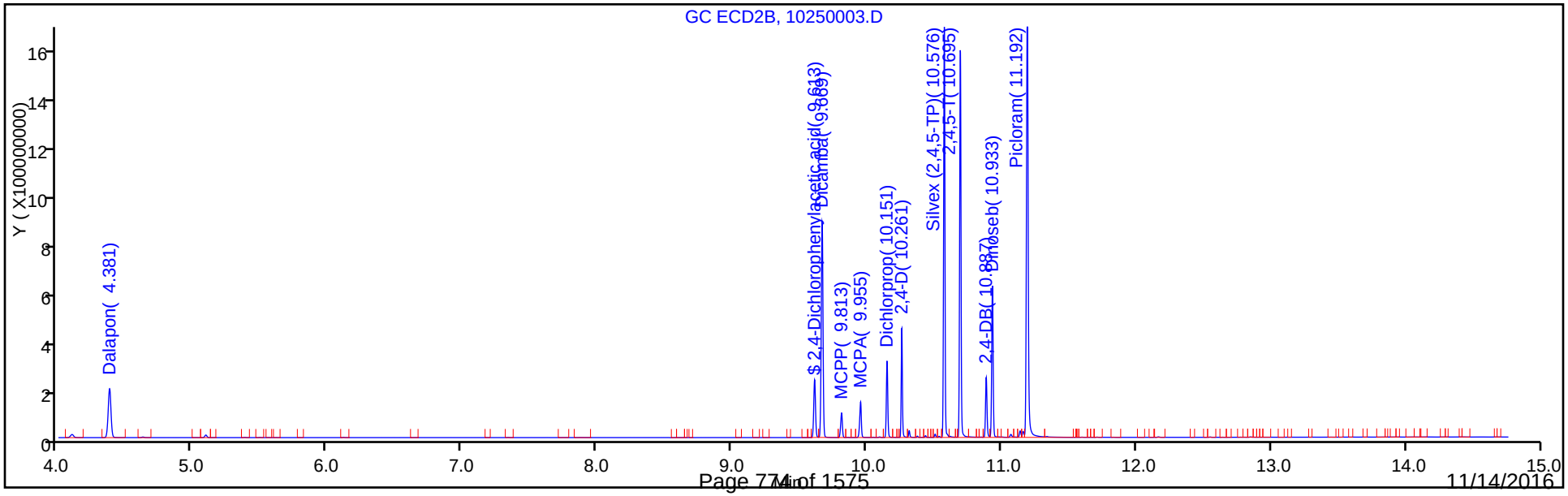
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250003.D

Injection Date:	25-Oct-2016 13:57:45	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD7			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250004.D
Lims ID: STD6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 25-Oct-2016 14:20:32 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD6
Misc. Info.: 280-0052267-004
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:23 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.205	3.206	-0.001	329389437	0.9178	0.8904	
2	4.380	4.385	-0.005	149612332	0.9178	0.8933	
						RPD = 0.33	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.135	9.140	-0.005	223622474	0.9276	0.9411	
2	9.613	9.619	-0.006	122378321	0.9276	0.9467	
						RPD = 0.60	
4 Dicamba							
1	9.245	9.250	-0.005	906850340	0.9413	0.9696	
2	9.669	9.675	-0.006	453703474	0.9413	0.9669	
						RPD = 0.28	
5 MCPP							
1	9.298	9.300	-0.002	82919069	94.2	99.0	
2	9.810	9.815	-0.005	48484054	94.2	98.9	
						RPD = 0.12	
6 MCPA							
1	9.536	9.539	-0.003	112172021	93.8	98.6	
2	9.951	9.955	-0.004	68665093	93.8	98.0	
						RPD = 0.63	
7 Dichlorprop							
1	9.708	9.714	-0.006	235389944	0.9522	0.9831	
2	10.151	10.156	-0.005	130047659	0.9522	0.9853	
						RPD = 0.23	
8 2,4-D							
1	9.964	9.970	-0.006	291090202	0.9403	0.9734	
2	10.260	10.264	-0.004	154413565	0.9403	0.9724	
						RPD = 0.10	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.284	10.286	-0.002	1193241608	0.9572	0.99	
2	10.575	10.577	-0.002	649368245	0.9572	0.9871	
						RPD = 0.69	
10 2,4,5-T							
1	10.446	10.448	-0.002	1166503286	0.9527	0.9863	
2	10.695	10.696	-0.001	631062192	0.9527	0.9806	
						RPD = 0.58	
11 Dinoseb							
1	10.564	10.565	-0.001	440039464	0.9495	0.9335	
2	10.933	10.934	-0.001	249166735	0.9495	0.9238	
						RPD = 1.05	
12 2,4-DB							
1	10.601	10.604	-0.003	176746989	0.9515	0.9675	
2	10.887	10.890	-0.003	102534951	0.9515	0.9606	
						RPD = 0.72	
13 Picloram							
1	11.121	11.122	-0.001	1694244766	0.9432	0.9505	
2	11.192	11.194	-0.002	839288248	0.9432	0.9330	
						RPD = 1.86	

Reagents:

8151ICALL6_00051 Amount Added: 1.00 Units: mL

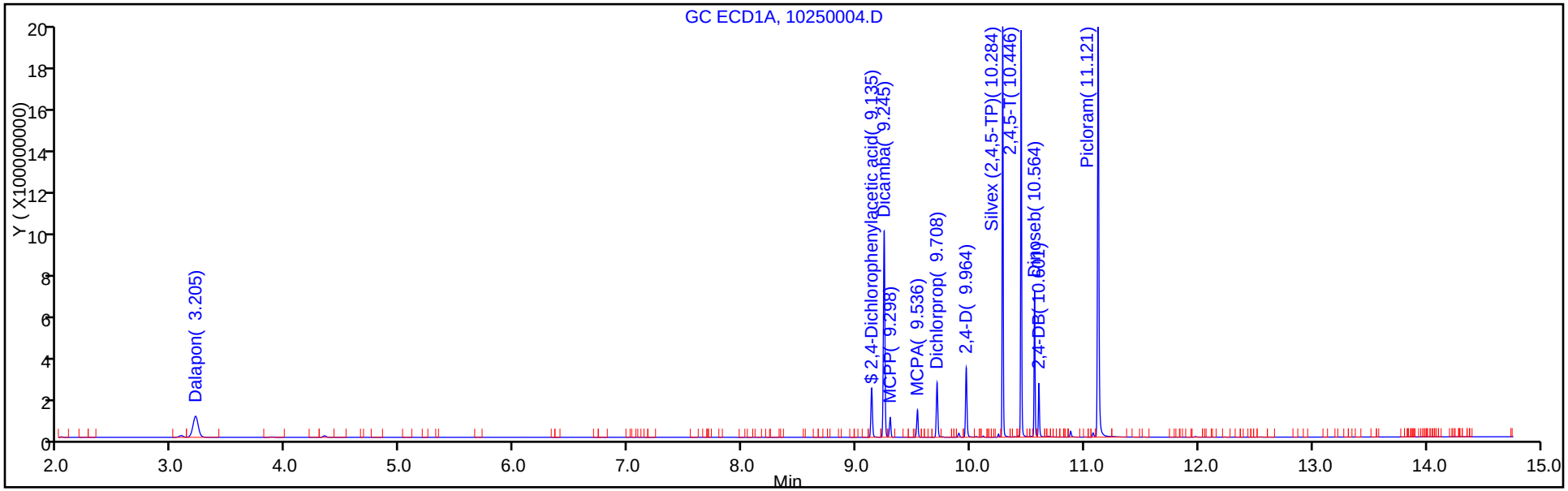
Report Date: 26-Oct-2016 08:21:24 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

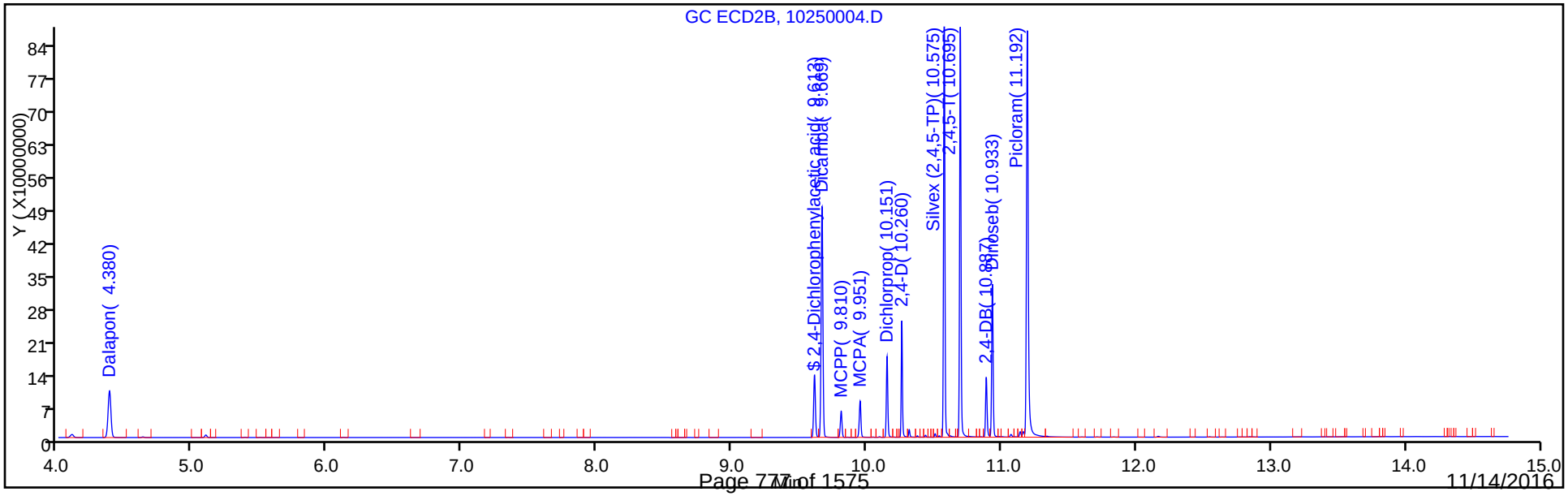
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250004.D

Injection Date:	25-Oct-2016 14:20:32	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD6			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250005.D
Lims ID: STD5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 25-Oct-2016 14:43:21 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD5
Misc. Info.: 280-0052267-005
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:27 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.205	3.206	-0.001	255392103	0.6883	0.6871	
2	4.385	4.385	0.000	115455327	0.6883	0.6868	
						RPD = 0.04	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.141	9.140	0.001	173734642	0.6957	0.7264	
2	9.620	9.619	0.001	95033637	0.6957	0.7310	
						RPD = 0.63	
4 Dicamba							
1	9.250	9.250	0.000	697297259	0.7059	0.7436	
2	9.675	9.675	0.000	350363602	0.7059	0.7436	
						RPD = 0.00	
5 MCPP							
1	9.302	9.300	0.002	62408076	70.6	74.7	
2	9.816	9.815	0.001	36836933	70.6	75.2	
						RPD = 0.65	
6 MCPA							
1	9.541	9.539	0.002	84730684	70.3	74.4	
2	9.956	9.955	0.001	52203632	70.3	74.3	
						RPD = 0.14	
7 Dichlorprop							
1	9.714	9.714	0.000	180689229	0.7142	0.7504	
2	10.156	10.156	0.000	99619893	0.7142	0.7511	
						RPD = 0.09	
8 2,4-D							
1	9.971	9.970	0.001	223241772	0.7052	0.7431	
2	10.264	10.264	0.000	118237194	0.7052	0.7412	
						RPD = 0.26	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.286	10.286	0.000	906957235	0.7179	0.7533	
2	10.576	10.577	-0.001	497309716	0.7179	0.7529	
						RPD = 0.05	
10 2,4,5-T							
1	10.448	10.448	0.000	884235973	0.7145	0.7462	
2	10.696	10.696	0.000	482372251	0.7145	0.7472	
						RPD = 0.14	
11 Dinoseb							
1	10.565	10.565	0.000	357004477	0.7121	0.7575	
2	10.933	10.934	-0.001	202005776	0.7121	0.7483	
						RPD = 1.22	
12 2,4-DB							
1	10.604	10.604	0.000	135288488	0.7136	0.7380	
2	10.888	10.890	-0.002	77924425	0.7136	0.7282	
						RPD = 1.33	
13 Picloram							
1	11.122	11.122	0.000	1278553158	0.7074	0.7173	
2	11.192	11.194	-0.002	641117113	0.7074	0.7114	
						RPD = 0.83	

Reagents:

8151ICALL5_00049 Amount Added: 1.00 Units: mL

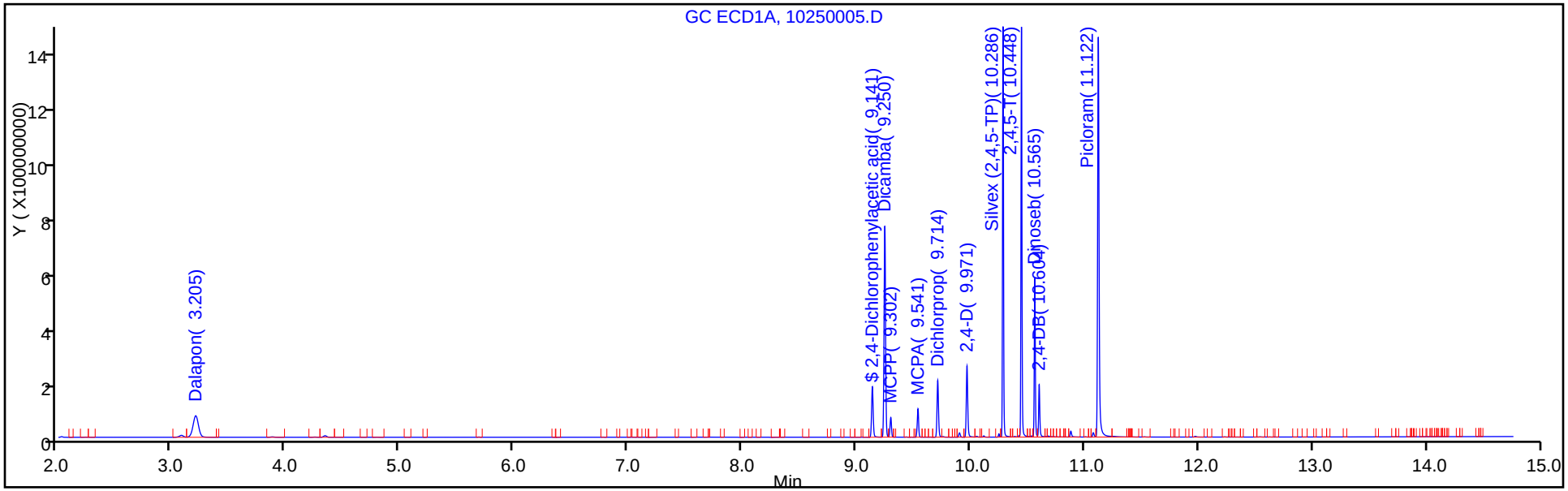
Report Date: 26-Oct-2016 08:21:29 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

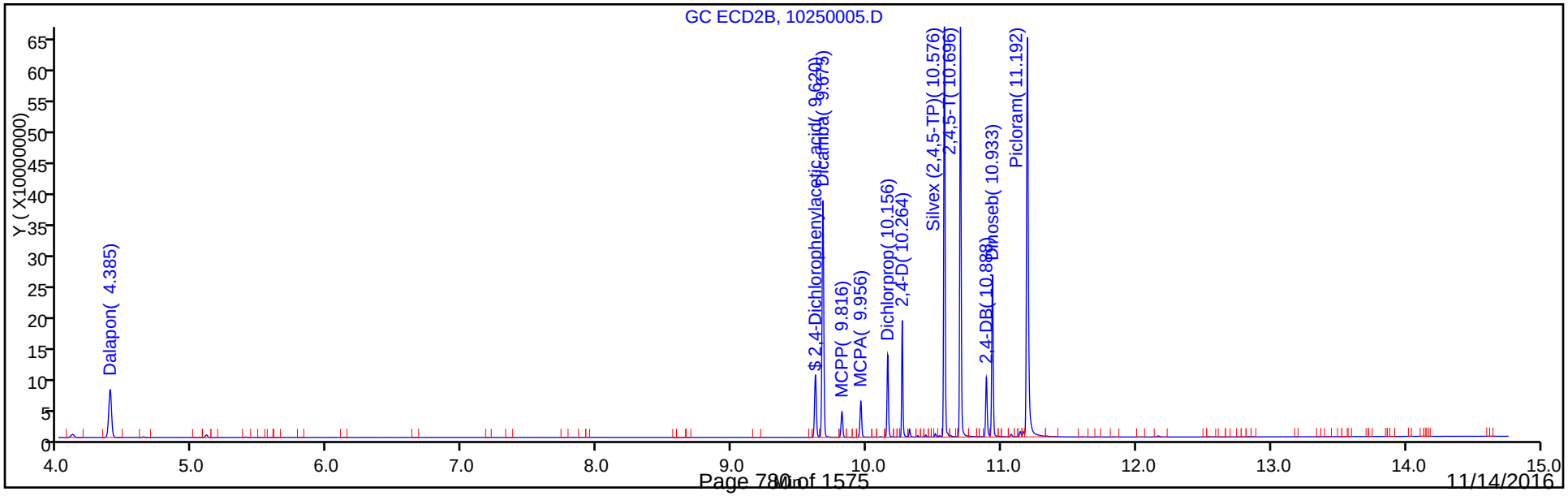
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250005.D

Injection Date:	25-Oct-2016 14:43:21	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD5			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250006.D
Lims ID: STD4
Client ID:
Sample Type: ICRT Calib Level: 4
Inject. Date: 25-Oct-2016 15:06:06 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD4
Misc. Info.: 280-0052267-006
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:31 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.206	3.206	0.000	178992388	0.4589	0.4772	
2	4.385	4.385	0.000	80786070	0.4589	0.4773	
						RPD = 0.02	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.140	9.140	0.000	112351222	0.4638	0.4622	
2	9.619	9.619	0.000	61033707	0.4638	0.4628	
						RPD = 0.12	
4 Dicamba							
1	9.250	9.250	0.000	440757816	0.4706	0.4669	
2	9.675	9.675	0.000	223769243	0.4706	0.4701	
						RPD = 0.68	
5 MCPP							
1	9.300	9.300	0.000	37804749	47.1	45.6	
2	9.815	9.815	0.000	22376196	47.1	45.8	
						RPD = 0.47	
6 MCPA							
1	9.539	9.539	0.000	51966543	46.9	45.4	
2	9.955	9.955	0.000	32416365	46.9	45.7	
						RPD = 0.69	
7 Dichlorprop							
1	9.714	9.714	0.000	114192096	0.4761	0.4676	
2	10.156	10.156	0.000	62678852	0.4761	0.4666	
						RPD = 0.20	
8 2,4-D							
1	9.970	9.970	0.000	140749298	0.4702	0.4631	
2	10.264	10.264	0.000	74826279	0.4702	0.4637	
						RPD = 0.13	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.286	10.286	0.000	570652093	0.4786	0.4705	
2	10.577	10.577	0.000	315736965	0.4786	0.4731	
						RPD = 0.56	
10 2,4,5-T							
1	10.448	10.448	0.000	558740976	0.4763	0.4692	
2	10.696	10.696	0.000	307175530	0.4763	0.4721	
						RPD = 0.62	
11 Dinoseb							
1	10.565	10.565	0.000	239475085	0.4748	0.5084	
2	10.934	10.934	0.000	138082779	0.4748	0.5105	
						RPD = 0.42	
12 2,4-DB							
1	10.604	10.604	0.000	88021669	0.4757	0.4762	
2	10.890	10.890	0.000	51150981	0.4757	0.4753	
						RPD = 0.19	
13 Picloram							
1	11.122	11.122	0.000	862958322	0.4716	0.4842	
2	11.194	11.194	0.000	439920428	0.4716	0.4864	
						RPD = 0.46	

Reagents:

8151ICALL4_00116 Amount Added: 1.00 Units: mL

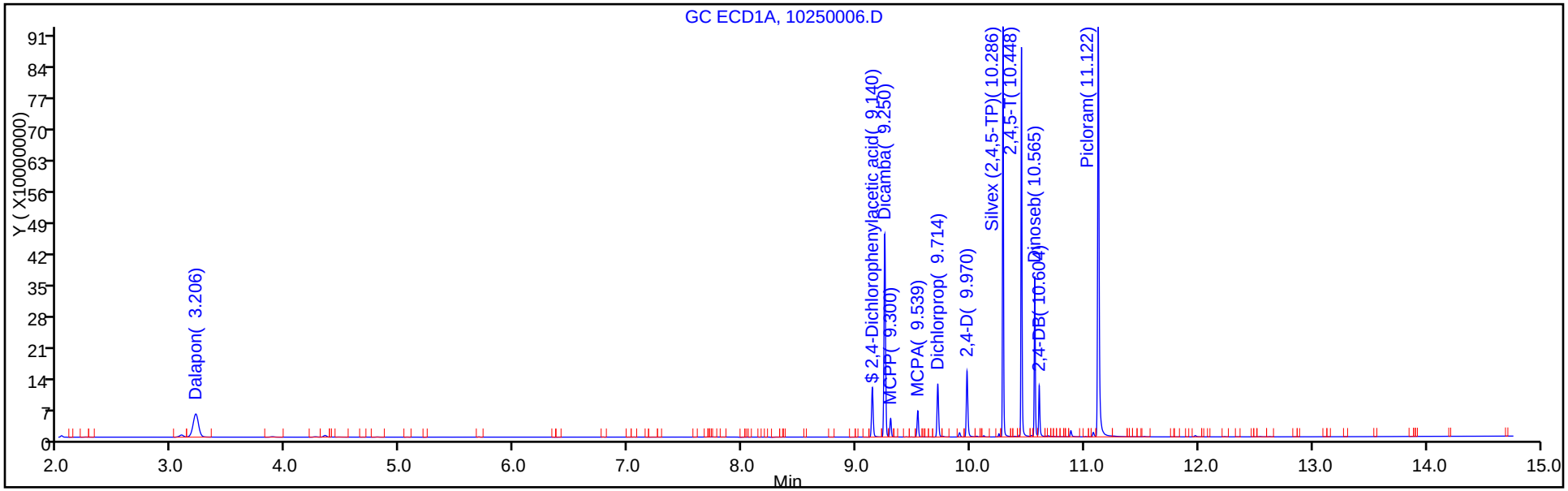
Report Date: 26-Oct-2016 08:21:33 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

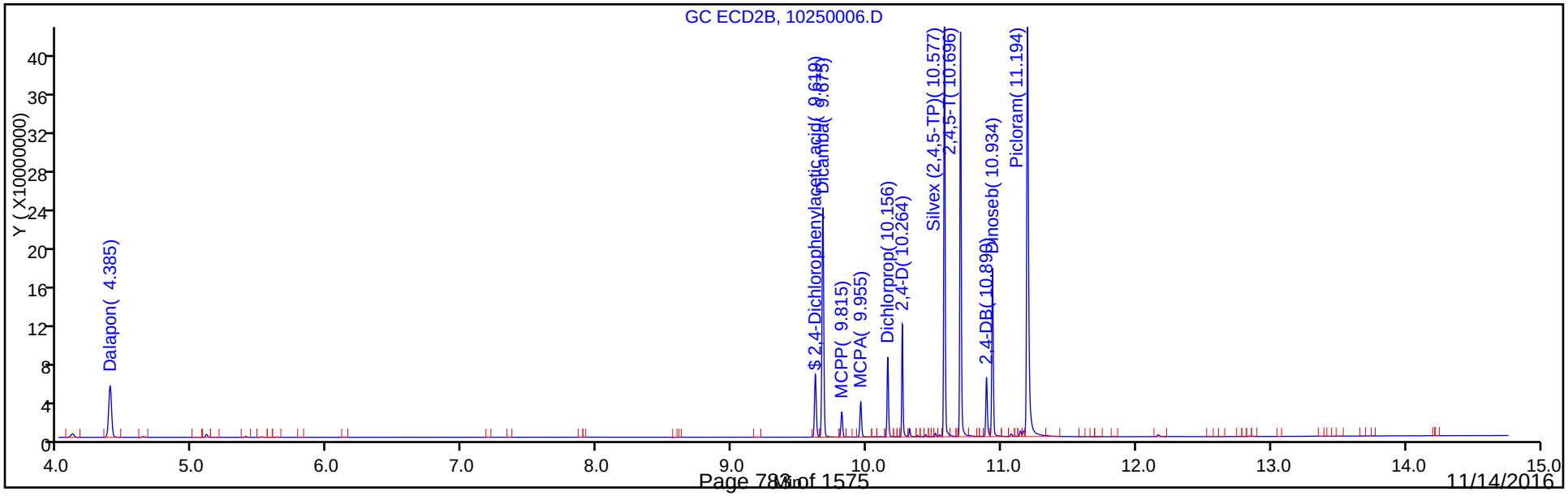
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250006.D

Injection Date:	25-Oct-2016 15:06:06	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD4			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250007.D
Lims ID: STD3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 25-Oct-2016 15:28:58 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD3
Misc. Info.: 280-0052267-007
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:35 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.205	3.206	-0.001	92849317	0.2294	0.2405	
2	4.385	4.385	0.000	41196149	0.2294	0.2379	
						RPD = 1.06	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.140	9.140	0.000	60816029	0.2319	0.2404	
2	9.619	9.619	0.000	32555400	0.2319	0.2381	
						RPD = 0.97	
4 Dicamba							
1	9.249	9.250	-0.001	226446797	0.2353	0.2358	
2	9.675	9.675	0.000	116762813	0.2353	0.2389	
						RPD = 1.31	
5 MCPP							
1	9.299	9.300	-0.001	18486043	23.5	22.7	
2	9.814	9.815	-0.001	11137612	23.5	22.9	
						RPD = 1.02	
6 MCPA							
1	9.538	9.539	-0.001	26229239	23.4	22.7	
2	9.955	9.955	0.000	16888044	23.4	23.3	
						RPD = 2.89	
7 Dichlorprop							
1	9.715	9.714	0.001	60153462	0.2381	0.2377	
2	10.157	10.156	0.001	33359475	0.2381	0.2409	
						RPD = 1.34	
8 2,4-D							
1	9.974	9.970	0.004	73447176	0.2351	0.2347	
2	10.265	10.264	0.001	39524839	0.2351	0.2380	
						RPD = 1.42	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.286	10.286	0.000	290556284	0.2393	0.2350	
2	10.577	10.577	0.000	164696191	0.2393	0.2404	
						RPD = 2.28	
10 2,4,5-T							
1	10.449	10.448	0.001	281753190	0.2382	0.2336	
2	10.698	10.696	0.002	159080076	0.2382	0.2396	
						RPD = 2.55	
11 Dinoseb							
1	10.565	10.565	0.000	109697794	0.2374	0.2333	
2	10.934	10.934	0.000	66070093	0.2374	0.2426	
						RPD = 3.93	
12 2,4-DB							
1	10.604	10.604	0.000	43874780	0.2379	0.2318	
2	10.890	10.890	0.000	26640875	0.2379	0.2438	
						RPD = 5.08	
13 Picloram							
1	11.124	11.122	0.002	412489822	0.2358	0.2315	
2	11.195	11.194	0.001	221408055	0.2358	0.2421	
						RPD = 4.47	

Reagents:

8151ICALL3_00049 Amount Added: 1.00 Units: mL

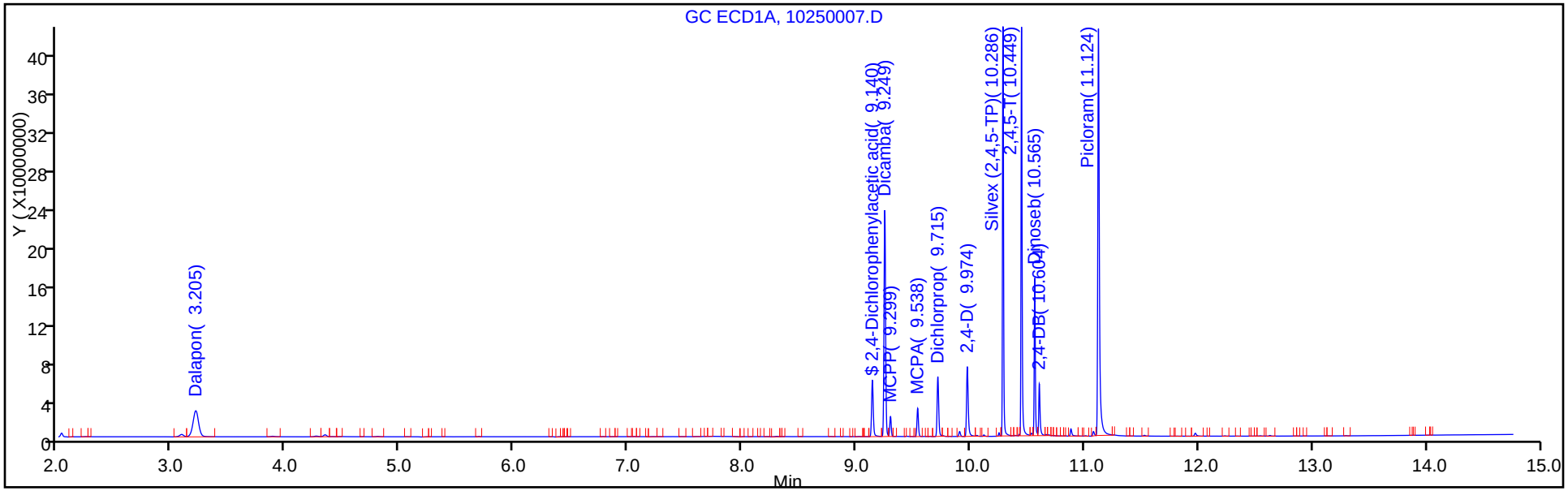
Report Date: 26-Oct-2016 08:21:37 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

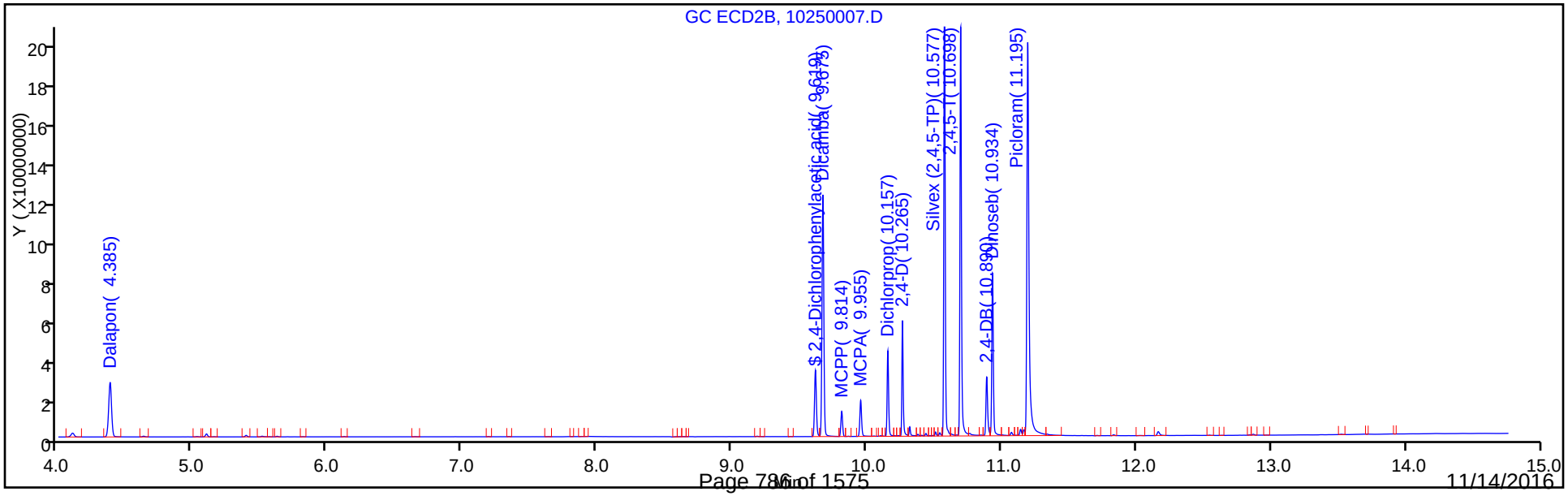
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250007.D

Injection Date:	25-Oct-2016 15:28:58	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD3			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250008.D
Lims ID: STD2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 25-Oct-2016 15:51:44 ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD2
Misc. Info.: 280-0052267-008
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:40 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.205	3.206	-0.001	40419458	0.0918	0.0964	
2	4.383	4.385	-0.002	17787777	0.0918	0.0964	
						RPD = 0.02	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.142	9.140	0.002	27886753	0.0928	0.0987	
2	9.620	9.619	0.001	14796776	0.0928	0.0980	
						RPD = 0.72	
4 Dicamba							
1	9.250	9.250	0.000	97572882	0.0941	0.0968	
2	9.674	9.675	-0.001	51665860	0.0941	0.0982	
						RPD = 1.50	
5 MCPP							
1	9.299	9.300	-0.001	7269836	9.42	9.38	
2	9.814	9.815	-0.001	4523085	9.42	9.44	
						RPD = 0.66	
6 MCPA							
1	9.538	9.539	-0.001	11318903	9.38	9.50	
2	9.955	9.955	0.000	7252421	9.38	9.45	
						RPD = 0.55	
7 Dichlorprop							
1	9.717	9.714	0.003	28167814	0.0952	0.1016	
2	10.157	10.156	0.001	15097647	0.0952	0.1003	
						RPD = 1.32	
8 2,4-D							
1	9.977	9.970	0.007	33535826	0.0940	0.0992	
2	10.267	10.264	0.003	17863320	0.0940	0.0996	
						RPD = 0.36	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.287	10.286	0.001	130374513	0.0957	0.1003	
2	10.577	10.577	0.000	74956934	0.0957	0.1022	
						RPD = 1.82	
10 2,4,5-T							
1	10.451	10.448	0.003	123463499	0.0953	0.0989	
2	10.699	10.696	0.003	70386692	0.0953	0.1004	
						RPD = 1.47	
11 Dinoseb							
1	10.566	10.565	0.001	43481484	0.0950	0.0929	
2	10.934	10.934	0.000	26637832	0.0950	0.0959	
						RPD = 3.19	
12 2,4-DB							
1	10.608	10.604	0.004	20302940	0.0951	0.1012	
2	10.893	10.890	0.003	11659052	0.0951	0.1023	
						RPD = 1.09	
13 Picloram							
1	11.126	11.122	0.004	164818840	0.0943	0.0926	
2	11.197	11.194	0.003	92119545	0.0943	0.0975	
						RPD = 5.20	

Reagents:

8151ICALL2_00056 Amount Added: 1.00 Units: mL

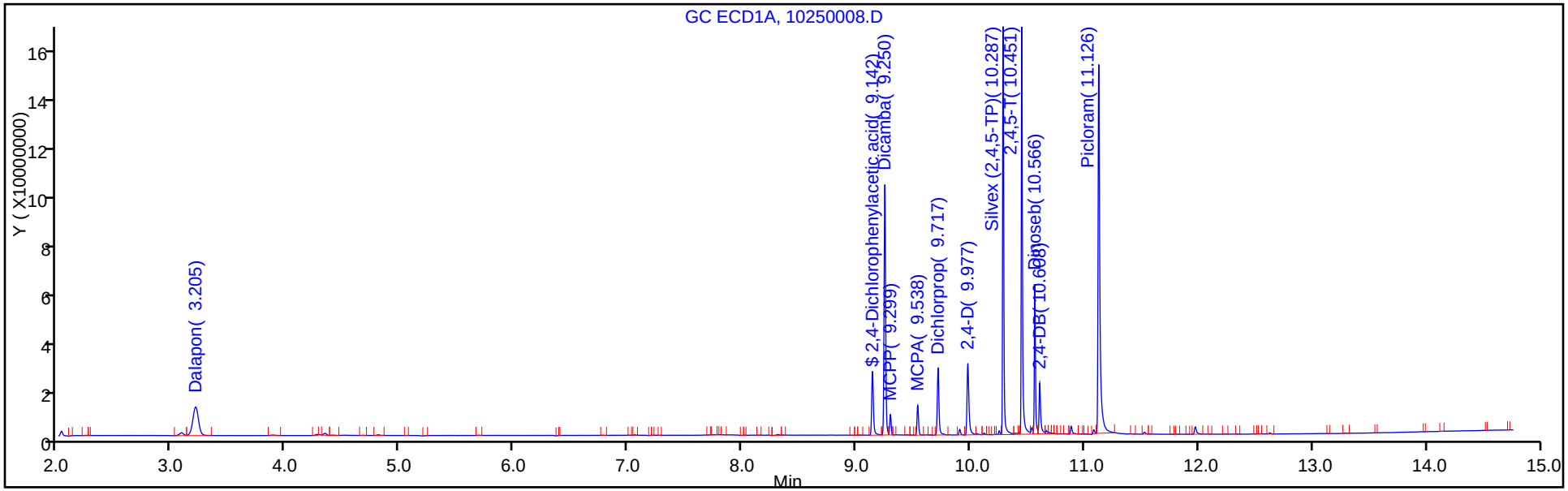
Report Date: 26-Oct-2016 08:21:41 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

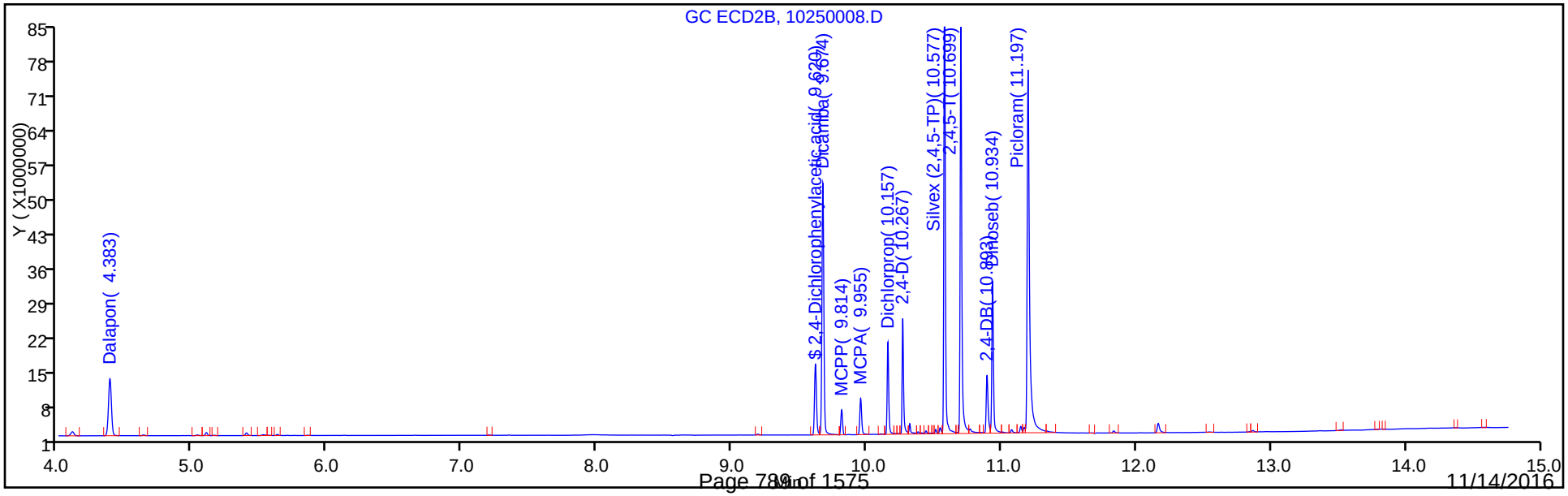
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250008.D

Injection Date:	25-Oct-2016 15:51:44	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD2			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D
Lims ID: STD1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 25-Oct-2016 16:14:35 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD1
Misc. Info.: 280-0052267-009
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:44 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.203	3.206	-0.003	21455414	0.0459	0.0443	
2	4.382	4.385	-0.003	9178008	0.0459	0.0444	
						RPD = 0.19	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.143	9.140	0.003	15307447	0.0464	0.0445	
2	9.620	9.619	0.001	8054547	0.0464	0.0448	
						RPD = 0.52	
4 Dicamba							
1	9.250	9.250	0.000	50777720	0.0471	0.0463	
2	9.675	9.675	0.000	27401087	0.0471	0.0458	
						RPD = 1.06	
5 MCPP							
1	9.299	9.300	-0.001	3353306	4.71	4.74	
2	9.815	9.815	0.000	2199008	4.71	4.72	
						RPD = 0.56	
6 MCPA							
1	9.539	9.539	0.000	5861777	4.69	4.68	
2	9.955	9.955	0.000	3936013	4.69	4.67	
						RPD = 0.27	
7 Dichlorprop							
1	9.718	9.714	0.004	15091498	0.0476	0.0460	
2	10.158	10.156	0.002	8073863	0.0476	0.0462	
						RPD = 0.46	
8 2,4-D							
1	9.981	9.970	0.011	17761357	0.0470	0.0457	
2	10.269	10.264	0.005	9399985	0.0470	0.0455	
						RPD = 0.45	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.289	10.286	0.003	66699352	0.0479	0.0468	
2	10.578	10.577	0.001	38586101	0.0479	0.0461	
						RPD = 1.41	
10 2,4,5-T							
1	10.454	10.448	0.006	62226161	0.0476	0.0468	
2	10.700	10.696	0.004	35893315	0.0476	0.0462	
						RPD = 1.27	
11 Dinoseb							
1	10.567	10.565	0.002	22167375	0.0475	0.0477	
2	10.935	10.934	0.001	13402688	0.0475	0.0467	
						RPD = 2.22	
12 2,4-DB							
1	10.611	10.604	0.007	10367445	0.0476	0.0462	
2	10.895	10.890	0.005	5646669	0.0476	0.0456	
						RPD = 1.44	
13 Picloram							
1	11.130	11.122	0.008	84649442	0.0472	0.0476	
2	11.200	11.194	0.006	46080420	0.0472	0.0460	
						RPD = 3.34	

Reagents:

8151ICALL1_00055 Amount Added: 1.00 Units: mL

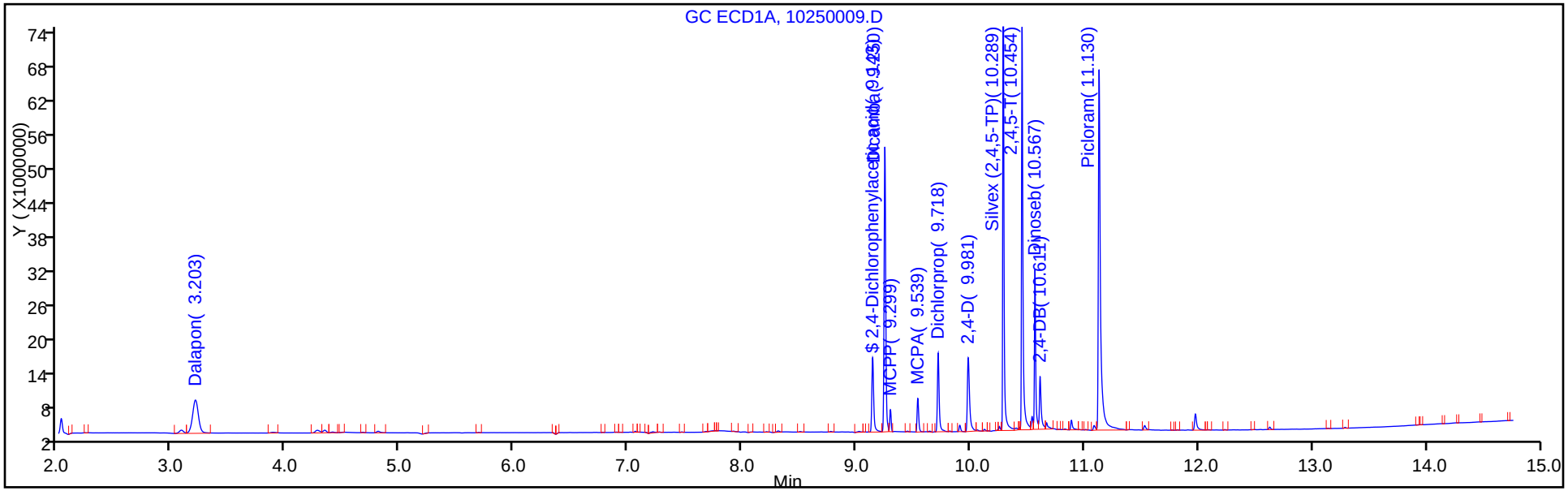
Report Date: 26-Oct-2016 08:21:45 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

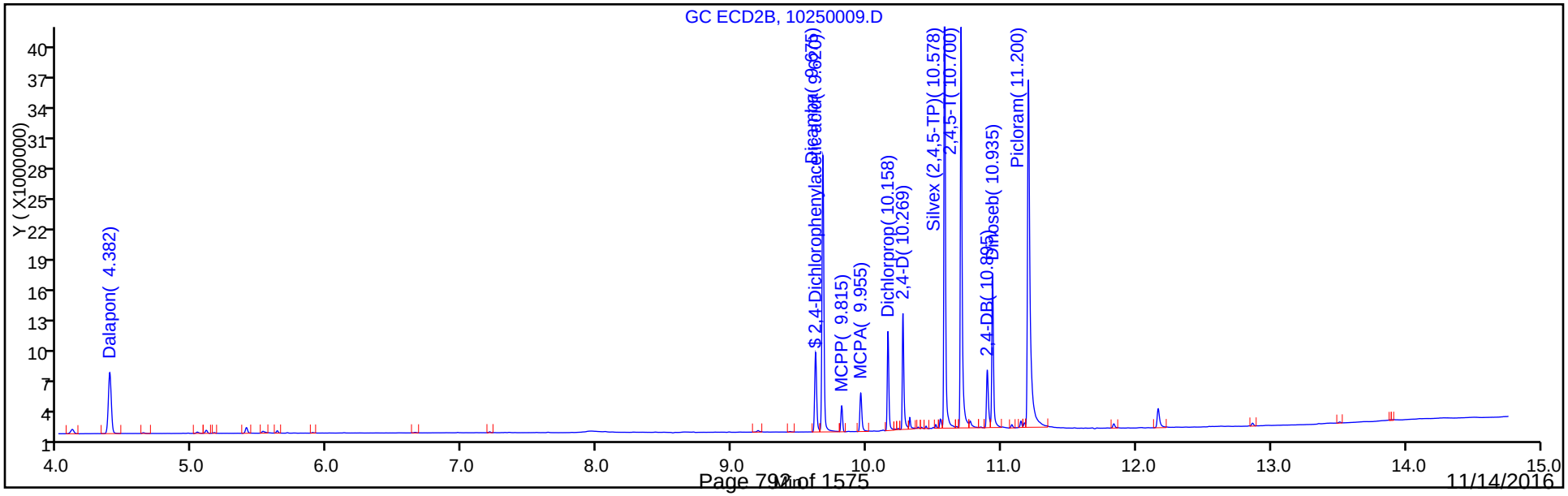
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Injection Date:	25-Oct-2016 16:14:35	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD1			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1 Analy Batch No.: 348088

SDG No.:

Instrument ID: SGC_M GC Column: RTI-XLB ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/25/2016 13:57 Calibration End Date: 10/25/2016 16:14 Calibration ID: 27382

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-348088/9	10250009.D
Level 2	STD2 280-348088/8	10250008.D
Level 3	STD3 280-348088/7	10250007.D
Level 4	STD4 280-348088/6	10250006.D
Level 5	STD5 280-348088/5	10250005.D
Level 6	STD6 280-348088/4	10250004.D
Level 7	STD7 280-348088/3	10250003.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Dalapon	4.382	4.383	4.385	4.385	4.385	4.380	4.381				4.355 - 4.415	4.383
Dicamba	9.675	9.674	9.675	9.675	9.675	9.669	9.669				9.645 - 9.705	9.673
MCPP	9.815	9.814	9.814	9.815	9.816	9.810	9.813				9.785 - 9.845	9.814
MCPA	9.955	9.955	9.955	9.955	9.956	9.951	9.955				9.925 - 9.985	9.955
Dichlorprop	10.158	10.157	10.157	10.156	10.156	10.151	10.151				10.126 - 10.186	10.155
2,4-D	10.269	10.267	10.265	10.264	10.264	10.260	10.261				10.234 - 10.294	10.264
Silvex (2,4,5-TP)	10.578	10.577	10.577	10.577	10.576	10.575	10.576				10.547 - 10.607	10.577
2,4,5-T	10.700	10.699	10.698	10.696	10.696	10.695	10.695				10.666 - 10.726	10.697
2,4-DB	10.895	10.893	10.890	10.890	10.888	10.887	10.887				10.860 - 10.920	10.890
Dinoseb	10.935	10.934	10.934	10.934	10.933	10.933	10.933				10.904 - 10.964	10.934
2,4-Dichlorophenylacetic acid	9.620	9.620	9.619	9.619	9.620	9.613	9.613				9.589 - 9.649	9.618

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 320-22881-1 Analy Batch No.: 348088

SDG No.:

Instrument ID: SGC_M GC Column: RTI-XLB ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/25/2016 13:57 Calibration End Date: 10/25/2016 16:14 Calibration ID: 27382

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-348088/9	10250009.D
Level 2	STD2 280-348088/8	10250008.D
Level 3	STD3 280-348088/7	10250007.D
Level 4	STD4 280-348088/6	10250006.D
Level 5	STD5 280-348088/5	10250005.D
Level 6	STD6 280-348088/4	10250004.D
Level 7	STD7 280-348088/3	10250003.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
Dalapon	200011071 167736787	193819417 163020792	179552815 155635820	176052454	Lin2	1841824.28	165413555							0.9970		0.9900
Dicamba	582227612 496309662	548906879 482022283	496203189 414668222	475472495	Lin2	6202851.97	462842583							0.9950		0.9900
MCPP	467077 521620	480360 514909	473134 459241	475279	Lin2	-118515.14	491499.646							0.9970		0.9900
MCPA	839602 742380	773517 732357	720487 645174	691482	Lin2	699365.570	693619.106							0.9970		0.9900
Dichlorprop	169583344 139494354	158555419 136575991	140136421 117709837	131650603	Lin2	2073417.18	129878045							0.9960		0.9900
2,4-D	199935872 167658824	189974689 164217340	168137143 140449328	159154055	Lin2	2287397.92	156437184							0.9950		0.9900
Silvex (2,4,5-TP)	806270720 692764584	783126302 678439372	688277453 585287871	659743959	Lin2	8633448.65	649090771							0.9950		0.9900
2,4,5-T	753546738 675130427	738851540 662428166	667947624 578559129	644886433	Lin2	6443939.73	636953232							0.9960		0.9900
2,4-DB	118696074 109200939	122539829 107767041	112001156 97048191	107522163	Lin2	823104.800	105882922							0.9960		0.9900
Dinoseb	282310437 283666177	280545887 262418889	278336358 238246702	290853668	Lin2	849341.644	268805876							0.9940		0.9900
2,4-Dichlorophenylacetic acid	173664230 136601462	159516774 131930057	140385511 113181173	131594884	Lin2	2379465.28	126751346							0.9950		0.9900

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 320-22881-1 Analy Batch No.: 348088

SDG No.:

Instrument ID: SGC_M GC Column: RTI-XLB ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/25/2016 13:57 Calibration End Date: 10/25/2016 16:14 Calibration ID: 27382

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-348088/9	10250009.D
Level 2	STD2 280-348088/8	10250008.D
Level 3	STD3 280-348088/7	10250007.D
Level 4	STD4 280-348088/6	10250006.D
Level 5	STD5 280-348088/5	10250005.D
Level 6	STD6 280-348088/4	10250004.D
Level 7	STD7 280-348088/3	10250003.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Dalapon	Lin2	9178008 149612332	17787777 285669548	41196149	80786070	115455327	0.0459 0.918	0.0918 1.84	0.229	0.459	0.688
Dicamba	Lin2	27401087 453703474	51665860 780612928	116762813	223769243	350363602	0.0471 0.941	0.0941 1.88	0.235	0.471	0.706
MCPP	Lin2	2199008 48484054	4523085 86484596	11137612	22376196	36836933	4.71 94.2	9.42 188	23.5	47.1	70.6
MCPA	Lin2	3936013 68665093	7252421 120981728	16888044	32416365	52203632	4.69 93.8	9.38 188	23.4	46.9	70.3
Dichlorprop	Lin2	8073863 130047659	15097647 224166614	33359475	62678852	99619893	0.0476 0.952	0.0952 1.90	0.238	0.476	0.714
2,4-D	Lin2	9399985 154413565	17863320 264129006	39524839	74826279	118237194	0.0470 0.940	0.0940 1.88	0.235	0.470	0.705
Silvex (2,4,5-TP)	Lin2	38586101 649368245	74956934 1120416572	164696191	315736965	497309716	0.0479 0.957	0.0957 1.91	0.239	0.479	0.718
2,4,5-T	Lin2	35893315 631062192	70386692 1102328709	159080076	307175530	482372251	0.0476 0.953	0.0953 1.91	0.238	0.476	0.714
2,4-DB	Lin2	5646669 102534951	11659052 184673002	26640875	51150981	77924425	0.0476 0.951	0.0951 1.90	0.238	0.476	0.714
Dinoseb	Lin2	13402688 249166735	26637832 452430487	66070093	138082779	202005776	0.0475 0.950	0.0950 1.90	0.237	0.475	0.712
2,4-Dichlorophenylacetic acid	Lin2	8054547 122378321	14796776 209973712	32555400	61033707	95033637	0.0464 0.928	0.0928 1.86	0.232	0.464	0.696

Curve Type Legend:
Lin2 = Linear 1/conc^2

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250003.D
Lims ID: STD7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 25-Oct-2016 13:57:45 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD7
Misc. Info.: 280-0052267-003
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:18 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

First Level Reviewer: wellsd Date: 26-Oct-2016 08:08:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.204	3.206	-0.002	625735880	1.84	1.70	
2	4.381	4.385	-0.004	285669548	1.84	1.72	
						RPD = 0.65	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.135	9.140	-0.005	386054986	1.86	1.64	
2	9.613	9.619	-0.006	209973712	1.86	1.64	
						RPD = 0.14	
4 Dicamba							
1	9.244	9.250	-0.006	1597862277	1.88	1.71	
2	9.669	9.675	-0.006	780612928	1.88	1.67	
						RPD = 2.46	
5 MCPP							
1	9.302	9.300	0.002	151440555	188.3	180.2	
2	9.813	9.815	-0.002	86484596	188.3	176.2	
						RPD = 2.23	
6 MCPA							
1	9.541	9.539	0.002	200823145	187.5	176.9	
2	9.955	9.955	0.000	120981728	187.5	173.4	
						RPD = 2.01	
7 Dichlorprop							
1	9.707	9.714	-0.007	408619991	1.90	1.72	
2	10.151	10.156	-0.005	224166614	1.90	1.71	
						RPD = 0.58	
8 2,4-D							
1	9.963	9.970	-0.007	503686813	1.88	1.69	
2	10.261	10.264	-0.003	264129006	1.88	1.67	
						RPD = 1.26	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.285	10.286	-0.001	2107529690	1.91	1.76	
2	10.576	10.577	-0.001	1120416572	1.91	1.71	
						RPD = 2.87	
10 2,4,5-T							
1	10.447	10.448	-0.001	2096566793	1.91	1.78	
2	10.695	10.696	-0.001	1102328709	1.91	1.72	
						RPD = 3.26	
11 Dinoseb							
1	10.564	10.565	-0.001	819473414	1.90	1.74	
2	10.933	10.934	-0.001	452430487	1.90	1.68	
						RPD = 3.38	
12 2,4-DB							
1	10.602	10.604	-0.002	324399791	1.90	1.79	
2	10.887	10.890	-0.003	184673002	1.90	1.74	
						RPD = 2.77	
13 Picloram							
1	11.122	11.122	0.000	3290850967	1.89	1.85	
2	11.192	11.194	-0.002	1585383003	1.89	1.77	
						RPD = 4.37	

Reagents:

8151ICALL7_00048 Amount Added: 1.00 Units: mL

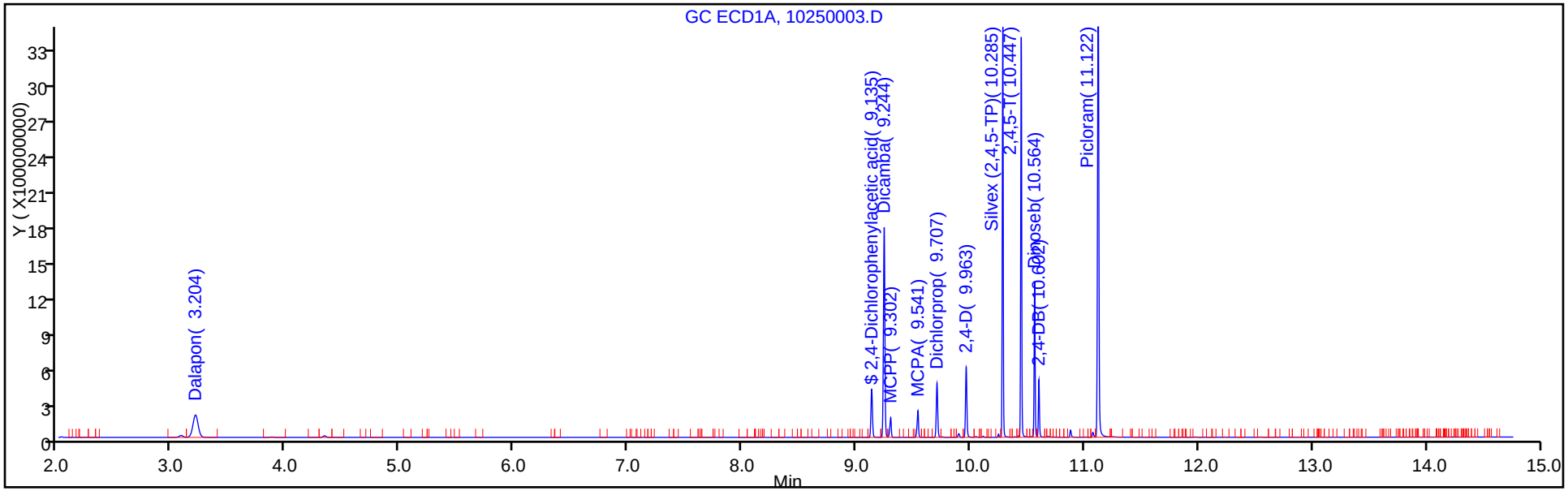
Report Date: 26-Oct-2016 08:21:20 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

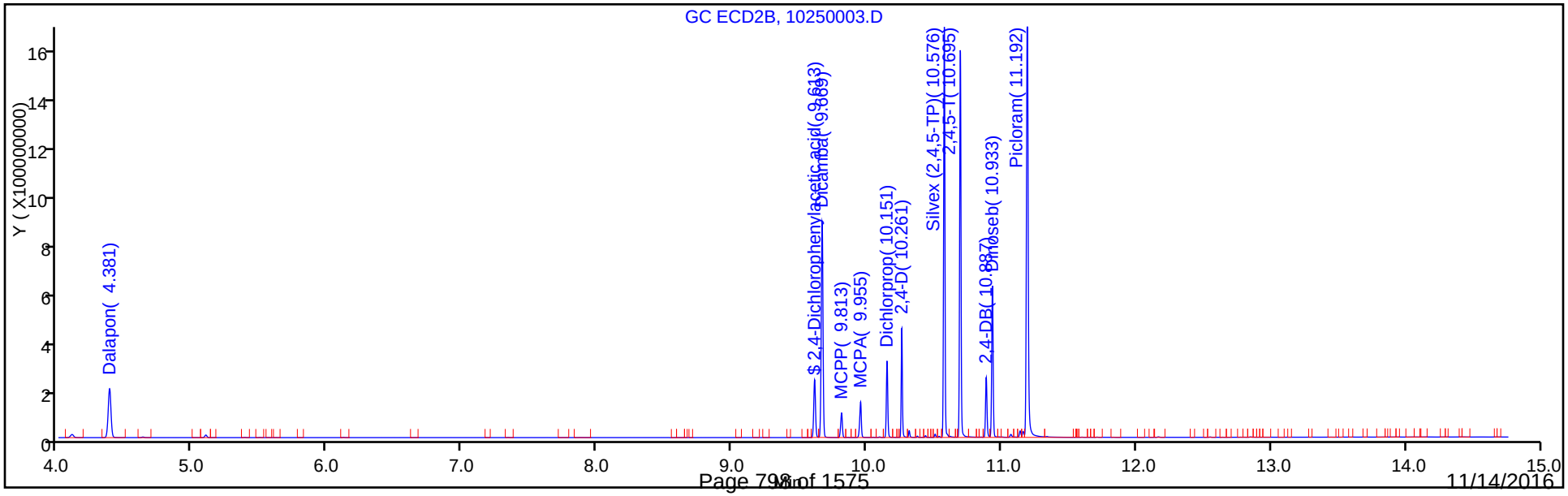
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250003.D

Injection Date:	25-Oct-2016 13:57:45	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD7			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250004.D
Lims ID: STD6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 25-Oct-2016 14:20:32 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD6
Misc. Info.: 280-0052267-004
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:23 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.205	3.206	-0.001	329389437	0.9178	0.8904	
2	4.380	4.385	-0.005	149612332	0.9178	0.8933	
						RPD = 0.33	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.135	9.140	-0.005	223622474	0.9276	0.9411	
2	9.613	9.619	-0.006	122378321	0.9276	0.9467	
						RPD = 0.60	
4 Dicamba							
1	9.245	9.250	-0.005	906850340	0.9413	0.9696	
2	9.669	9.675	-0.006	453703474	0.9413	0.9669	
						RPD = 0.28	
5 MCPP							
1	9.298	9.300	-0.002	82919069	94.2	99.0	
2	9.810	9.815	-0.005	48484054	94.2	98.9	
						RPD = 0.12	
6 MCPA							
1	9.536	9.539	-0.003	112172021	93.8	98.6	
2	9.951	9.955	-0.004	68665093	93.8	98.0	
						RPD = 0.63	
7 Dichlorprop							
1	9.708	9.714	-0.006	235389944	0.9522	0.9831	
2	10.151	10.156	-0.005	130047659	0.9522	0.9853	
						RPD = 0.23	
8 2,4-D							
1	9.964	9.970	-0.006	291090202	0.9403	0.9734	
2	10.260	10.264	-0.004	154413565	0.9403	0.9724	
						RPD = 0.10	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.284	10.286	-0.002	1193241608	0.9572	0.99	
2	10.575	10.577	-0.002	649368245	0.9572	0.9871	
						RPD = 0.69	
10 2,4,5-T							
1	10.446	10.448	-0.002	1166503286	0.9527	0.9863	
2	10.695	10.696	-0.001	631062192	0.9527	0.9806	
						RPD = 0.58	
11 Dinoseb							
1	10.564	10.565	-0.001	440039464	0.9495	0.9335	
2	10.933	10.934	-0.001	249166735	0.9495	0.9238	
						RPD = 1.05	
12 2,4-DB							
1	10.601	10.604	-0.003	176746989	0.9515	0.9675	
2	10.887	10.890	-0.003	102534951	0.9515	0.9606	
						RPD = 0.72	
13 Picloram							
1	11.121	11.122	-0.001	1694244766	0.9432	0.9505	
2	11.192	11.194	-0.002	839288248	0.9432	0.9330	
						RPD = 1.86	

Reagents:

8151ICALL6_00051 Amount Added: 1.00 Units: mL

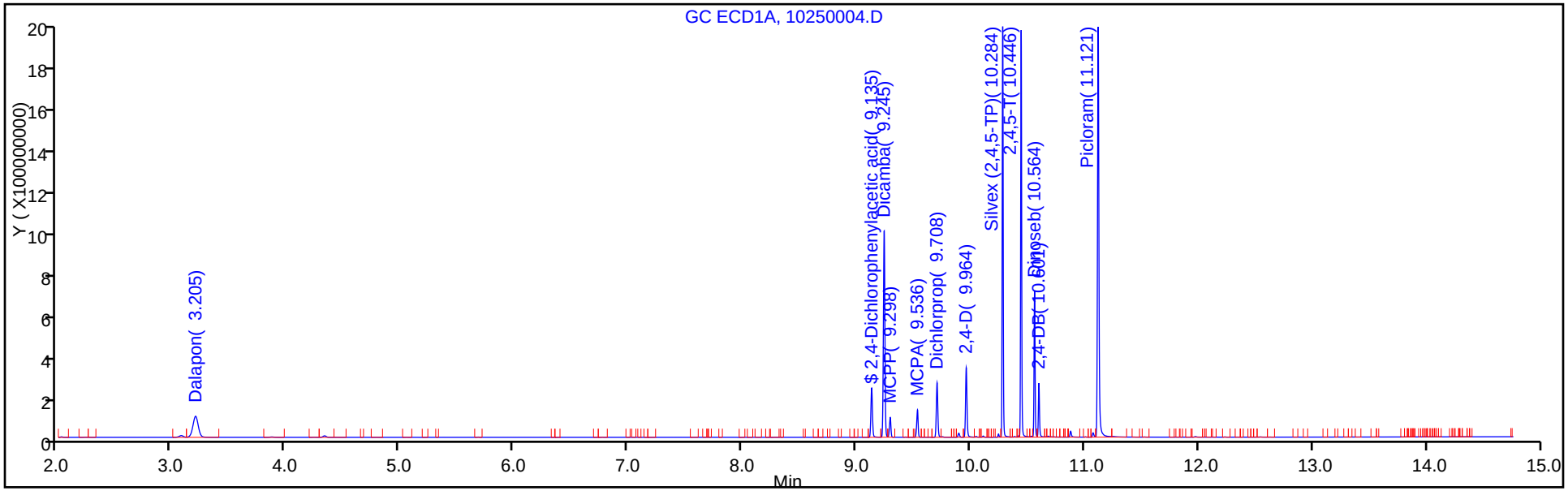
Report Date: 26-Oct-2016 08:21:25 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

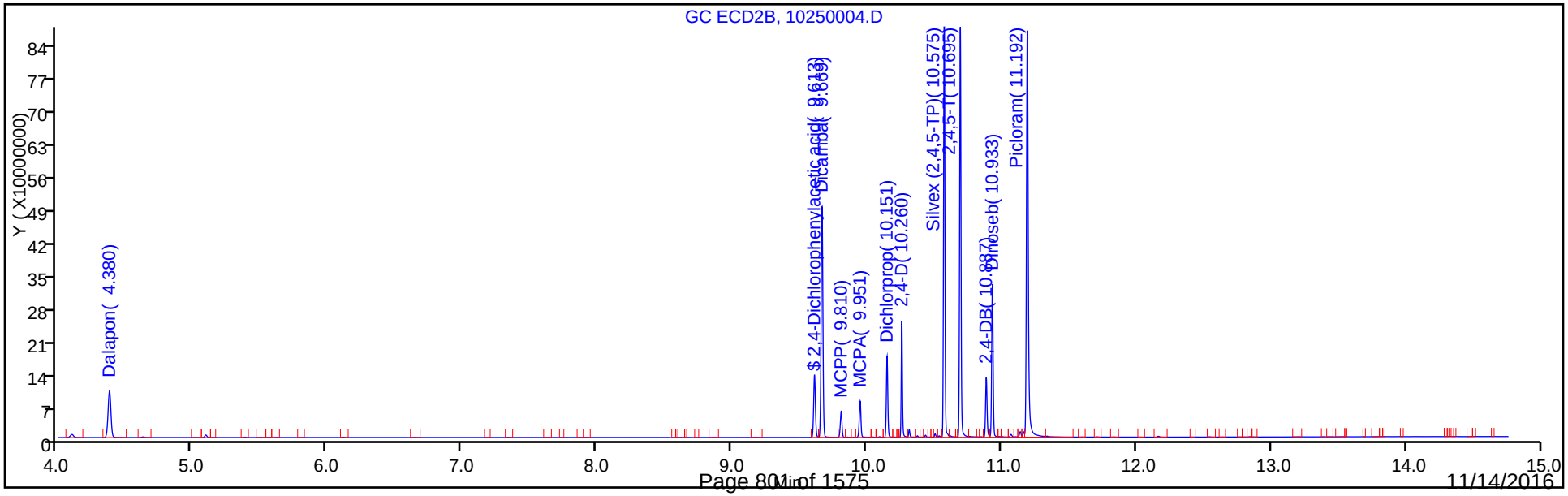
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250004.D

Injection Date:	25-Oct-2016 14:20:32	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD6			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250005.D
Lims ID: STD5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 25-Oct-2016 14:43:21 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD5
Misc. Info.: 280-0052267-005
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:27 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.205	3.206	-0.001	255392103	0.6883	0.6871	
2	4.385	4.385	0.000	115455327	0.6883	0.6868	
						RPD = 0.04	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.141	9.140	0.001	173734642	0.6957	0.7264	
2	9.620	9.619	0.001	95033637	0.6957	0.7310	
						RPD = 0.63	
4 Dicamba							
1	9.250	9.250	0.000	697297259	0.7059	0.7436	
2	9.675	9.675	0.000	350363602	0.7059	0.7436	
						RPD = 0.00	
5 MCPP							
1	9.302	9.300	0.002	62408076	70.6	74.7	
2	9.816	9.815	0.001	36836933	70.6	75.2	
						RPD = 0.65	
6 MCPA							
1	9.541	9.539	0.002	84730684	70.3	74.4	
2	9.956	9.955	0.001	52203632	70.3	74.3	
						RPD = 0.14	
7 Dichlorprop							
1	9.714	9.714	0.000	180689229	0.7142	0.7504	
2	10.156	10.156	0.000	99619893	0.7142	0.7511	
						RPD = 0.09	
8 2,4-D							
1	9.971	9.970	0.001	223241772	0.7052	0.7431	
2	10.264	10.264	0.000	118237194	0.7052	0.7412	
						RPD = 0.26	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.286	10.286	0.000	906957235	0.7179	0.7533	
2	10.576	10.577	-0.001	497309716	0.7179	0.7529	
						RPD = 0.05	
10 2,4,5-T							
1	10.448	10.448	0.000	884235973	0.7145	0.7462	
2	10.696	10.696	0.000	482372251	0.7145	0.7472	
						RPD = 0.14	
11 Dinoseb							
1	10.565	10.565	0.000	357004477	0.7121	0.7575	
2	10.933	10.934	-0.001	202005776	0.7121	0.7483	
						RPD = 1.22	
12 2,4-DB							
1	10.604	10.604	0.000	135288488	0.7136	0.7380	
2	10.888	10.890	-0.002	77924425	0.7136	0.7282	
						RPD = 1.33	
13 Picloram							
1	11.122	11.122	0.000	1278553158	0.7074	0.7173	
2	11.192	11.194	-0.002	641117113	0.7074	0.7114	
						RPD = 0.83	

Reagents:

8151ICALL5_00049 Amount Added: 1.00 Units: mL

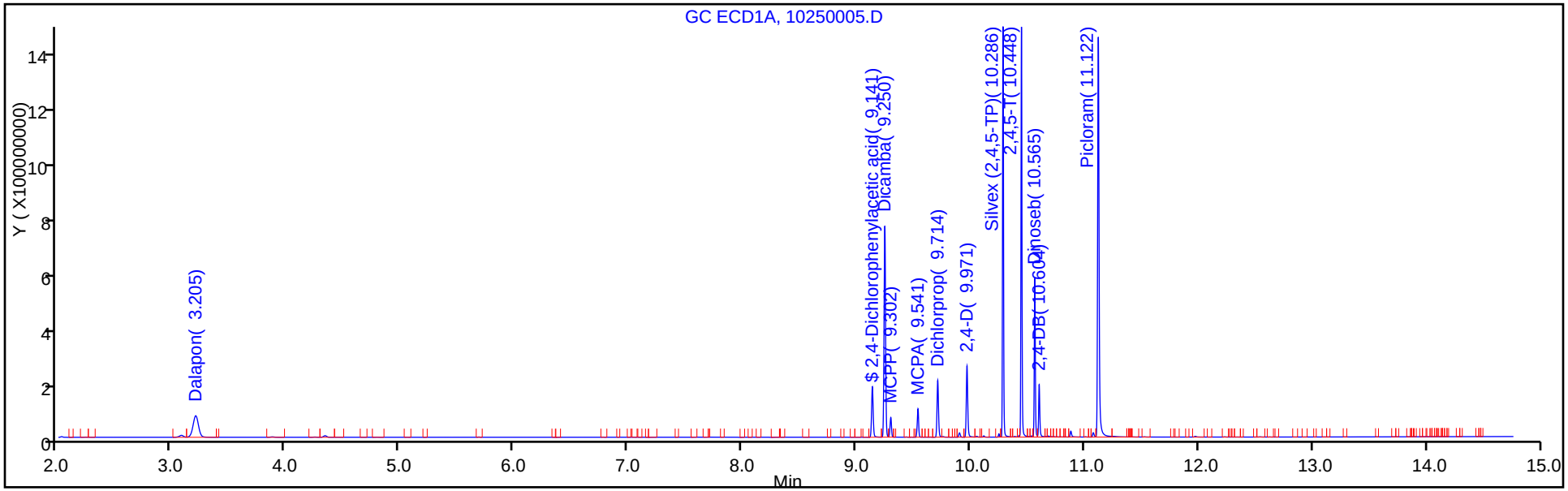
Report Date: 26-Oct-2016 08:21:29 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

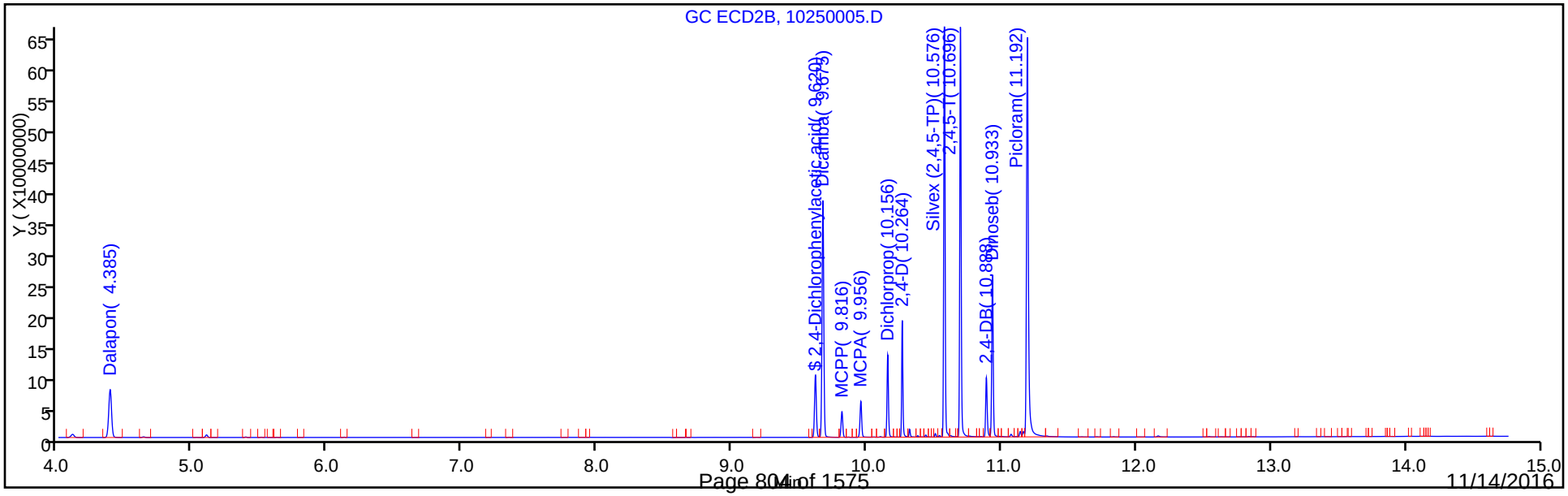
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250005.D

Injection Date:	25-Oct-2016 14:43:21	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD5			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250006.D
Lims ID: STD4
Client ID:
Sample Type: ICRT Calib Level: 4
Inject. Date: 25-Oct-2016 15:06:06 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD4
Misc. Info.: 280-0052267-006
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:31 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.206	3.206	0.000	178992388	0.4589	0.4772	
2	4.385	4.385	0.000	80786070	0.4589	0.4773	
						RPD = 0.02	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.140	9.140	0.000	112351222	0.4638	0.4622	
2	9.619	9.619	0.000	61033707	0.4638	0.4628	
						RPD = 0.12	
4 Dicamba							
1	9.250	9.250	0.000	440757816	0.4706	0.4669	
2	9.675	9.675	0.000	223769243	0.4706	0.4701	
						RPD = 0.68	
5 MCPP							
1	9.300	9.300	0.000	37804749	47.1	45.6	
2	9.815	9.815	0.000	22376196	47.1	45.8	
						RPD = 0.47	
6 MCPA							
1	9.539	9.539	0.000	51966543	46.9	45.4	
2	9.955	9.955	0.000	32416365	46.9	45.7	
						RPD = 0.69	
7 Dichlorprop							
1	9.714	9.714	0.000	114192096	0.4761	0.4676	
2	10.156	10.156	0.000	62678852	0.4761	0.4666	
						RPD = 0.20	
8 2,4-D							
1	9.970	9.970	0.000	140749298	0.4702	0.4631	
2	10.264	10.264	0.000	74826279	0.4702	0.4637	
						RPD = 0.13	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.286	10.286	0.000	570652093	0.4786	0.4705	
2	10.577	10.577	0.000	315736965	0.4786	0.4731	
						RPD = 0.56	
10 2,4,5-T							
1	10.448	10.448	0.000	558740976	0.4763	0.4692	
2	10.696	10.696	0.000	307175530	0.4763	0.4721	
						RPD = 0.62	
11 Dinoseb							
1	10.565	10.565	0.000	239475085	0.4748	0.5084	
2	10.934	10.934	0.000	138082779	0.4748	0.5105	
						RPD = 0.42	
12 2,4-DB							
1	10.604	10.604	0.000	88021669	0.4757	0.4762	
2	10.890	10.890	0.000	51150981	0.4757	0.4753	
						RPD = 0.19	
13 Picloram							
1	11.122	11.122	0.000	862958322	0.4716	0.4842	
2	11.194	11.194	0.000	439920428	0.4716	0.4864	
						RPD = 0.46	

Reagents:

8151ICALL4_00116 Amount Added: 1.00 Units: mL

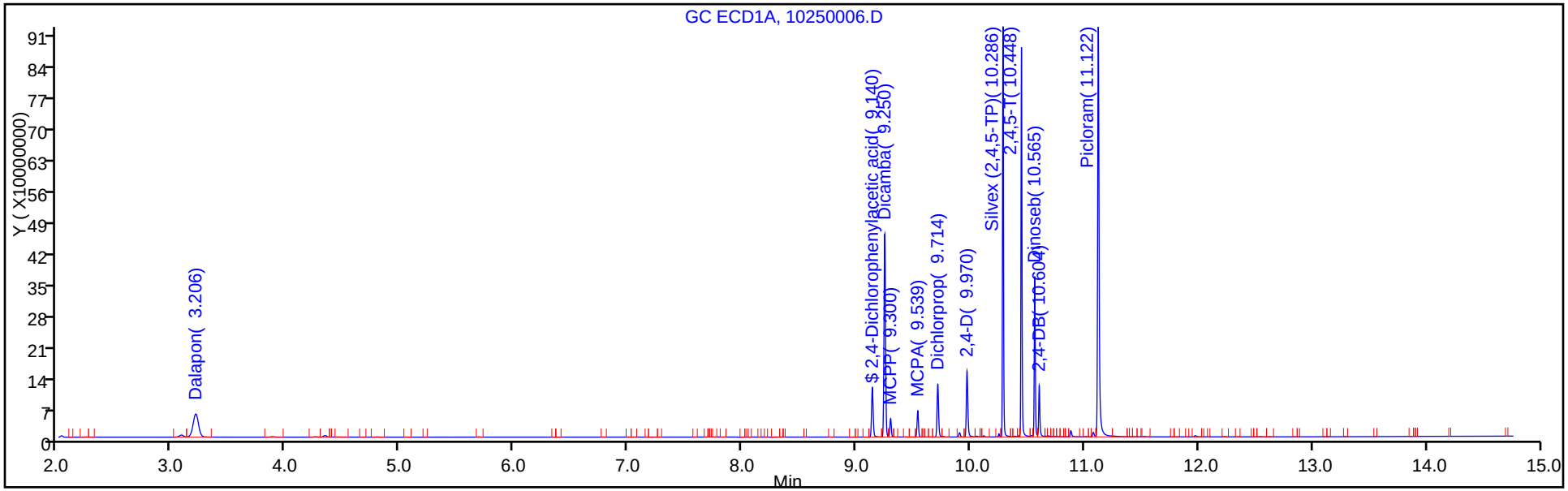
Report Date: 26-Oct-2016 08:21:33 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

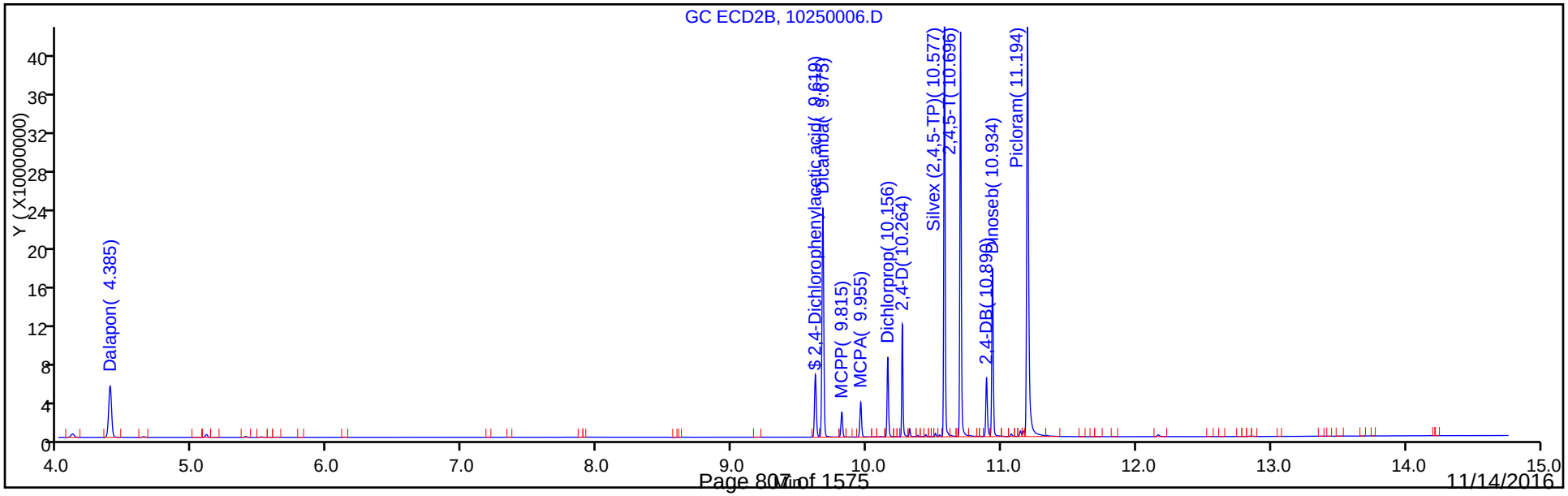
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250006.D

Injection Date:	25-Oct-2016 15:06:06	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD4			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250007.D
Lims ID: STD3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 25-Oct-2016 15:28:58 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD3
Misc. Info.: 280-0052267-007
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:35 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.205	3.206	-0.001	92849317	0.2294	0.2405	
2	4.385	4.385	0.000	41196149	0.2294	0.2379	
						RPD = 1.06	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.140	9.140	0.000	60816029	0.2319	0.2404	
2	9.619	9.619	0.000	32555400	0.2319	0.2381	
						RPD = 0.97	
4 Dicamba							
1	9.249	9.250	-0.001	226446797	0.2353	0.2358	
2	9.675	9.675	0.000	116762813	0.2353	0.2389	
						RPD = 1.31	
5 MCPP							
1	9.299	9.300	-0.001	18486043	23.5	22.7	
2	9.814	9.815	-0.001	11137612	23.5	22.9	
						RPD = 1.02	
6 MCPA							
1	9.538	9.539	-0.001	26229239	23.4	22.7	
2	9.955	9.955	0.000	16888044	23.4	23.3	
						RPD = 2.89	
7 Dichlorprop							
1	9.715	9.714	0.001	60153462	0.2381	0.2377	
2	10.157	10.156	0.001	33359475	0.2381	0.2409	
						RPD = 1.34	
8 2,4-D							
1	9.974	9.970	0.004	73447176	0.2351	0.2347	
2	10.265	10.264	0.001	39524839	0.2351	0.2380	
						RPD = 1.42	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.286	10.286	0.000	290556284	0.2393	0.2350	
2	10.577	10.577	0.000	164696191	0.2393	0.2404	
						RPD = 2.28	
10 2,4,5-T							
1	10.449	10.448	0.001	281753190	0.2382	0.2336	
2	10.698	10.696	0.002	159080076	0.2382	0.2396	
						RPD = 2.55	
11 Dinoseb							
1	10.565	10.565	0.000	109697794	0.2374	0.2333	
2	10.934	10.934	0.000	66070093	0.2374	0.2426	
						RPD = 3.93	
12 2,4-DB							
1	10.604	10.604	0.000	43874780	0.2379	0.2318	
2	10.890	10.890	0.000	26640875	0.2379	0.2438	
						RPD = 5.08	
13 Picloram							
1	11.124	11.122	0.002	412489822	0.2358	0.2315	
2	11.195	11.194	0.001	221408055	0.2358	0.2421	
						RPD = 4.47	

Reagents:

8151ICALL3_00049 Amount Added: 1.00 Units: mL

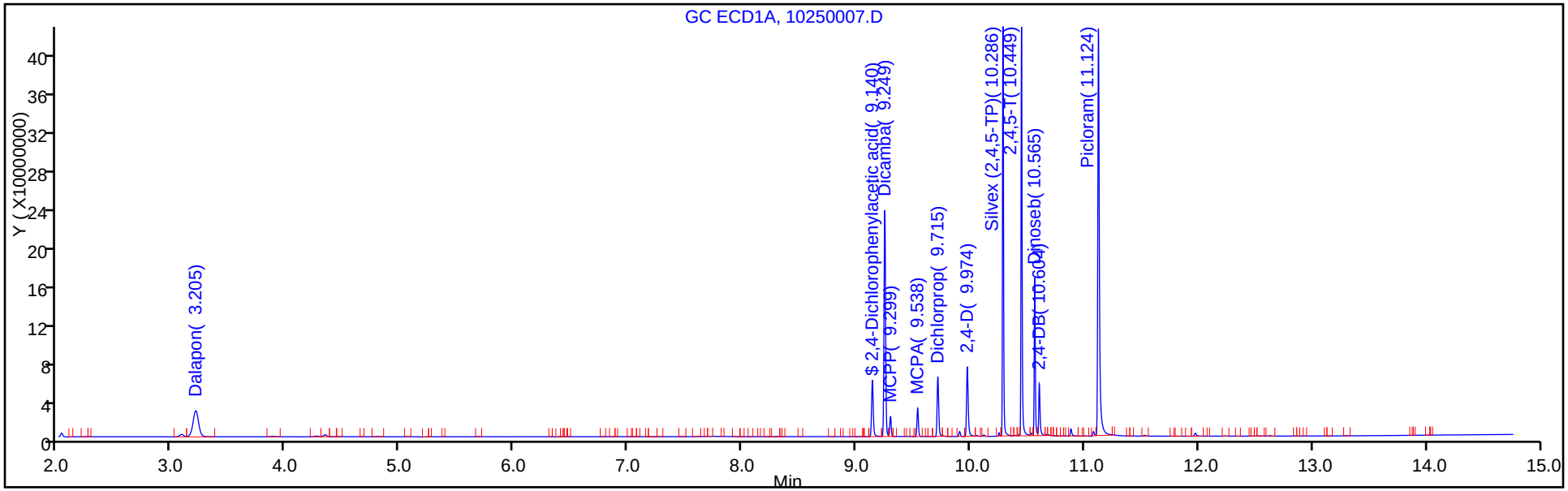
Report Date: 26-Oct-2016 08:21:38 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

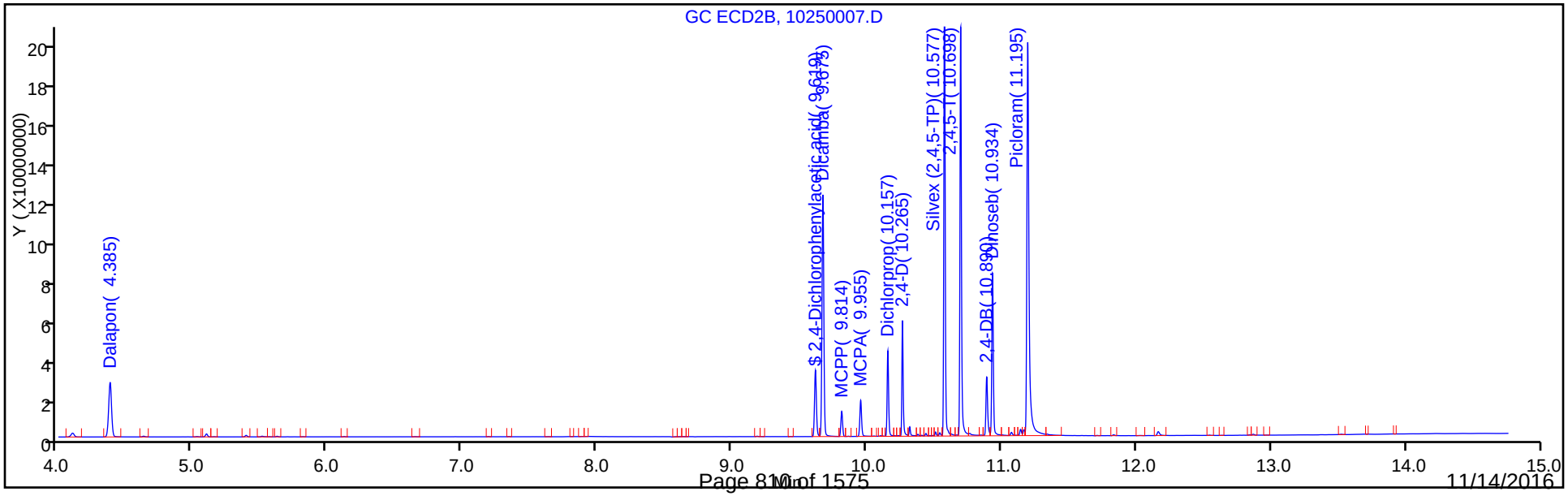
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250007.D

Injection Date:	25-Oct-2016 15:28:58	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD3			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250008.D
Lims ID: STD2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 25-Oct-2016 15:51:44 ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD2
Misc. Info.: 280-0052267-008
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:40 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.205	3.206	-0.001	40419458	0.0918	0.0964	
2	4.383	4.385	-0.002	17787777	0.0918	0.0964	
						RPD = 0.02	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.142	9.140	0.002	27886753	0.0928	0.0987	
2	9.620	9.619	0.001	14796776	0.0928	0.0980	
						RPD = 0.72	
4 Dicamba							
1	9.250	9.250	0.000	97572882	0.0941	0.0968	
2	9.674	9.675	-0.001	51665860	0.0941	0.0982	
						RPD = 1.50	
5 MCPP							
1	9.299	9.300	-0.001	7269836	9.42	9.38	
2	9.814	9.815	-0.001	4523085	9.42	9.44	
						RPD = 0.66	
6 MCPA							
1	9.538	9.539	-0.001	11318903	9.38	9.50	
2	9.955	9.955	0.000	7252421	9.38	9.45	
						RPD = 0.55	
7 Dichlorprop							
1	9.717	9.714	0.003	28167814	0.0952	0.1016	
2	10.157	10.156	0.001	15097647	0.0952	0.1003	
						RPD = 1.32	
8 2,4-D							
1	9.977	9.970	0.007	33535826	0.0940	0.0992	
2	10.267	10.264	0.003	17863320	0.0940	0.0996	
						RPD = 0.36	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.287	10.286	0.001	130374513	0.0957	0.1003	
2	10.577	10.577	0.000	74956934	0.0957	0.1022	
						RPD = 1.82	
10 2,4,5-T							
1	10.451	10.448	0.003	123463499	0.0953	0.0989	
2	10.699	10.696	0.003	70386692	0.0953	0.1004	
						RPD = 1.47	
11 Dinoseb							
1	10.566	10.565	0.001	43481484	0.0950	0.0929	
2	10.934	10.934	0.000	26637832	0.0950	0.0959	
						RPD = 3.19	
12 2,4-DB							
1	10.608	10.604	0.004	20302940	0.0951	0.1012	
2	10.893	10.890	0.003	11659052	0.0951	0.1023	
						RPD = 1.09	
13 Picloram							
1	11.126	11.122	0.004	164818840	0.0943	0.0926	
2	11.197	11.194	0.003	92119545	0.0943	0.0975	
						RPD = 5.20	

Reagents:

8151ICALL2_00056 Amount Added: 1.00 Units: mL

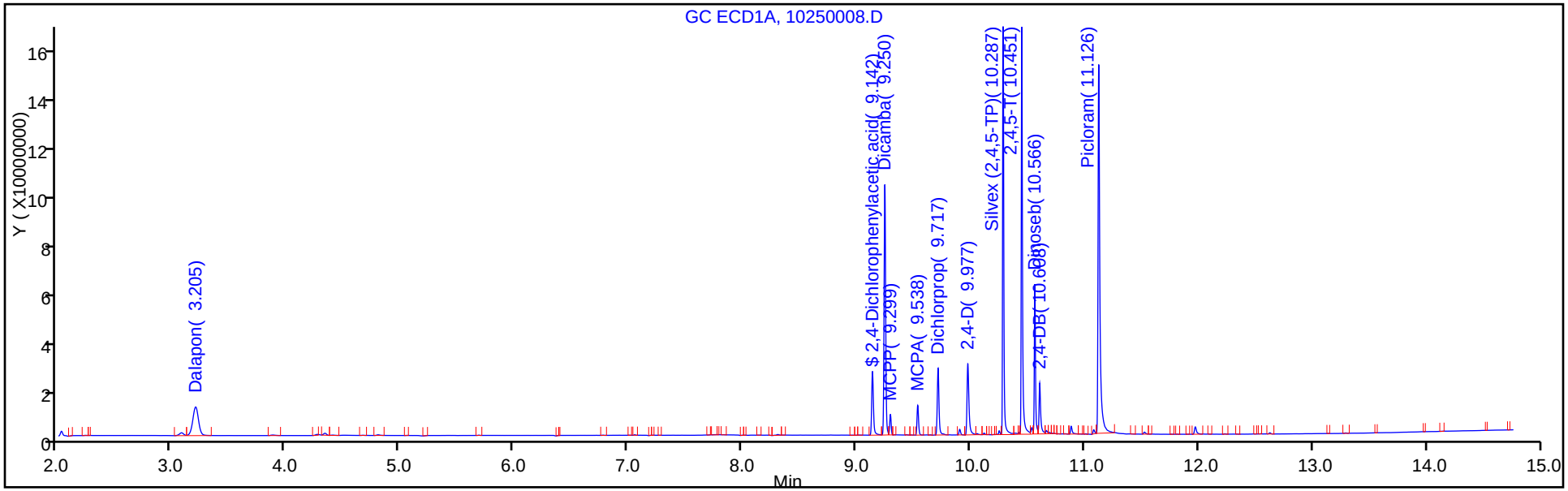
Report Date: 26-Oct-2016 08:21:42 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

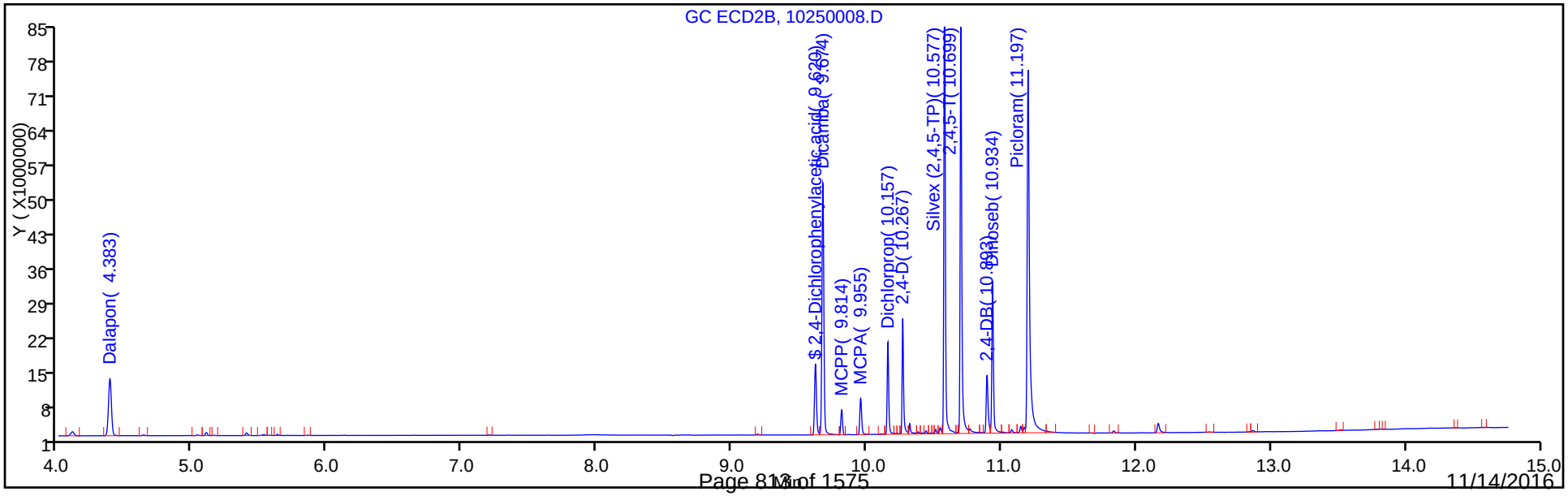
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250008.D

Injection Date:	25-Oct-2016 15:51:44	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD2			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D
Lims ID: STD1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 25-Oct-2016 16:14:35 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: STD1
Misc. Info.: 280-0052267-009
Operator ID: DAW Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:44 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.203	3.206	-0.003	21455414	0.0459	0.0443	
2	4.382	4.385	-0.003	9178008	0.0459	0.0444	
						RPD = 0.19	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.143	9.140	0.003	15307447	0.0464	0.0445	
2	9.620	9.619	0.001	8054547	0.0464	0.0448	
						RPD = 0.52	
4 Dicamba							
1	9.250	9.250	0.000	50777720	0.0471	0.0463	
2	9.675	9.675	0.000	27401087	0.0471	0.0458	
						RPD = 1.06	
5 MCPP							
1	9.299	9.300	-0.001	3353306	4.71	4.74	
2	9.815	9.815	0.000	2199008	4.71	4.72	
						RPD = 0.56	
6 MCPA							
1	9.539	9.539	0.000	5861777	4.69	4.68	
2	9.955	9.955	0.000	3936013	4.69	4.67	
						RPD = 0.27	
7 Dichlorprop							
1	9.718	9.714	0.004	15091498	0.0476	0.0460	
2	10.158	10.156	0.002	8073863	0.0476	0.0462	
						RPD = 0.46	
8 2,4-D							
1	9.981	9.970	0.011	17761357	0.0470	0.0457	
2	10.269	10.264	0.005	9399985	0.0470	0.0455	
						RPD = 0.45	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.289	10.286	0.003	66699352	0.0479	0.0468	
2	10.578	10.577	0.001	38586101	0.0479	0.0461	
						RPD = 1.41	
10 2,4,5-T							
1	10.454	10.448	0.006	62226161	0.0476	0.0468	
2	10.700	10.696	0.004	35893315	0.0476	0.0462	
						RPD = 1.27	
11 Dinoseb							
1	10.567	10.565	0.002	22167375	0.0475	0.0477	
2	10.935	10.934	0.001	13402688	0.0475	0.0467	
						RPD = 2.22	
12 2,4-DB							
1	10.611	10.604	0.007	10367445	0.0476	0.0462	
2	10.895	10.890	0.005	5646669	0.0476	0.0456	
						RPD = 1.44	
13 Picloram							
1	11.130	11.122	0.008	84649442	0.0472	0.0476	
2	11.200	11.194	0.006	46080420	0.0472	0.0460	
						RPD = 3.34	

Reagents:

8151ICALL1_00055 Amount Added: 1.00 Units: mL

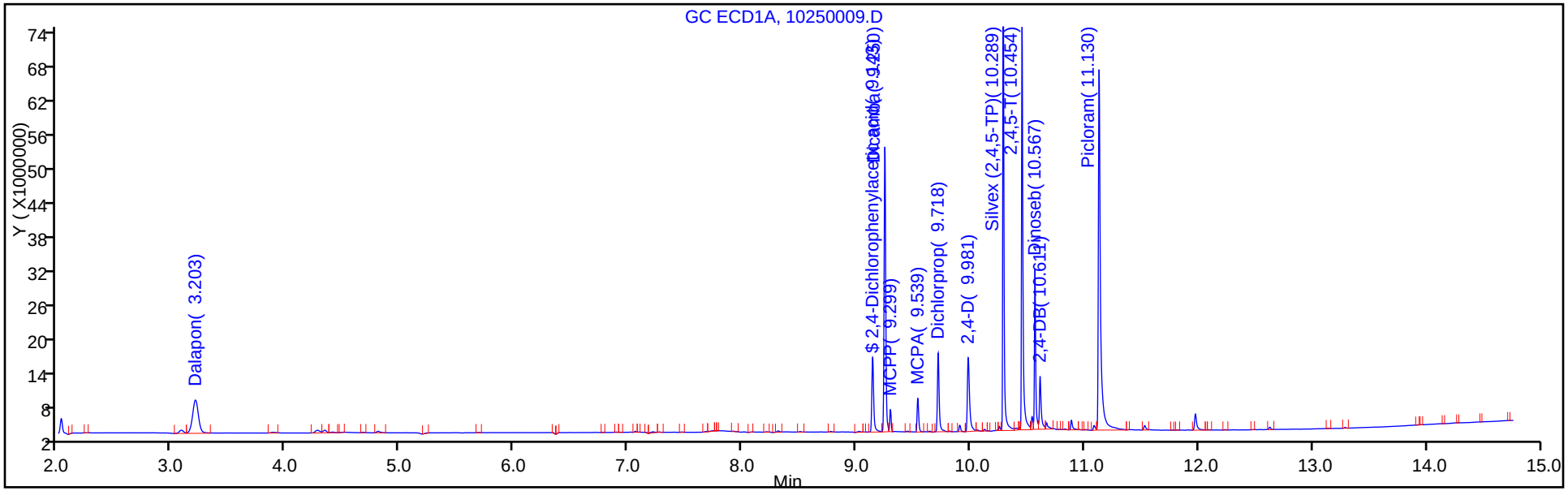
Report Date: 26-Oct-2016 08:21:46 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

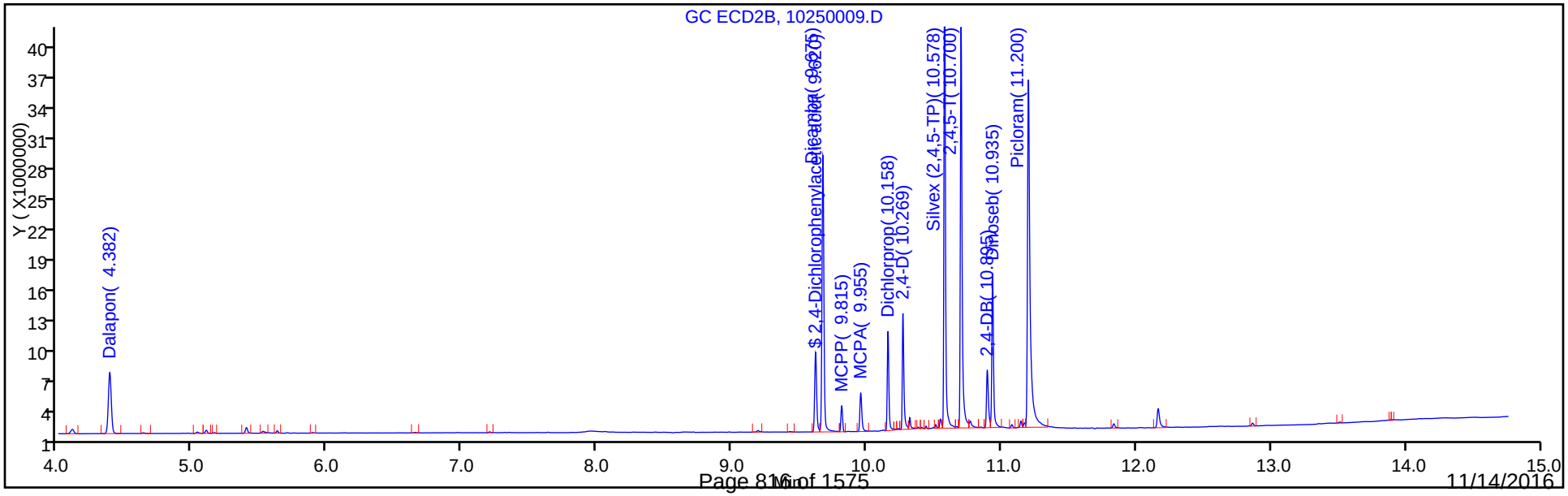
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Injection Date:	25-Oct-2016 16:14:35	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	STD1			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 280-348088/10 Calibration Date: 10/25/2016 16:37

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-35silms ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 10250010.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		392143003		353	341	3.5	20.0
Dicamba	Lin2		1015815974		378	353	7.2	20.0
MCPP	Lin2		890940		37900	35200	7.7	20.0
MCPA	Lin2		1256552		38400	35000	9.6	20.0
Dichlorprop	Lin2		259594883		373	354	5.3	20.0
2,4-D	Lin2		340778702		393	353	11.5	20.0
Silvex (2,4,5-TP)	Lin2		1353981960		396	356	11.2	20.0
2,4,5-T	Lin2		1312680792		391	355	10.0	20.0
Dinoseb	Lin2		490795859		369	354	4.2	20.0
2,4-DB	Lin2		186583571		356	355	0.2	20.0
2,4-Dichlorophenylacetic acid	Lin2		271624688		417	375	11.2	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 280-348088/10 Calibration Date: 10/25/2016 16:37

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-35silms ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 10250010.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	3.20	3.18	3.24
Dicamba	9.25	9.22	9.28
MCPP	9.30	9.27	9.33
MCPA	9.54	9.51	9.57
Dichlorprop	9.71	9.68	9.74
2,4-D	9.97	9.94	10.00
Silvex (2,4,5-TP)	10.29	10.26	10.32
2,4,5-T	10.45	10.42	10.48
Dinoseb	10.57	10.54	10.60
2,4-DB	10.60	10.57	10.63
2,4-Dichlorophenylacetic acid	9.14	9.11	9.17

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250010.D
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Oct-2016 16:37:33 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: 280-0052267-010
Operator ID: DAW Instrument ID: SGC_M
Sublist:

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:44 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.204	3.206	-0.002	133907032	0.3415	0.3533	
2	4.383	4.385	-0.002	59706542	0.3415	0.3498	
						RPD = 0.98	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.140	9.140	0.000	101859258	0.3750	0.4170	
2	9.618	9.619	-0.001	50482452	0.3750	0.3795	
						RPD = 9.42	
4 Dicamba							
1	9.248	9.250	-0.002	358189410	0.3526	0.3778	
2	9.673	9.675	-0.002	182804408	0.3526	0.3816	
						RPD = 0.98	
5 MCPP							
1	9.299	9.300	-0.001	31358858	35.2	37.9	
2	9.814	9.815	-0.001	21941446	35.2	44.9	
						RPD = 16.82	
6 MCPA							
1	9.538	9.539	-0.001	44039008	35.0	38.4	
2	9.955	9.955	0.000	27433880	35.0	38.5	
						RPD = 0.35	
7 Dichlorprop							
1	9.714	9.714	0.000	91867384	0.3539	0.3726	
2	10.156	10.156	0.000	49701042	0.3539	0.3667	
						RPD = 1.59	
8 2,4-D							
1	9.971	9.970	0.001	120162830	0.3526	0.3932	
2	10.264	10.264	0.000	63164391	0.3526	0.3891	
						RPD = 1.04	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.287	10.286	0.001	482609945	0.3564	0.3965	
2	10.577	10.577	0.000	269012275	0.3564	0.4011	
						RPD = 1.17	
10 2,4,5-T							
1	10.448	10.448	0.000	466608796	0.3555	0.3909	
2	10.696	10.696	0.000	264276375	0.3555	0.4048	
						RPD = 3.50	
11 Dinoseb							
1	10.565	10.565	0.000	173888973	0.3543	0.3694	
2	10.933	10.934	-0.001	100067807	0.3543	0.3691	
						RPD = 0.07	
12 2,4-DB							
1	10.603	10.604	-0.001	66239500	0.3550	0.3556	
2	10.888	10.890	-0.002	42923725	0.3550	0.3976	
						RPD = 11.16	
13 Picloram							
1	11.123	11.122	0.001	631742369	0.3582	0.3545	
2	11.193	11.194	-0.001	319885510	0.3582	0.3522	
						RPD = 0.65	

Reagents:

8151ICV_00012 Amount Added: 1.00 Units: mL

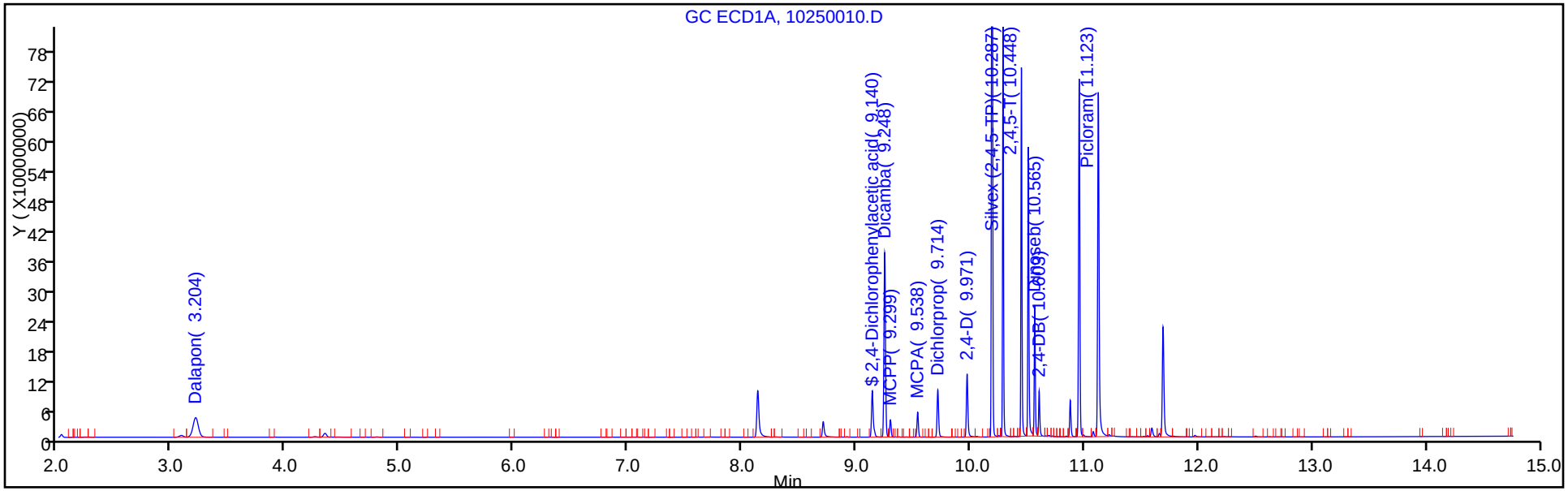
Report Date: 26-Oct-2016 08:21:49 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

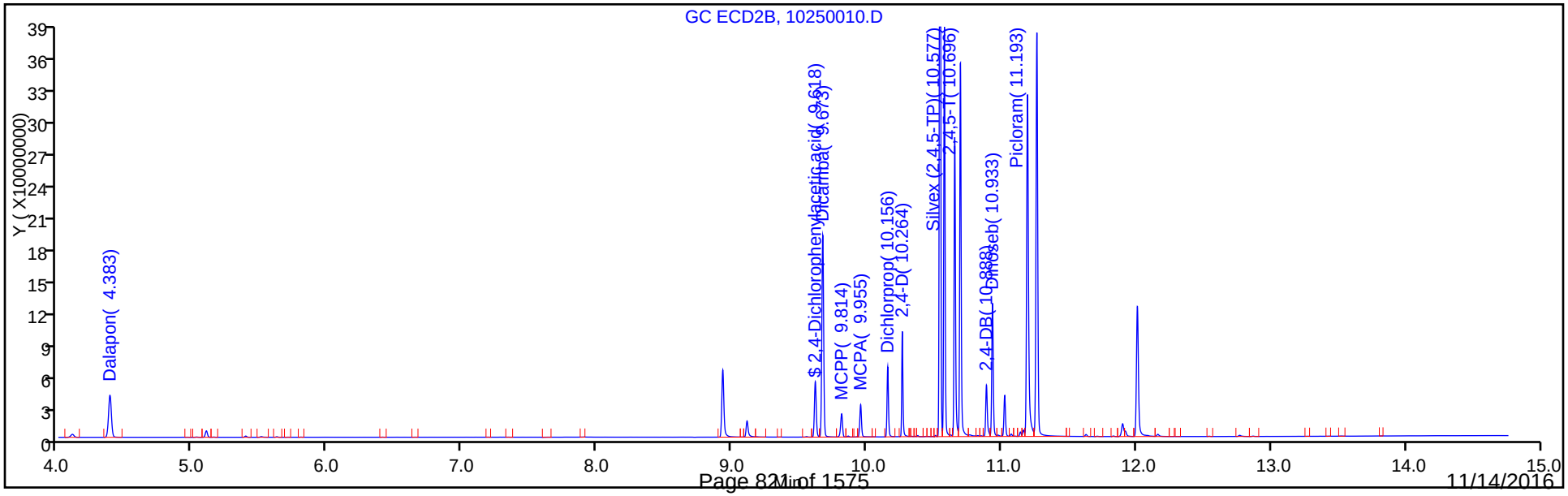
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250010.D

Injection Date:	25-Oct-2016 16:37:33	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	ICV			Worklist Smp#:	10
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 280-348088/10 Calibration Date: 10/25/2016 16:37

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-XLB ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 10250010.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		174848941		350	341	2.4	20.0
Dicamba	Lin2		518428609		382	353	8.2	20.0
MCPP	Lin2		623381		44900	35200	27.5*	20.0
MCPA	Lin2		782763		38500	35000	10.0	20.0
Dichlorprop	Lin2		140443056		367	354	3.6	20.0
2,4-D	Lin2		179132592		389	353	10.4	20.0
Silvex (2,4,5-TP)	Lin2		754724952		401	356	12.5	20.0
2,4,5-T	Lin2		743471885		405	355	13.9	20.0
2,4-DB	Lin2		120907644		398	355	12.0	20.0
Dinoseb	Lin2		282438067		369	354	4.2	20.0
2,4-Dichlorophenylacetic acid	Lin2		134619872		380	375	1.2	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 280-348088/10 Calibration Date: 10/25/2016 16:37

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-XLB ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 10250010.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	4.38	4.36	4.42
Dicamba	9.67	9.65	9.71
MCPP	9.81	9.79	9.85
MCPA	9.96	9.93	9.99
Dichlorprop	10.16	10.13	10.19
2,4-D	10.26	10.23	10.29
Silvex (2,4,5-TP)	10.58	10.55	10.61
2,4,5-T	10.70	10.67	10.73
2,4-DB	10.89	10.86	10.92
Dinoseb	10.93	10.90	10.96
2,4-Dichlorophenylacetic acid	9.62	9.59	9.65

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250010.D
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Oct-2016 16:37:33 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: 280-0052267-010
Operator ID: DAW Instrument ID: SGC_M
Sublist:

Method: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 26-Oct-2016 08:21:44 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK014

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.204	3.206	-0.002	133907032	0.3415	0.3533	
2	4.383	4.385	-0.002	59706542	0.3415	0.3498	
						RPD = 0.98	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.140	9.140	0.000	101859258	0.3750	0.4170	
2	9.618	9.619	-0.001	50482452	0.3750	0.3795	
						RPD = 9.42	
4 Dicamba							
1	9.248	9.250	-0.002	358189410	0.3526	0.3778	
2	9.673	9.675	-0.002	182804408	0.3526	0.3816	
						RPD = 0.98	
5 MCPP							
1	9.299	9.300	-0.001	31358858	35.2	37.9	
2	9.814	9.815	-0.001	21941446	35.2	44.9	
						RPD = 16.82	
6 MCPA							
1	9.538	9.539	-0.001	44039008	35.0	38.4	
2	9.955	9.955	0.000	27433880	35.0	38.5	
						RPD = 0.35	
7 Dichlorprop							
1	9.714	9.714	0.000	91867384	0.3539	0.3726	
2	10.156	10.156	0.000	49701042	0.3539	0.3667	
						RPD = 1.59	
8 2,4-D							
1	9.971	9.970	0.001	120162830	0.3526	0.3932	
2	10.264	10.264	0.000	63164391	0.3526	0.3891	
						RPD = 1.04	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.287	10.286	0.001	482609945	0.3564	0.3965	
2	10.577	10.577	0.000	269012275	0.3564	0.4011	
						RPD = 1.17	
10 2,4,5-T							
1	10.448	10.448	0.000	466608796	0.3555	0.3909	
2	10.696	10.696	0.000	264276375	0.3555	0.4048	
						RPD = 3.50	
11 Dinoseb							
1	10.565	10.565	0.000	173888973	0.3543	0.3694	
2	10.933	10.934	-0.001	100067807	0.3543	0.3691	
						RPD = 0.07	
12 2,4-DB							
1	10.603	10.604	-0.001	66239500	0.3550	0.3556	
2	10.888	10.890	-0.002	42923725	0.3550	0.3976	
						RPD = 11.16	
13 Picloram							
1	11.123	11.122	0.001	631742369	0.3582	0.3545	
2	11.193	11.194	-0.001	319885510	0.3582	0.3522	
						RPD = 0.65	

Reagents:

8151ICV_00012 Amount Added: 1.00 Units: mL

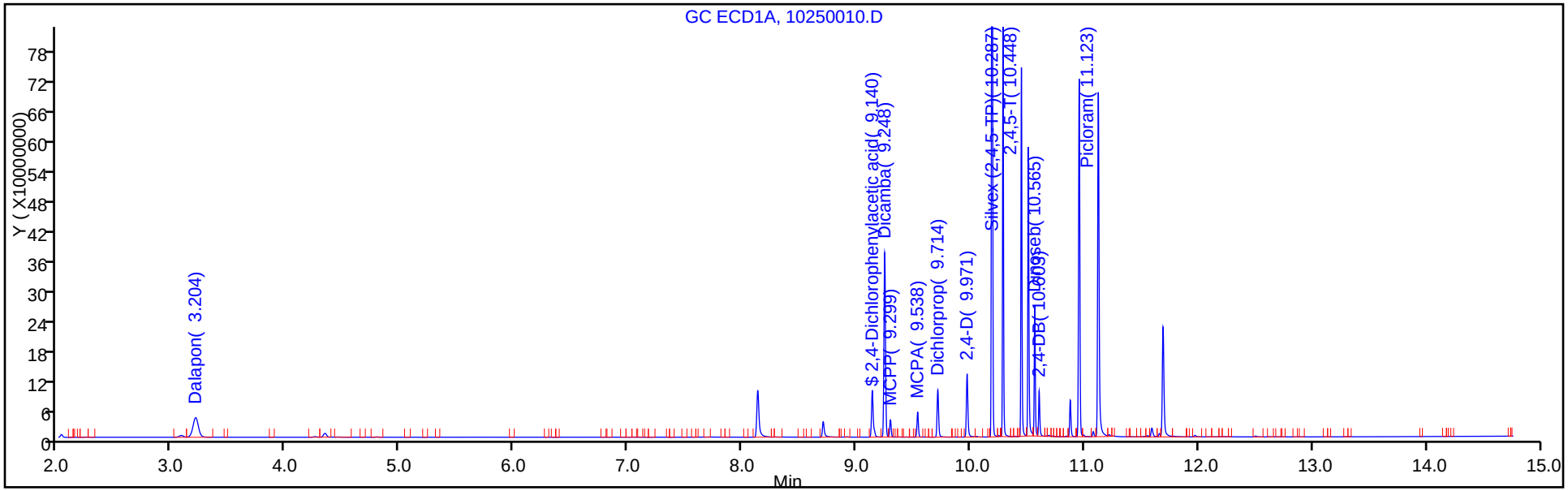
Report Date: 26-Oct-2016 08:21:50 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

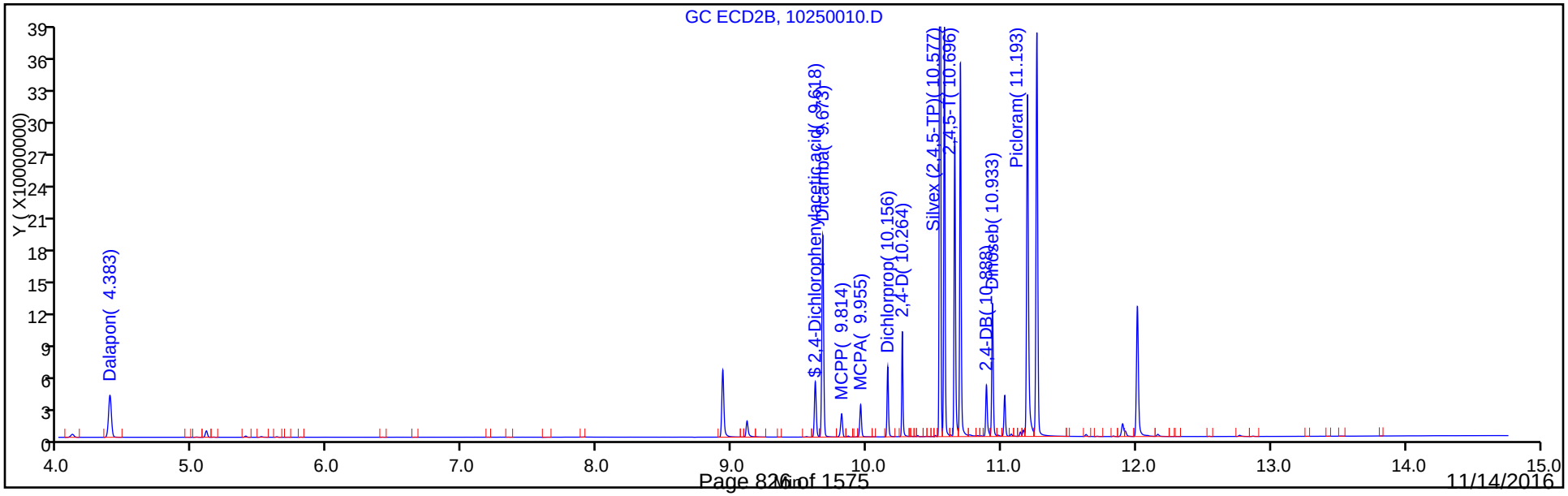
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250010.D

Injection Date:	25-Oct-2016 16:37:33	Instrument ID:	SGC_M	Operator ID:	DAW
Lims ID:	ICV			Worklist Smp#:	10
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVRT 280-349518/8 Calibration Date: 11/02/2016 20:02

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-35silms ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 11020008.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		369901575		452	459	-1.6	20.0
Dicamba	Lin2		876962964		437	471	-7.2	20.0
MCPP	Lin2		765545		43500	47100	-7.7	20.0
MCPA	Lin2		1046245		42800	46900	-8.6	20.0
Dichlorprop	Lin2		223393787		434	476	-8.8	20.0
2,4-D	Lin2		282547766		436	470	-7.2	20.0
Silvex (2,4,5-TP)	Lin2		1118395775		441	479	-7.9	20.0
2,4,5-T	Lin2		1120552316		448	476	-6.0	20.0
Dinoseb	Lin2		528924381		533	475	12.3	20.0
2,4-DB	Lin2		176190949		453	476	-4.8	20.0
2,4-Dichlorophenylacetic acid	Lin2		229011925		436	464	-6.0	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVRT 280-349518/8 Calibration Date: 11/02/2016 20:02

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-35silms ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 11020008.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	3.19	3.16	3.22
Dicamba	9.24	9.21	9.27
MCPP	9.29	9.26	9.32
MCPA	9.53	9.50	9.56
Dichlorprop	9.71	9.68	9.74
2,4-D	9.96	9.93	9.99
Silvex (2,4,5-TP)	10.28	10.25	10.31
2,4,5-T	10.44	10.41	10.47
Dinoseb	10.56	10.53	10.59
2,4-DB	10.60	10.57	10.63
2,4-Dichlorophenylacetic acid	9.13	9.10	9.16

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020008.D
Lims ID: CCVRT
Client ID:
Sample Type: CCVRT
Inject. Date: 02-Nov-2016 20:02:20 ALS Bottle#: 3 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCVRT
Misc. Info.: 280-0052632-008
Operator ID: AMB Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:37:29 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 03-Nov-2016 14:25:50

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.190	3.190	0.000	169738585	0.4589	0.4517	
2	4.376	4.376	0.000	76429200	0.4589	0.4509	
						RPD = 0.18	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.133	9.133	0.000	106215731	0.4638	0.4358	
2	9.609	9.609	0.000	56431739	0.4638	0.4264	
						RPD = 2.17	
4 Dicamba							
1	9.242	9.242	0.000	412720695	0.4706	0.4367	
2	9.664	9.664	0.000	209622735	0.4706	0.4395	
						RPD = 0.65	
5 MCPP							
1	9.293	9.293	0.000	36041976	47.1	43.5	
2	9.805	9.805	0.000	21053860	47.1	43.1	
						RPD = 0.90	
6 MCPA							
1	9.531	9.531	0.000	49047475	46.9	42.8	
2	9.945	9.945	0.000	30309602	46.9	42.7	
						RPD = 0.34	
7 Dichlorprop							
1	9.706	9.706	0.000	106357782	0.4761	0.4342	
2	10.148	10.148	0.000	57948923	0.4761	0.4302	
						RPD = 0.93	
8 2,4-D							
1	9.963	9.963	0.000	132839832	0.4702	0.4363	
2	10.258	10.258	0.000	69603327	0.4702	0.4303	
						RPD = 1.37	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.282	10.282	0.000	535236258	0.4786	0.4407	
2	10.572	10.572	0.000	294974156	0.4786	0.4411	
						RPD = 0.09	
10 2,4,5-T							
1	10.444	10.444	0.000	533747082	0.4763	0.4480	
2	10.692	10.692	0.000	293069303	0.4763	0.4500	
						RPD = 0.45	
11 Dinoseb							
1	10.561	10.561	0.000	251106850	0.4748	0.5330	
2	10.928	10.928	0.000	147919211	0.4748	0.5471	
						RPD = 2.61	
12 2,4-DB							
1	10.601	10.601	0.000	83818439	0.4757	0.4529	
2	10.884	10.884	0.000	43913478	0.4757	0.4070	
						RPD = 10.69	
13 Picloram							
1	11.121	11.121	0.000	831209816	0.4716	0.4664	
2	11.191	11.191	0.000	428954522	0.4716	0.4742	
						RPD = 1.65	

Reagents:

8151ICALL4_00116 Amount Added: 1.00 Units: mL

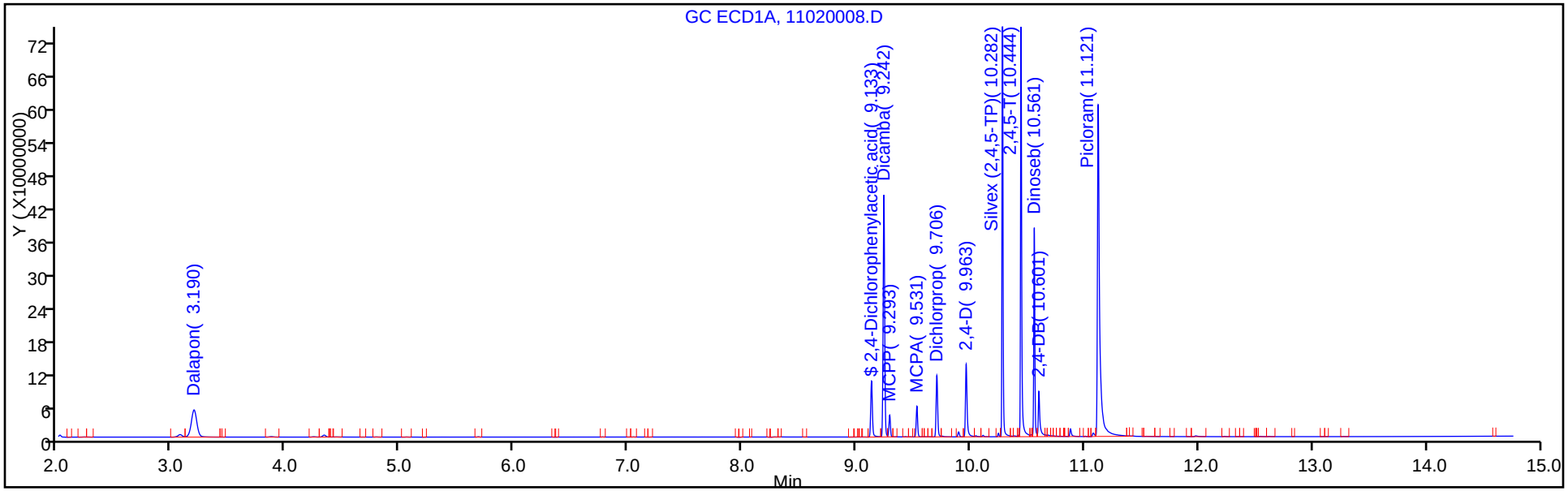
Report Date: 10-Nov-2016 13:37:31 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

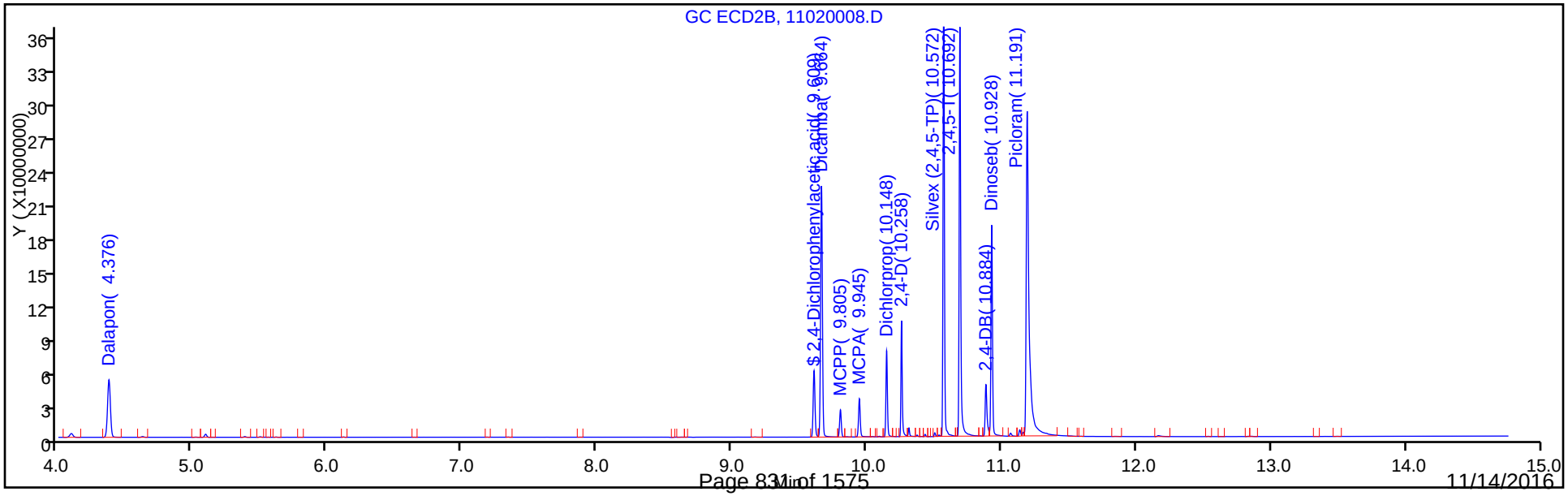
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020008.D

Injection Date:	02-Nov-2016 20:02:20	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	CCVRT			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVRT 280-349518/8 Calibration Date: 11/02/2016 20:02

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-XLB ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 11020008.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		166557777		451	459	-1.7	20.0
Dicamba	Lin2		445413514		440	471	-6.6	20.0
MCPP	Lin2		447192		43100	47100	-8.5	20.0
MCPA	Lin2		646542		42700	46900	-8.9	20.0
Dichlorprop	Lin2		121715864		430	476	-9.6	20.0
2,4-D	Lin2		148044937		430	470	-8.5	20.0
Silvex (2,4,5-TP)	Lin2		616359308		441	479	-7.8	20.0
2,4,5-T	Lin2		615271722		450	476	-5.5	20.0
2,4-DB	Lin2		92308535		407	476	-14.5	20.0
Dinoseb	Lin2		311572851		547	475	15.2	20.0
2,4-Dichlorophenylacetic acid	Lin2		121672572		426	464	-8.1	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVRT 280-349518/8 Calibration Date: 11/02/2016 20:02

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-XLB ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 11020008.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	4.38	4.35	4.41
Dicamba	9.66	9.63	9.69
MCPP	9.81	9.78	9.84
MCPA	9.95	9.92	9.98
Dichlorprop	10.15	10.12	10.18
2,4-D	10.26	10.23	10.29
Silvex (2,4,5-TP)	10.57	10.54	10.60
2,4,5-T	10.69	10.66	10.72
2,4-DB	10.88	10.85	10.91
Dinoseb	10.93	10.90	10.96
2,4-Dichlorophenylacetic acid	9.61	9.58	9.64

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020008.D
Lims ID: CCVRT
Client ID:
Sample Type: CCVRT
Inject. Date: 02-Nov-2016 20:02:20 ALS Bottle#: 3 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCVRT
Misc. Info.: 280-0052632-008
Operator ID: AMB Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:37:29 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 03-Nov-2016 14:25:50

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.190	3.190	0.000	169738585	0.4589	0.4517	
2	4.376	4.376	0.000	76429200	0.4589	0.4509	
						RPD = 0.18	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.133	9.133	0.000	106215731	0.4638	0.4358	
2	9.609	9.609	0.000	56431739	0.4638	0.4264	
						RPD = 2.17	
4 Dicamba							
1	9.242	9.242	0.000	412720695	0.4706	0.4367	
2	9.664	9.664	0.000	209622735	0.4706	0.4395	
						RPD = 0.65	
5 MCPP							
1	9.293	9.293	0.000	36041976	47.1	43.5	
2	9.805	9.805	0.000	21053860	47.1	43.1	
						RPD = 0.90	
6 MCPA							
1	9.531	9.531	0.000	49047475	46.9	42.8	
2	9.945	9.945	0.000	30309602	46.9	42.7	
						RPD = 0.34	
7 Dichlorprop							
1	9.706	9.706	0.000	106357782	0.4761	0.4342	
2	10.148	10.148	0.000	57948923	0.4761	0.4302	
						RPD = 0.93	
8 2,4-D							
1	9.963	9.963	0.000	132839832	0.4702	0.4363	
2	10.258	10.258	0.000	69603327	0.4702	0.4303	
						RPD = 1.37	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.282	10.282	0.000	535236258	0.4786	0.4407	
2	10.572	10.572	0.000	294974156	0.4786	0.4411	
						RPD = 0.09	
10 2,4,5-T							
1	10.444	10.444	0.000	533747082	0.4763	0.4480	
2	10.692	10.692	0.000	293069303	0.4763	0.4500	
						RPD = 0.45	
11 Dinoseb							
1	10.561	10.561	0.000	251106850	0.4748	0.5330	
2	10.928	10.928	0.000	147919211	0.4748	0.5471	
						RPD = 2.61	
12 2,4-DB							
1	10.601	10.601	0.000	83818439	0.4757	0.4529	
2	10.884	10.884	0.000	43913478	0.4757	0.4070	
						RPD = 10.69	
13 Picloram							
1	11.121	11.121	0.000	831209816	0.4716	0.4664	
2	11.191	11.191	0.000	428954522	0.4716	0.4742	
						RPD = 1.65	

Reagents:

8151ICALL4_00116 Amount Added: 1.00 Units: mL

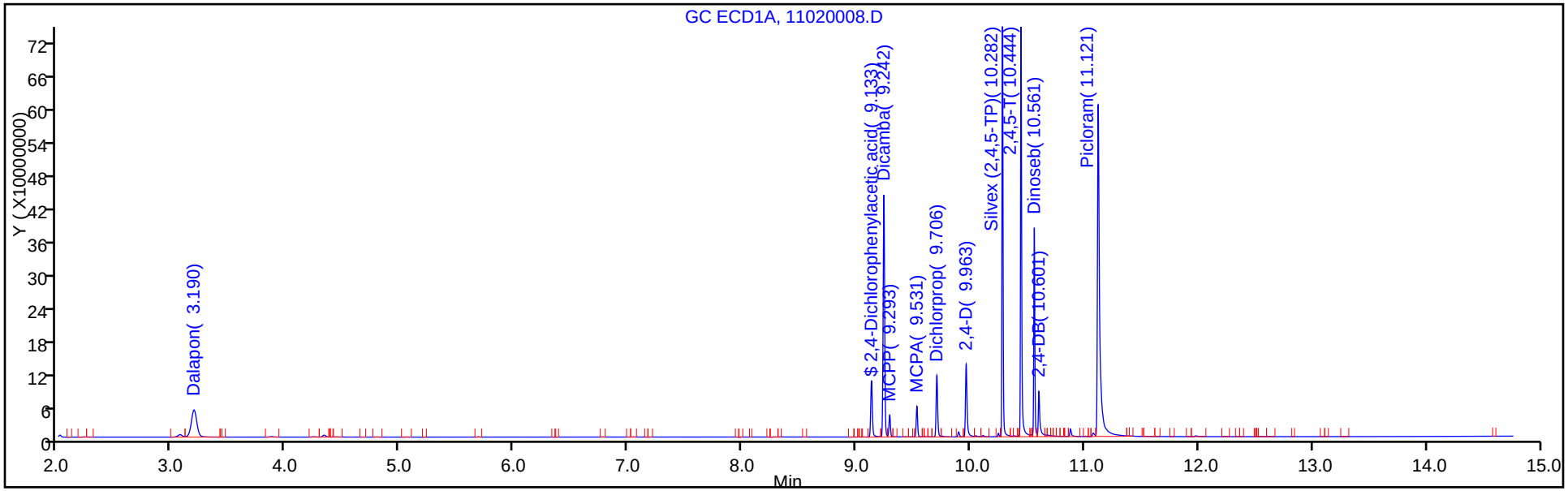
Report Date: 10-Nov-2016 13:37:31 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

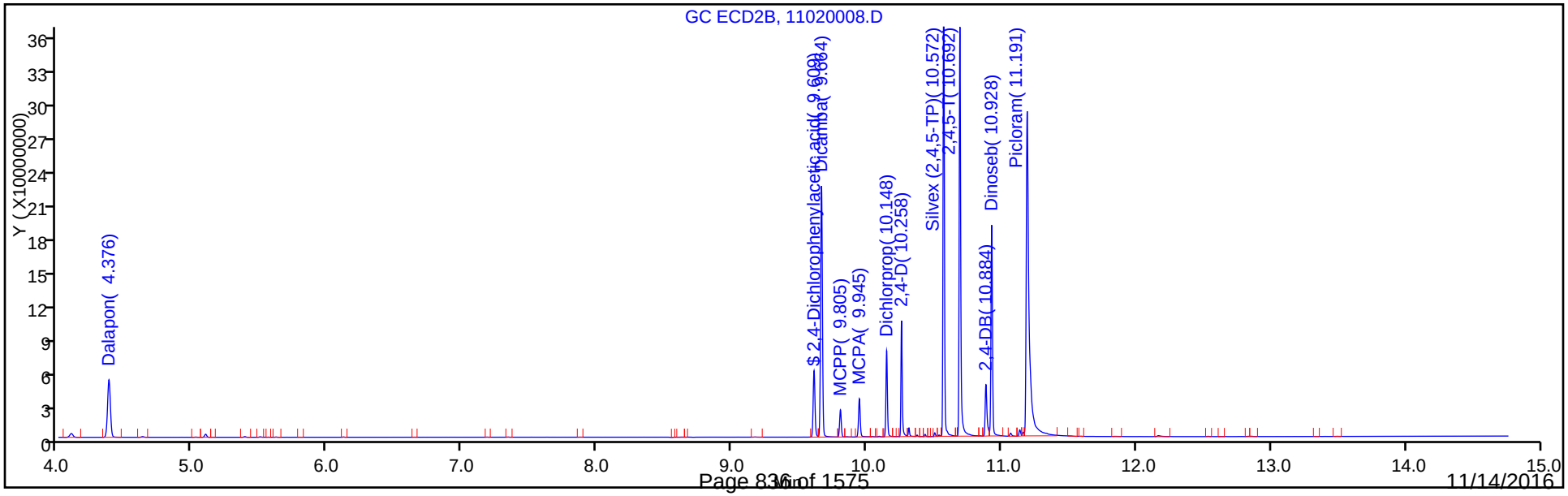
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020008.D

Injection Date:	02-Nov-2016 20:02:20	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	CCVRT			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 280-349518/19 Calibration Date: 11/03/2016 00:10

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-35silms ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 11020019.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		371801940		454	459	-1.0	20.0
Dicamba	Lin2		873575431		435	471	-7.6	20.0
MCPP	Lin2		752774		42800	47100	-9.2	20.0
MCPA	Lin2		1041819		42700	46900	-9.0	20.0
Dichlorprop	Lin2		227010523		442	476	-7.3	20.0
2,4-D	Lin2		288426443		446	470	-5.2	20.0
Silvex (2,4,5-TP)	Lin2		1170680857		462	479	-3.5	20.0
2,4,5-T	Lin2		1179487472		472	476	-0.9	20.0
Dinoseb	Lin2		501394142		505	475	6.4	20.0
2,4-DB	Lin2		183600099		472	476	-0.7	20.0
2,4-Dichlorophenylacetic acid	Lin2		227950263		434	464	-6.5	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 280-349518/19 Calibration Date: 11/03/2016 00:10

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-35silms ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 11020019.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	3.19	3.16	3.22
Dicamba	9.24	9.21	9.27
MCPP	9.29	9.26	9.32
MCPA	9.53	9.50	9.56
Dichlorprop	9.71	9.68	9.74
2,4-D	9.96	9.93	9.99
Silvex (2,4,5-TP)	10.28	10.25	10.31
2,4,5-T	10.44	10.41	10.47
Dinoseb	10.56	10.53	10.59
2,4-DB	10.60	10.57	10.63
2,4-Dichlorophenylacetic acid	9.14	9.10	9.16

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020019.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 03-Nov-2016 00:10:24 ALS Bottle#: 14 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV
Misc. Info.: 280-0052632-019
Operator ID: AMB Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:38:08 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 03-Nov-2016 14:25:20

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.191	3.190	0.001	170610615	0.4589	0.4541	
2	4.378	4.376	0.002	78637647	0.4589	0.4643	
						RPD = 2.21	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.135	9.133	0.002	105723332	0.4638	0.4337	
2	9.611	9.609	0.002	58412739	0.4638	0.4421	
						RPD = 1.92	
4 Dicamba							
1	9.244	9.242	0.002	411126437	0.4706	0.4349	
2	9.667	9.664	0.003	214953465	0.4706	0.4510	
						RPD = 3.63	
5 MCPP							
1	9.294	9.293	0.001	35440730	47.1	42.8	
2	9.807	9.805	0.002	21024945	47.1	43.0	
						RPD = 0.62	
6 MCPA							
1	9.534	9.531	0.003	48839971	46.9	42.7	
2	9.948	9.945	0.003	30443847	46.9	42.9	
						RPD = 0.54	
7 Dichlorprop							
1	9.708	9.706	0.002	108079710	0.4761	0.4415	
2	10.149	10.148	0.001	60683059	0.4761	0.4513	
						RPD = 2.18	
8 2,4-D							
1	9.964	9.963	0.001	135603692	0.4702	0.4456	
2	10.259	10.258	0.001	73497291	0.4702	0.4552	
						RPD = 2.12	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.282	10.282	0.000	560258591	0.4786	0.4618	
2	10.571	10.572	-0.001	314820414	0.4786	0.4717	
						RPD = 2.13	
10 2,4,5-T							
1	10.444	10.444	0.000	561819370	0.4763	0.4719	
2	10.690	10.692	-0.002	315088045	0.4763	0.4846	
						RPD = 2.66	
11 Dinoseb							
1	10.560	10.561	-0.001	238036869	0.4748	0.5053	
2	10.928	10.928	0.000	140120862	0.4748	0.5181	
						RPD = 2.50	
12 2,4-DB							
1	10.599	10.601	-0.002	87343157	0.4757	0.4725	
2	10.883	10.884	-0.001	49147208	0.4757	0.4564	
						RPD = 3.46	
13 Picloram							
1	11.119	11.121	-0.002	866576237	0.4716	0.4862	
2	11.188	11.191	-0.003	447496735	0.4716	0.4949	
						RPD = 1.76	

Reagents:

8151ICALL4_00116 Amount Added: 1.00 Units: mL

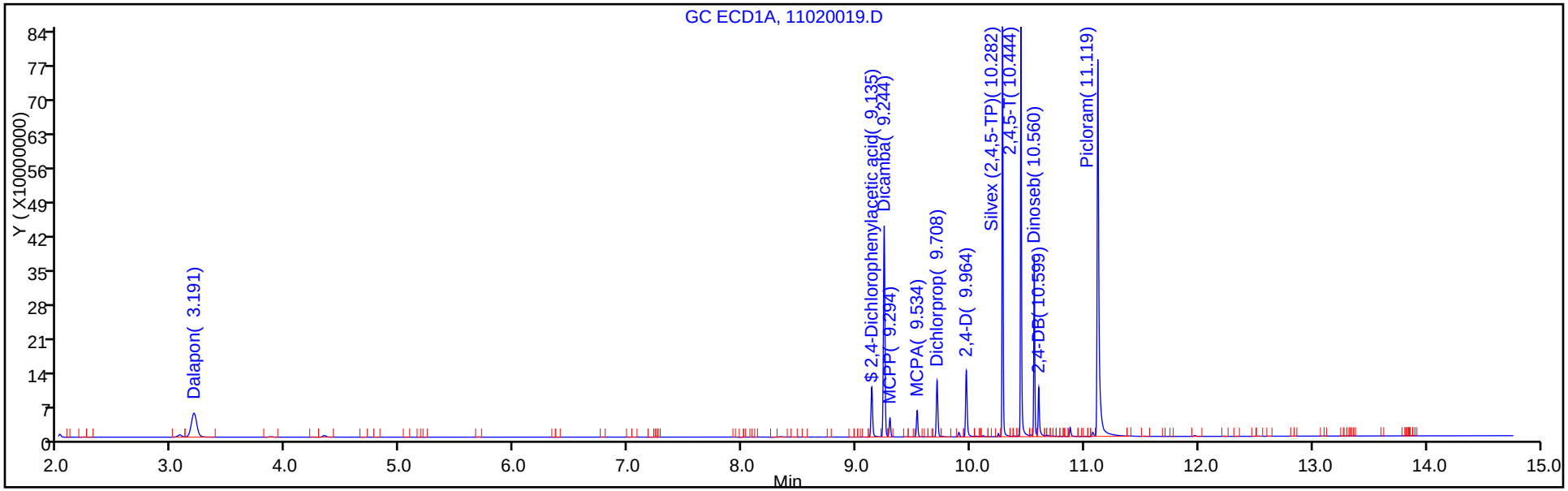
Report Date: 10-Nov-2016 13:38:09 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

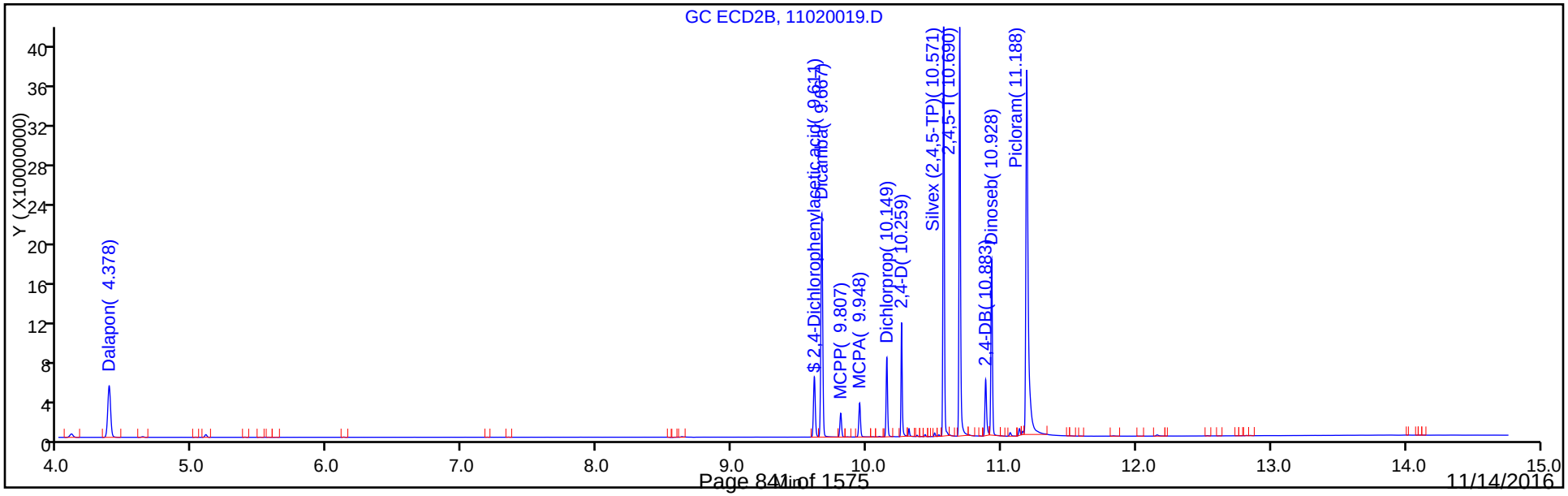
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020019.D

Injection Date:	03-Nov-2016 00:10:24	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	CCV			Worklist Smp#:	19
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	14
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 280-349518/19 Calibration Date: 11/03/2016 00:10

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-XLB ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 11020019.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		171370519		464	459	1.2	20.0
Dicamba	Lin2		456740430		451	471	-4.2	20.0
MCPP	Lin2		446577		43000	47100	-8.6	20.0
MCPA	Lin2		649406		42900	46900	-8.5	20.0
Dichlorprop	Lin2		127458641		451	476	-5.2	20.0
2,4-D	Lin2		156327323		455	470	-3.2	20.0
Silvex (2,4,5-TP)	Lin2		657828792		472	479	-1.4	20.0
2,4,5-T	Lin2		661498021		485	476	1.7	20.0
2,4-DB	Lin2		103310122		456	476	-4.1	20.0
Dinoseb	Lin2		295146629		518	475	9.1	20.0
2,4-Dichlorophenylacetic acid	Lin2		125943810		442	464	-4.7	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 280-349518/19 Calibration Date: 11/03/2016 00:10

Instrument ID: SGC_M Calib Start Date: 10/25/2016 13:57

GC Column: RTI-XLB ID: 0.32(mm) Calib End Date: 10/25/2016 16:14

Lab File ID: 11020019.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	4.38	4.35	4.41
Dicamba	9.67	9.63	9.69
MCPP	9.81	9.78	9.84
MCPA	9.95	9.92	9.98
Dichlorprop	10.15	10.12	10.18
2,4-D	10.26	10.23	10.29
Silvex (2,4,5-TP)	10.57	10.54	10.60
2,4,5-T	10.69	10.66	10.72
2,4-DB	10.88	10.85	10.91
Dinoseb	10.93	10.90	10.96
2,4-Dichlorophenylacetic acid	9.61	9.58	9.64

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020019.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 03-Nov-2016 00:10:24 ALS Bottle#: 14 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV
Misc. Info.: 280-0052632-019
Operator ID: AMB Instrument ID: SGC_M
Sublist: chrom-8151_615*sub1

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:38:08 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 03-Nov-2016 14:25:20

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.191	3.190	0.001	170610615	0.4589	0.4541	
2	4.378	4.376	0.002	78637647	0.4589	0.4643	
						RPD = 2.21	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.135	9.133	0.002	105723332	0.4638	0.4337	
2	9.611	9.609	0.002	58412739	0.4638	0.4421	
						RPD = 1.92	
4 Dicamba							
1	9.244	9.242	0.002	411126437	0.4706	0.4349	
2	9.667	9.664	0.003	214953465	0.4706	0.4510	
						RPD = 3.63	
5 MCPP							
1	9.294	9.293	0.001	35440730	47.1	42.8	
2	9.807	9.805	0.002	21024945	47.1	43.0	
						RPD = 0.62	
6 MCPA							
1	9.534	9.531	0.003	48839971	46.9	42.7	
2	9.948	9.945	0.003	30443847	46.9	42.9	
						RPD = 0.54	
7 Dichlorprop							
1	9.708	9.706	0.002	108079710	0.4761	0.4415	
2	10.149	10.148	0.001	60683059	0.4761	0.4513	
						RPD = 2.18	
8 2,4-D							
1	9.964	9.963	0.001	135603692	0.4702	0.4456	
2	10.259	10.258	0.001	73497291	0.4702	0.4552	
						RPD = 2.12	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.282	10.282	0.000	560258591	0.4786	0.4618	
2	10.571	10.572	-0.001	314820414	0.4786	0.4717	
						RPD = 2.13	
10 2,4,5-T							
1	10.444	10.444	0.000	561819370	0.4763	0.4719	
2	10.690	10.692	-0.002	315088045	0.4763	0.4846	
						RPD = 2.66	
11 Dinoseb							
1	10.560	10.561	-0.001	238036869	0.4748	0.5053	
2	10.928	10.928	0.000	140120862	0.4748	0.5181	
						RPD = 2.50	
12 2,4-DB							
1	10.599	10.601	-0.002	87343157	0.4757	0.4725	
2	10.883	10.884	-0.001	49147208	0.4757	0.4564	
						RPD = 3.46	
13 Picloram							
1	11.119	11.121	-0.002	866576237	0.4716	0.4862	
2	11.188	11.191	-0.003	447496735	0.4716	0.4949	
						RPD = 1.76	

Reagents:

8151ICALL4_00116 Amount Added: 1.00 Units: mL

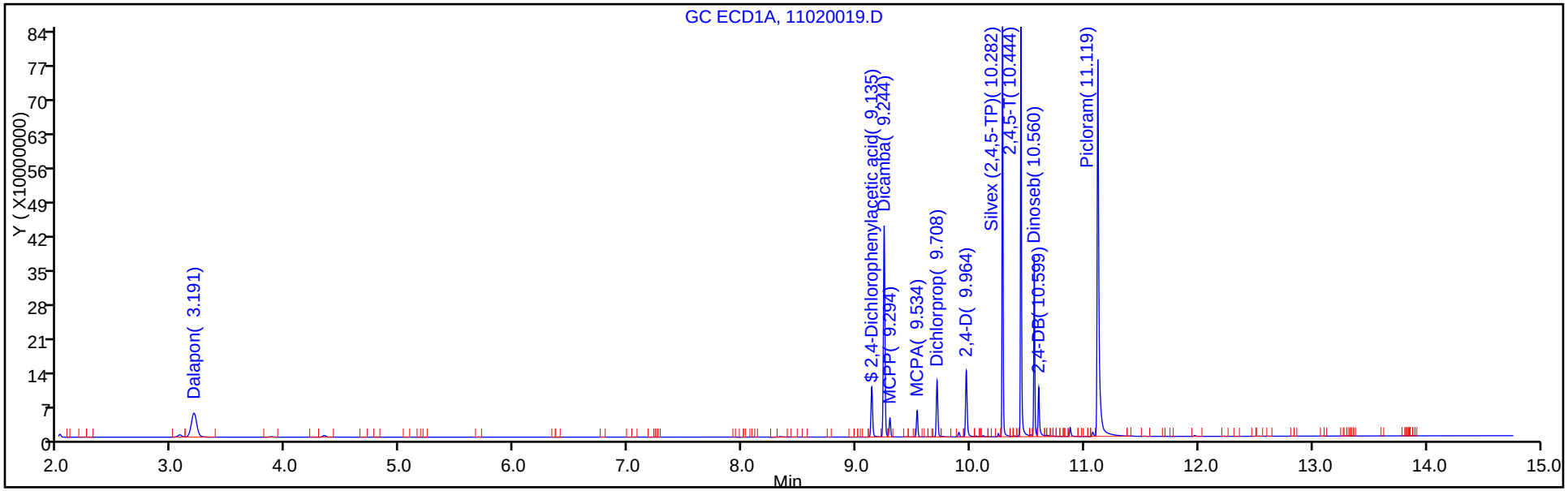
Report Date: 10-Nov-2016 13:38:09 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

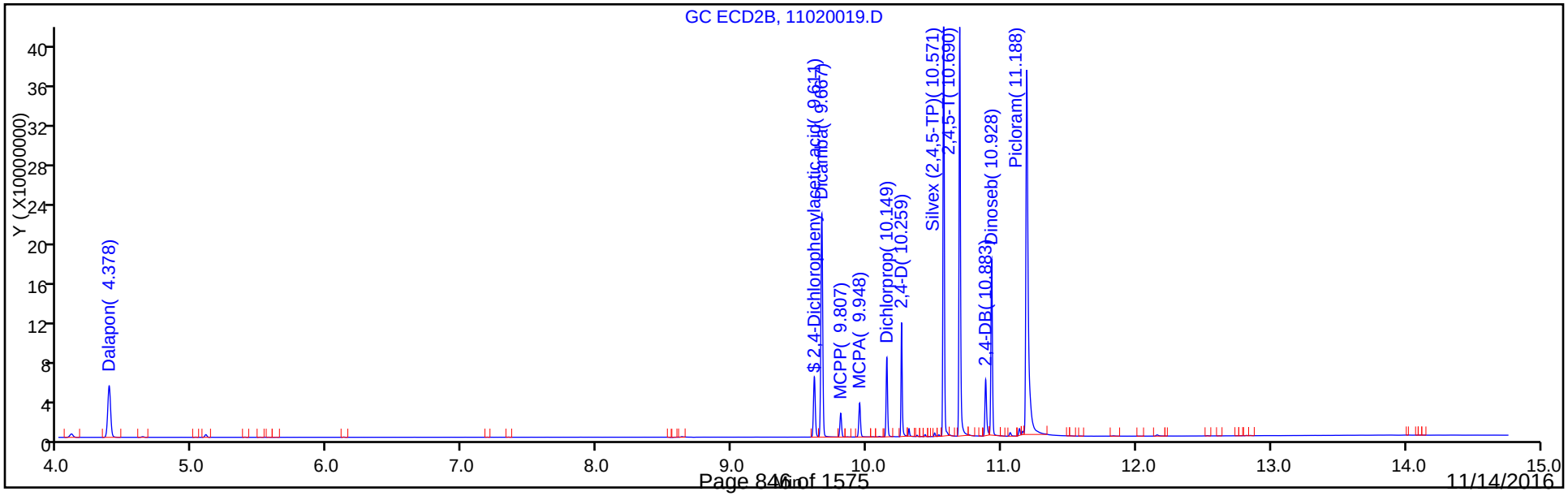
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020019.D

Injection Date:	03-Nov-2016 00:10:24	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	CCV			Worklist Smp#:	19
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	14
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 280-348542/1-A

Matrix: Water | Lab File ID: 11020009.D

Analysis Method: 8151A DOD | Date Collected:

Extraction Method: 8151A | Date Extracted: 10/27/2016 12:46

Sample wt/vol: 1000(mL) | Date Analyzed: 11/02/2016 20:24

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: RTI-35silms ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 349518 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
93-76-5	2,4,5-T	0.60	U	1.0	0.60	0.19
94-75-7	2,4-D	0.60	U	4.0	0.60	0.21
94-82-6	2,4-DB	0.92	U	4.0	0.92	0.36
75-99-0	Dalapon	1.8	U	2.0	1.8	0.91
1918-00-9	Dicamba	0.60	U	2.0	0.60	0.15
120-36-5	Dichlorprop	1.8	U	4.0	1.8	0.65
93-72-1	Silvex (2,4,5-TP)	0.60	U	1.0	0.60	0.17
93-65-2	MCPP	92	U	400	92	33

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	73		32-138

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020009.D
Lims ID: MB 280-348542/1-A
Client ID:
Sample Type: MB
Inject. Date: 02-Nov-2016 20:24:52 ALS Bottle#: 4 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-348542/1-
Misc. Info.: 280-0052632-009
Operator ID: AMB Instrument ID: SGC_M

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:37:29 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 10-Nov-2016 10:37:46

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,4-DBDinoseb							
1		-0.060				ND	
2		-0.060					
2 Dalapon							
1		3.190				ND	
2		4.376					
$ 3 2,4-Dichlorophenylacetic acid							
1	9.131	9.133	-0.002	89276332	0.5000	0.3629	
2	9.607	9.609	-0.002	49857477	0.5000	0.3746	
						RPD = 3.17	
4 Dicamba							
1		9.242				ND	
2		9.664					
5 MCPP							
1	9.307	9.293	0.014	74015		0.8568	
2	9.812	9.805	0.007	92677		0.4297	
						RPD = 66.40	
6 MCPA							
1	9.512	9.531	-0.019	3192960		2.32	
2	9.929	9.945	-0.016	336447		-0.5232	
						RPD = 316.43	
7 Dichlorprop							
1	9.706	9.706	0.000	383225		-0.0166	
2	10.143	10.148	-0.005	71464		-0.0154	
						RPD = -7.28	

LOD = 0.001000

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
8 2,4-D							
1	9.957	9.963	-0.006	209653		-0.0139	
2	10.267	10.258	0.009	122486		-0.0138	
						RPD = -0.45	
LOD = 0.001000							
9 Silvex (2,4,5-TP)							
1		10.282				ND	
2		10.572					
10 2,4,5-T							
1		10.444				ND	
2		10.692					
11 Dinoseb							
1	10.562	10.561	0.001	1290984		0.003496	
2	10.919	10.928	-0.009	311860		-0.002000	
						RPD = 734.55	
12 2,4-DB							
1	10.600	10.601	-0.001	4774509		0.0152	
2	10.859	10.884	-0.025	1535325		0.006726	
						RPD = 77.54	
13 Picloram							
1	11.118	11.121	-0.003	5040426		0.002946	
2	11.190	11.191	-0.001	1372338		-0.003949	
						RPD = -1374.03	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

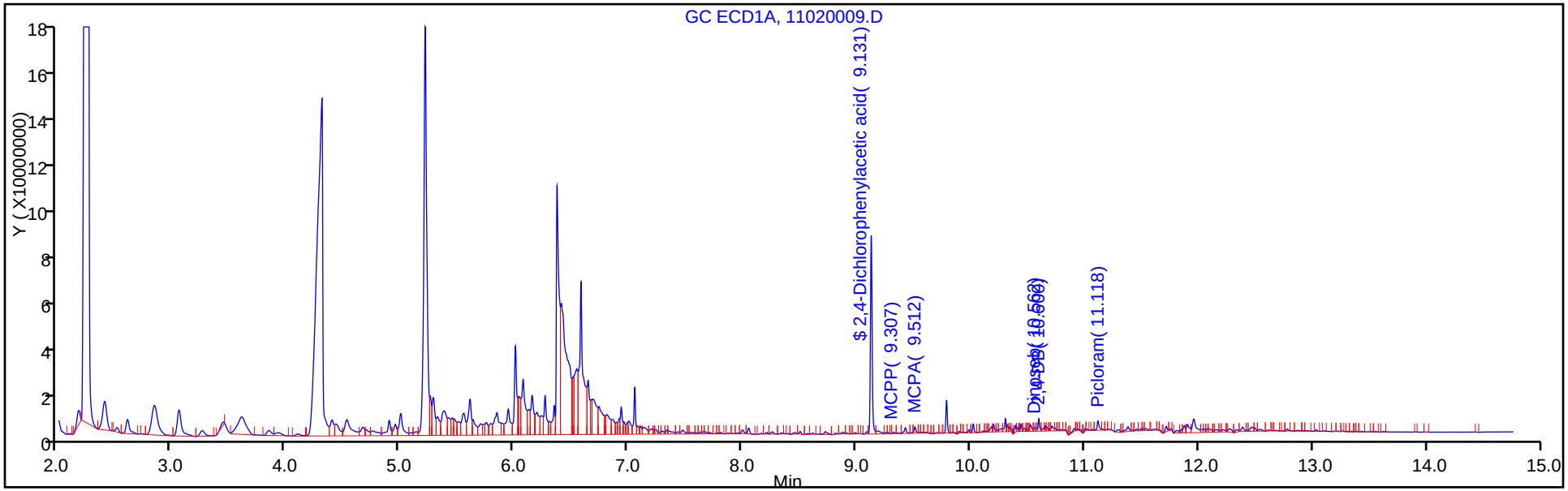
Report Date: 10-Nov-2016 13:37:35 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

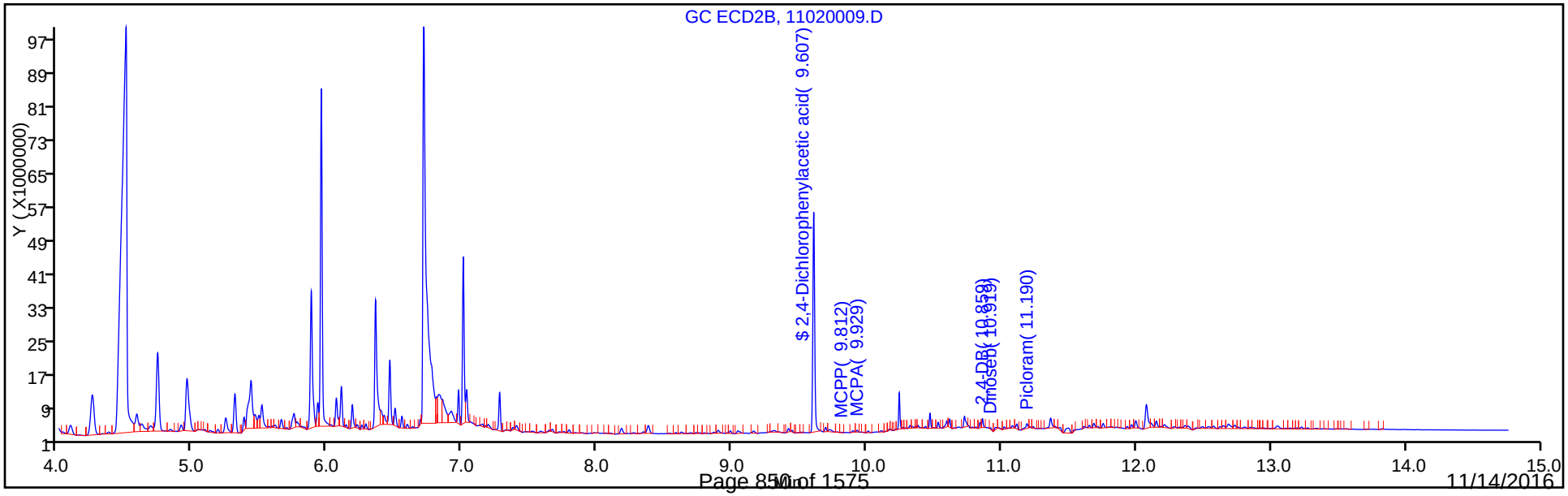
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020009.D

Injection Date:	02-Nov-2016 20:24:52	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	MB 280-348542/1-A			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020009.D				
Lims ID:	MB 280-348542/1-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	02-Nov-2016 20:24:52	ALS Bottle#:	4	Worklist Smp#:	9
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	MB 280-348542/1-				
Misc. Info.:	280-0052632-009				
Operator ID:	AMB	Instrument ID:	SGC_M		
Method:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m				
Limit Group:	GCSV - 8151				
Method Label:	8151A: Herbicides: DV-GC-0022				
Last Update:	10-Nov-2016 13:37:29	Calib Date:	25-Oct-2016 16:14:35		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D				
Column 1 :	Rti-35 sil MS (0.32 mm)		Det: GC ECD1A		
Column 2 :	Rti-XLB (0.32 mm)		Det: GC ECD2B		
Process Host:	XAWRK004				
First Level Reviewer: byla		Date:	10-Nov-2016 10:37:46		

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.3629	72.58

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.3746	74.92

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 280-348542/1-A

Matrix: Water | Lab File ID: 11020009.D

Analysis Method: 8151A DOD | Date Collected:

Extraction Method: 8151A | Date Extracted: 10/27/2016 12:46

Sample wt/vol: 1000(mL) | Date Analyzed: 11/02/2016 20:24

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: RTI-XLB ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 349518 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-74-6	MCPA	60	U	400	60	17

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020009.D
Lims ID: MB 280-348542/1-A
Client ID:
Sample Type: MB
Inject. Date: 02-Nov-2016 20:24:52 ALS Bottle#: 4 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-348542/1-
Misc. Info.: 280-0052632-009
Operator ID: AMB Instrument ID: SGC_M

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:37:29 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 10-Nov-2016 10:37:46

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,4-DBDinoseb							
1		-0.060				ND	
2		-0.060					
2 Dalapon							
1		3.190				ND	
2		4.376					
$ 3 2,4-Dichlorophenylacetic acid							
1	9.131	9.133	-0.002	89276332	0.5000	0.3629	
2	9.607	9.609	-0.002	49857477	0.5000	0.3746	
						RPD = 3.17	
4 Dicamba							
1		9.242				ND	
2		9.664					
5 MCPP							
1	9.307	9.293	0.014	74015		0.8568	
2	9.812	9.805	0.007	92677		0.4297	
						RPD = 66.40	
6 MCPA							
1	9.512	9.531	-0.019	3192960		2.32	
2	9.929	9.945	-0.016	336447		-0.5232	
						RPD = 316.43	
7 Dichlorprop							
1	9.706	9.706	0.000	383225		-0.0166	
2	10.143	10.148	-0.005	71464		-0.0154	
						RPD = -7.28	

LOD = 0.001000

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
8 2,4-D							
1	9.957	9.963	-0.006	209653		-0.0139	
2	10.267	10.258	0.009	122486		-0.0138	
						RPD = -0.45	
LOD = 0.001000							
9 Silvex (2,4,5-TP)							
1		10.282				ND	
2		10.572					
10 2,4,5-T							
1		10.444				ND	
2		10.692					
11 Dinoseb							
1	10.562	10.561	0.001	1290984		0.003496	
2	10.919	10.928	-0.009	311860		-0.002000	
						RPD = 734.55	
12 2,4-DB							
1	10.600	10.601	-0.001	4774509		0.0152	
2	10.859	10.884	-0.025	1535325		0.006726	
						RPD = 77.54	
13 Picloram							
1	11.118	11.121	-0.003	5040426		0.002946	
2	11.190	11.191	-0.001	1372338		-0.003949	
						RPD = -1374.03	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

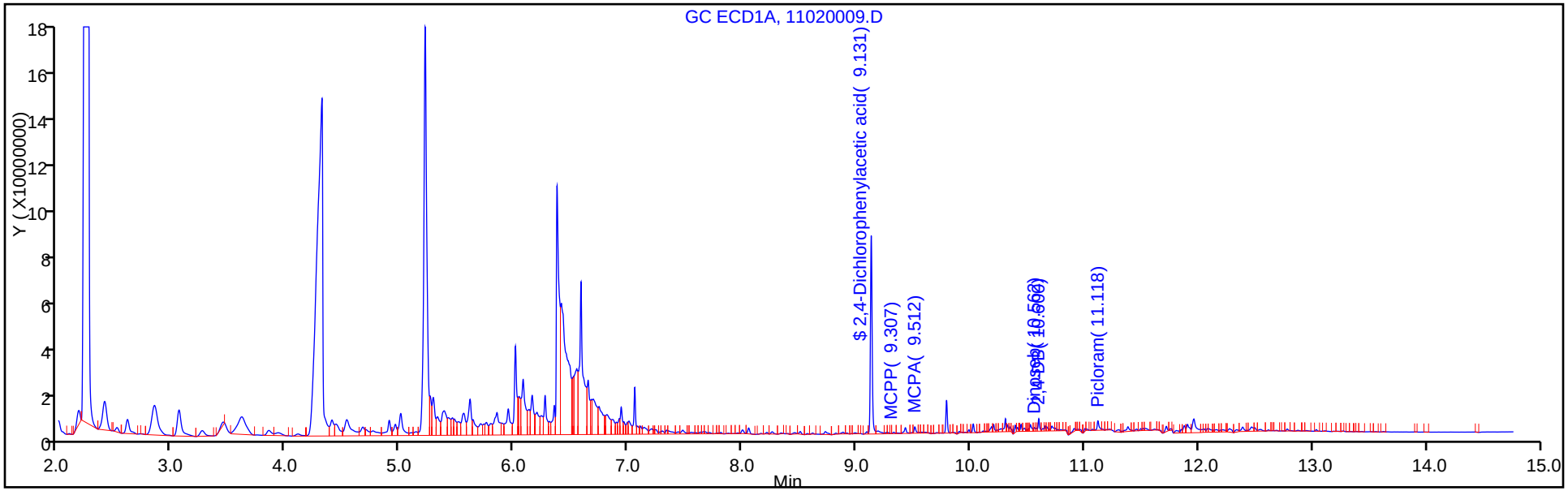
Report Date: 10-Nov-2016 13:37:36 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

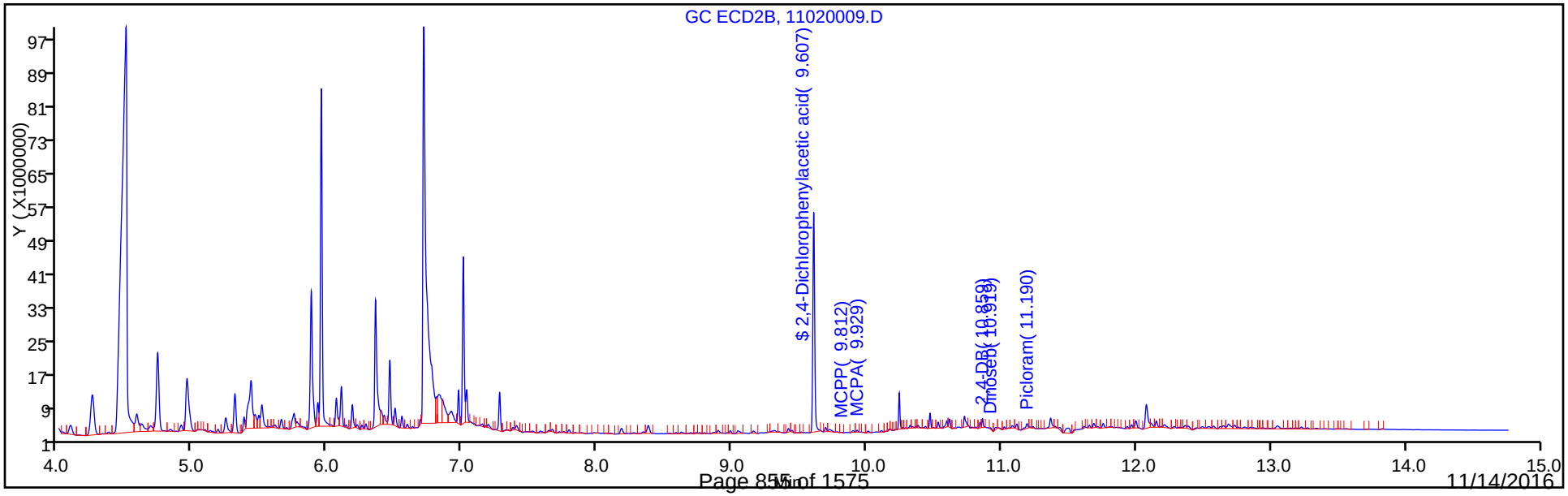
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020009.D

Injection Date:	02-Nov-2016 20:24:52	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	MB 280-348542/1-A			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020009.D				
Lims ID:	MB 280-348542/1-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	02-Nov-2016 20:24:52	ALS Bottle#:	4	Worklist Smp#:	9
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	MB 280-348542/1-				
Misc. Info.:	280-0052632-009				
Operator ID:	AMB	Instrument ID:	SGC_M		
Method:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m				
Limit Group:	GCSV - 8151				
Method Label:	8151A: Herbicides: DV-GC-0022				
Last Update:	10-Nov-2016 13:37:29	Calib Date:	25-Oct-2016 16:14:35		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D				
Column 1 :	Rti-35 sil MS (0.32 mm)		Det: GC ECD1A		
Column 2 :	Rti-XLB (0.32 mm)		Det: GC ECD2B		
Process Host:	XAWRK004				
First Level Reviewer: byla		Date:	10-Nov-2016 10:37:46		

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.3629	72.58

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.3746	74.92

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 280-348542/2-A

Matrix: Water | Lab File ID: 11020010.D

Analysis Method: 8151A DOD | Date Collected:

Extraction Method: 8151A | Date Extracted: 10/27/2016 12:46

Sample wt/vol: 1000(mL) | Date Analyzed: 11/02/2016 20:47

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: RTI-35silms ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 349518 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
93-76-5	2,4,5-T	3.31		1.0	0.60	0.19
94-75-7	2,4-D	3.19	J	4.0	0.60	0.21
94-82-6	2,4-DB	3.56	J	4.0	0.92	0.36
75-99-0	Dalapon	2.80		2.0	1.8	0.91
1918-00-9	Dicamba	3.10		2.0	0.60	0.15
120-36-5	Dichlorprop	3.07	J	4.0	1.8	0.65
94-74-6	MCPA	353	J	400	60	17
93-72-1	Silvex (2,4,5-TP)	3.39		1.0	0.60	0.17
93-65-2	MCPP	354	J	400	92	33

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	67		32-138

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020010.D
Lims ID: LCS 280-348542/2-A
Client ID:
Sample Type: LCS
Inject. Date: 02-Nov-2016 20:47:31 ALS Bottle#: 5 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 280-348542/2
Misc. Info.: 280-0052632-010
Operator ID: AMB Instrument ID: SGC_M

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:37:29 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 10-Nov-2016 13:29:26

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 Dalapon							
1	3.178	3.190	-0.012	107208306	0.5000	0.2799	
2	4.378	4.376	0.002	53560912	0.5000	0.3127	
						RPD = 11.06	
$ 3 2,4-Dichlorophenylacetic acid							
1	9.134	9.133	0.001	83252387	0.5000	0.3370	
2	9.611	9.609	0.002	46818224	0.5000	0.3506	
						RPD = 3.97	
4 Dicamba							
1	9.243	9.242	0.001	294963539	0.5000	0.3097	
2	9.666	9.664	0.002	156674531	0.5000	0.3251	
						RPD = 4.87	
5 MCPP							
1	9.294	9.293	0.001	29253696	50.0	35.4	
2	9.806	9.805	0.001	15947547	50.0	32.7	
						RPD = 8.04	
6 MCPA							
1	9.533	9.531	0.002	40469447	50.0	35.3	
2	9.947	9.945	0.002	22014161	50.0	30.7	
						RPD = 13.72	
7 Dichlorprop							
1	9.707	9.706	0.001	76389367	0.5000	0.3067	
2	10.148	10.148	0.000	41750714	0.5000	0.3055	
						RPD = 0.41	
8 2,4-D							
1	9.963	9.963	0.000	98308523	0.5000	0.3191	
2	10.258	10.258	0.000	55874970	0.5000	0.3426	
						RPD = 7.10	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.282	10.282	0.000	414780826	0.5000	0.3395	
2	10.571	10.572	-0.001	240196091	0.5000	0.3567	
						RPD = 4.97	
10 2,4,5-T							
1	10.443	10.444	-0.001	396667720	0.5000	0.3314	
2	10.689	10.692	-0.003	244084132	0.5000	0.3731	
						RPD = 11.85	
11 Dinoseb							
1	10.560	10.561	-0.001	148993326	0.5000	0.3166	
2	10.927	10.928	-0.001	73489557	0.5000	0.2702	
						RPD = 15.80	
12 2,4-DB							
1	10.598	10.601	-0.003	66329407	0.5000	0.3561	
2	10.881	10.884	-0.003	40378534	0.5000	0.3736	
						RPD = 4.79	
13 Picloram							
1	11.114	11.121	-0.007	525169171	0.5000	0.2947	
2	11.184	11.191	-0.007	278461789	0.5000	0.3059	
						RPD = 3.72	

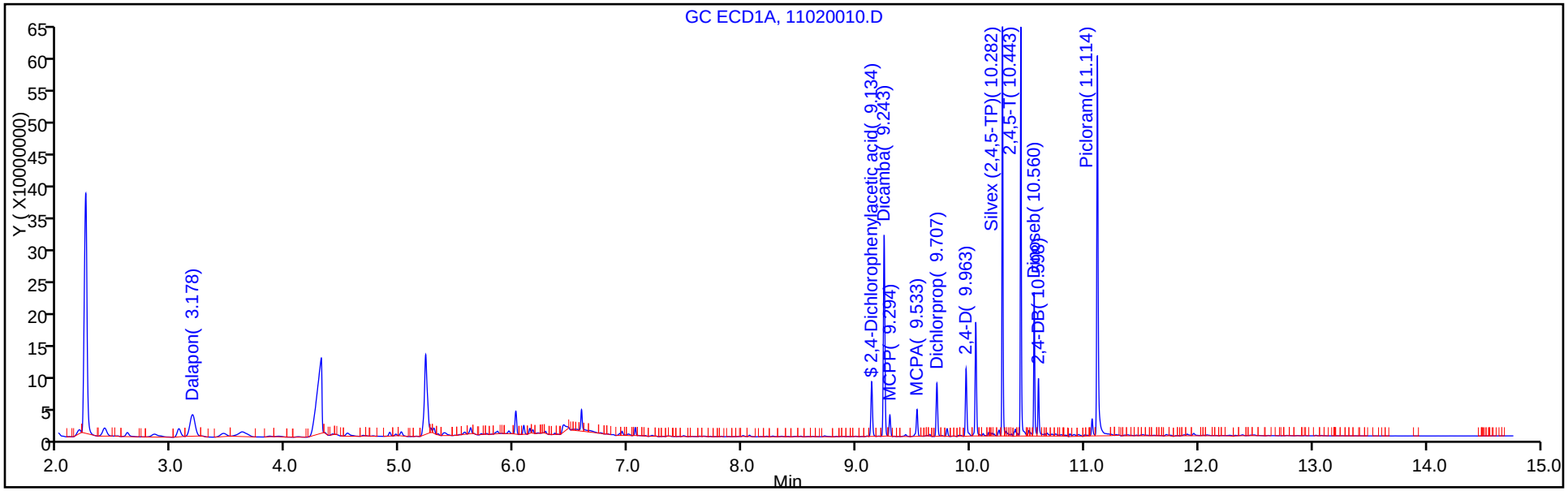
Report Date: 10-Nov-2016 13:37:39 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

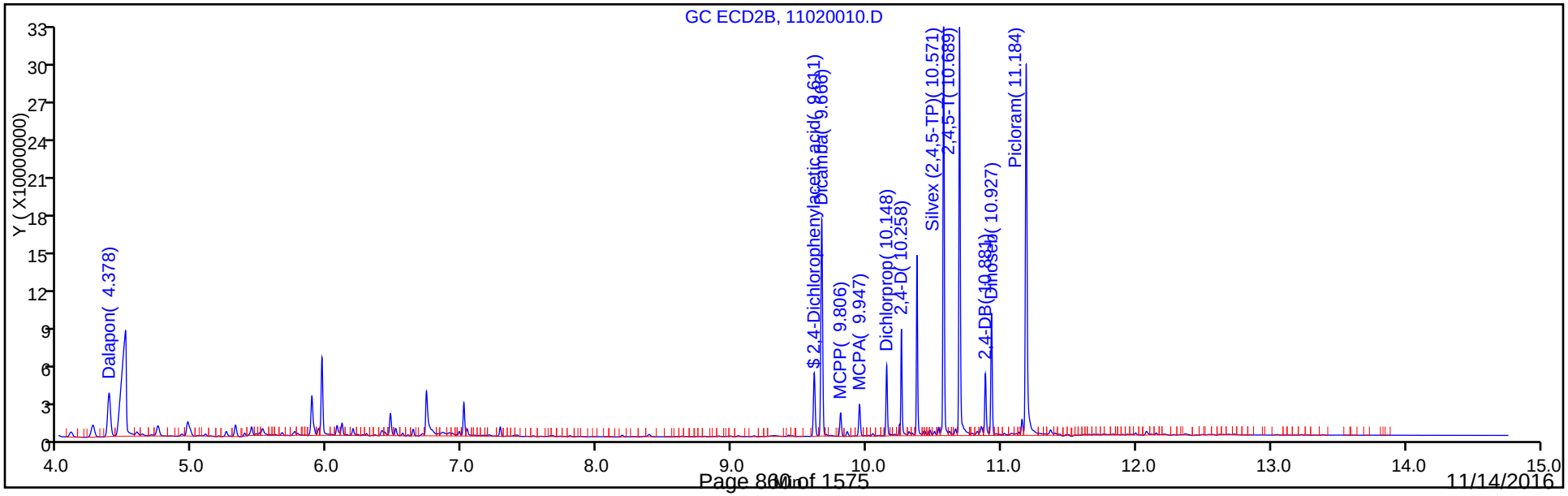
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020010.D

Injection Date:	02-Nov-2016 20:47:31	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	LCS 280-348542/2-A			Worklist Smp#:	10
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020010.D				
Lims ID:	LCS 280-348542/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	02-Nov-2016 20:47:31	ALS Bottle#:	5	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCS 280-348542/2				
Misc. Info.:	280-0052632-010				
Operator ID:	AMB	Instrument ID:	SGC_M		
Method:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m				
Limit Group:	GCSV - 8151				
Method Label:	8151A: Herbicides: DV-GC-0022				
Last Update:	10-Nov-2016 13:37:29	Calib Date:	25-Oct-2016 16:14:35		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D				
Column 1 :	Rti-35 sil MS (0.32 mm)		Det: GC ECD1A		
Column 2 :	Rti-XLB (0.32 mm)		Det: GC ECD2B		
Process Host:	XAWRK004				
First Level Reviewer: byla		Date:	10-Nov-2016 13:29:26		

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.3370	67.39

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.3506	70.12

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 280-348542/3-A

Matrix: Water | Lab File ID: 11020011.D

Analysis Method: 8151A DOD | Date Collected:

Extraction Method: 8151A | Date Extracted: 10/27/2016 12:46

Sample wt/vol: 1000(mL) | Date Analyzed: 11/02/2016 21:10

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: RTI-35silms ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 349518 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
93-76-5	2,4,5-T	3.10		1.0	0.60	0.19
94-75-7	2,4-D	3.00	J	4.0	0.60	0.21
94-82-6	2,4-DB	3.12	J	4.0	0.92	0.36
75-99-0	Dalapon	3.17		2.0	1.8	0.91
1918-00-9	Dicamba	3.02		2.0	0.60	0.15
120-36-5	Dichlorprop	2.99	J	4.0	1.8	0.65
94-74-6	MCPA	300	J	400	60	17
93-72-1	Silvex (2,4,5-TP)	3.23		1.0	0.60	0.17
93-65-2	MCPP	342	J	400	92	33

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	65		32-138

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020011.D
Lims ID: LCSD 280-348542/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 02-Nov-2016 21:10:02 ALS Bottle#: 6 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 280-348542/
Misc. Info.: 280-0052632-011
Operator ID: AMB Instrument ID: SGC_M

Method: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m
Limit Group: GCSV - 8151
Method Label: 8151A: Herbicides: DV-GC-0022
Last Update: 10-Nov-2016 13:37:29 Calib Date: 25-Oct-2016 16:14:35
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D

Column 1 : Rti-35 sil MS (0.32 mm) Det: GC ECD1A
Column 2 : Rti-XLB (0.32 mm) Det: GC ECD2B
Process Host: XAWRK004

First Level Reviewer: byla Date: 10-Nov-2016 13:29:50

	Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
	2 Dalapon							
	1	3.175	3.190	-0.015	120784877	0.5000	0.3172	
	2	4.373	4.376	-0.003	58126981	0.5000	0.3403	
							RPD = 7.01	
$	3 2,4-Dichlorophenylacetic acid							
	1	9.128	9.133	-0.005	80926346	0.5000	0.3269	
	2	9.605	9.609	-0.004	47611384	0.5000	0.3569	
							RPD = 8.75	
	4 Dicamba							
	1	9.238	9.242	-0.004	287996454	0.5000	0.3021	
	2	9.661	9.664	-0.003	157408092	0.5000	0.3267	
							RPD = 7.81	
	5 MCPP							
	1	9.289	9.293	-0.004	28203518	50.0	34.2	
	2	9.802	9.805	-0.003	15997856	50.0	32.8	
							RPD = 4.15	
	6 MCPA							
	1	9.527	9.531	-0.004	34506838	50.0	30.0	
	2	9.942	9.945	-0.003	22479668	50.0	31.4	
							RPD = 4.61	
	7 Dichlorprop							
	1	9.701	9.706	-0.005	74657940	0.5000	0.2994	
	2	10.144	10.148	-0.004	41453522	0.5000	0.3032	
							RPD = 1.27	
	8 2,4-D							
	1	9.957	9.963	-0.006	92731197	0.5000	0.3001	
	2	10.255	10.258	-0.003	56870880	0.5000	0.3489	
							RPD = 15.03	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
9 Silvex (2,4,5-TP)							
1	10.279	10.282	-0.003	394993307	0.5000	0.3228	
2	10.570	10.572	-0.002	237584775	0.5000	0.3527	
						RPD = 8.85	
10 2,4,5-T							
1	10.441	10.444	-0.003	371375240	0.5000	0.3098	
2	10.688	10.692	-0.004	242232094	0.5000	0.3702	
						RPD = 17.75	
11 Dinoseb							
1	10.559	10.561	-0.002	127556297	0.5000	0.2711	
2	10.927	10.928	-0.001	66556650	0.5000	0.2444	
						RPD = 10.36	
12 2,4-DB							
1	10.596	10.601	-0.005	58366187	0.5000	0.3120	
2	10.881	10.884	-0.003	40497353	0.5000	0.3747	
						RPD = 18.26	
13 Picloram							
1	11.114	11.121	-0.007	503528755	0.5000	0.2826	
2	11.184	11.191	-0.007	276757400	0.5000	0.3040	
						RPD = 7.30	

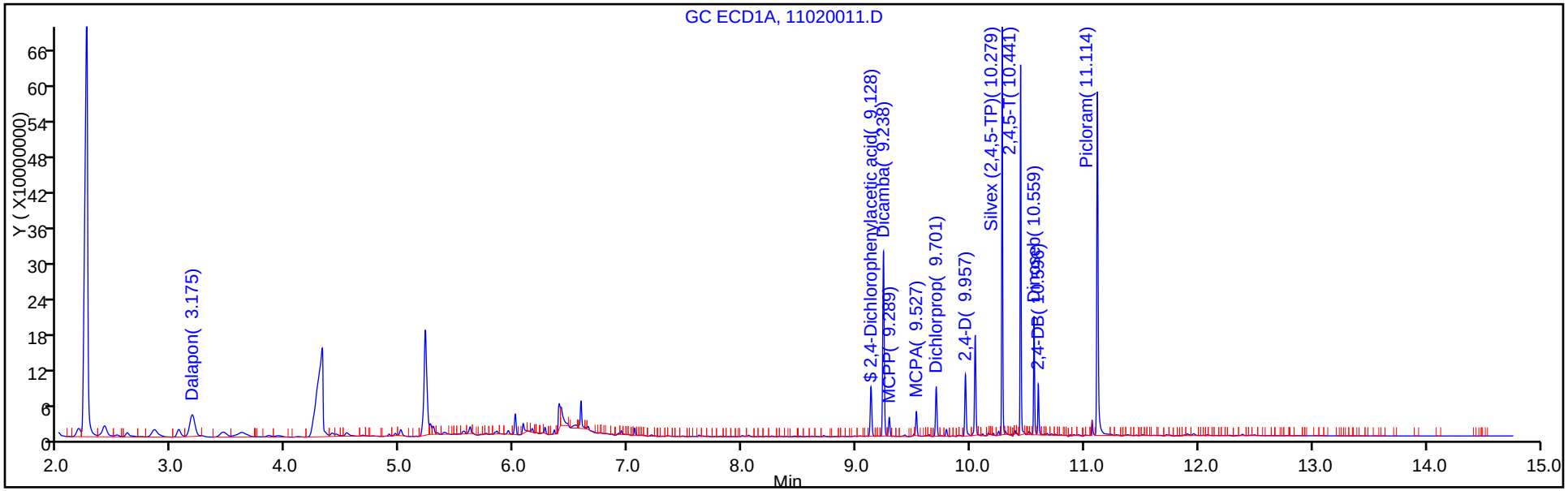
Report Date: 10-Nov-2016 13:37:44 Chrom Revision: 2.2 01-Nov-2016 11:37:52

TestAmerica Denver

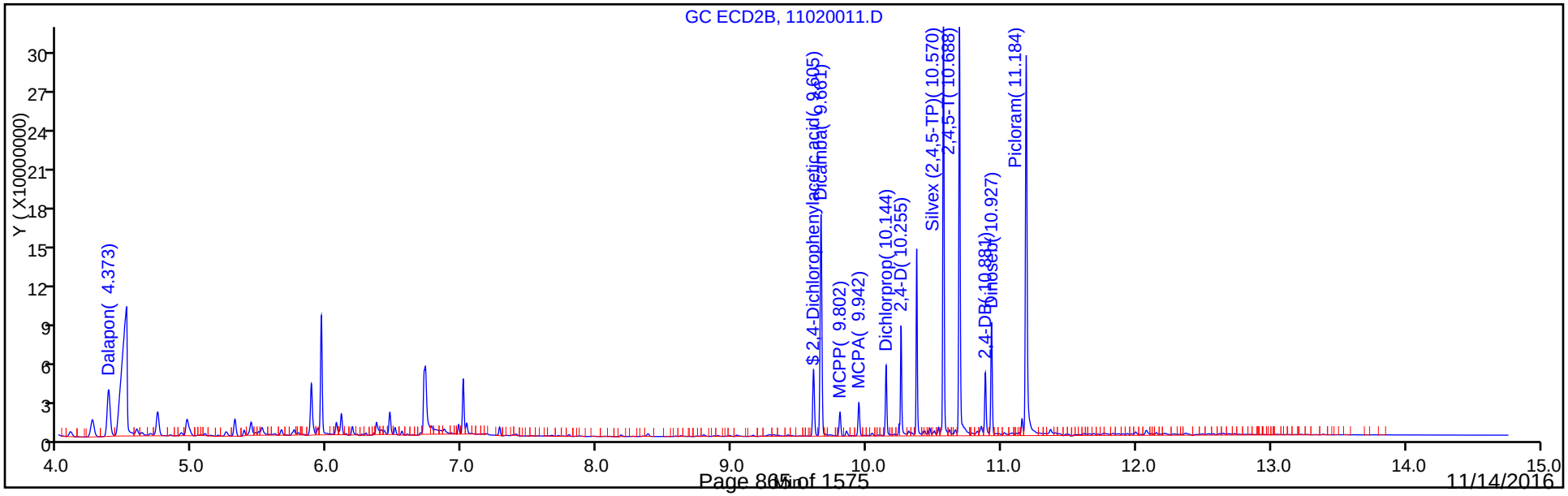
Data File: \\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020011.D

Injection Date:	02-Nov-2016 21:10:02	Instrument ID:	SGC_M	Operator ID:	AMB
Lims ID:	LCSD 280-348542/3-A			Worklist Smp#:	11
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	8151_615	Limit Group:	GCSV - 8151		

Column: Rti-35 sil MS (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: Rti-XLB (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\11020011.D				
Lims ID:	LCSD 280-348542/3-A				
Client ID:					
Sample Type:	LCSD				
Inject. Date:	02-Nov-2016 21:10:02	ALS Bottle#:	6	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCSD 280-348542/				
Misc. Info.:	280-0052632-011				
Operator ID:	AMB	Instrument ID:	SGC_M		
Method:	\\ChromNA\Denver\ChromData\SGC_M\20161102-52632.b\8151_615.m				
Limit Group:	GCSV - 8151				
Method Label:	8151A: Herbicides: DV-GC-0022				
Last Update:	10-Nov-2016 13:37:29	Calib Date:	25-Oct-2016 16:14:35		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\SGC_M\20161025-52267.b\10250009.D				
Column 1 :	Rti-35 sil MS (0.32 mm)		Det: GC ECD1A		
Column 2 :	Rti-XLB (0.32 mm)		Det: GC ECD2B		
Process Host:	XAWRK004				
First Level Reviewer: byla		Date:	10-Nov-2016 13:29:50		

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.3269	65.39

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 2,4-Dichlorophenylacetic acid	0.5000	0.3569	71.37

HERBICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: SGC_M Start Date: 10/25/2016 13:57

Analysis Batch Number: 348088 End Date: 10/25/2016 20:24

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD7 280-348088/3 IC		10/25/2016 13:57	1	10250003.D	RTI-35silms 0.32(mm)
STD7 280-348088/3 IC		10/25/2016 13:57	1	10250003.D	RTI-XLB 0.32(mm)
STD6 280-348088/4 IC		10/25/2016 14:20	1	10250004.D	RTI-35silms 0.32(mm)
STD6 280-348088/4 IC		10/25/2016 14:20	1	10250004.D	RTI-XLB 0.32(mm)
STD5 280-348088/5 IC		10/25/2016 14:43	1	10250005.D	RTI-35silms 0.32(mm)
STD5 280-348088/5 IC		10/25/2016 14:43	1	10250005.D	RTI-XLB 0.32(mm)
STD4 280-348088/6 ICRT		10/25/2016 15:06	1	10250006.D	RTI-35silms 0.32(mm)
STD4 280-348088/6 ICRT		10/25/2016 15:06	1	10250006.D	RTI-XLB 0.32(mm)
STD3 280-348088/7 IC		10/25/2016 15:28	1	10250007.D	RTI-35silms 0.32(mm)
STD3 280-348088/7 IC		10/25/2016 15:28	1	10250007.D	RTI-XLB 0.32(mm)
STD2 280-348088/8 IC		10/25/2016 15:51	1	10250008.D	RTI-35silms 0.32(mm)
STD2 280-348088/8 IC		10/25/2016 15:51	1	10250008.D	RTI-XLB 0.32(mm)
STD1 280-348088/9 IC		10/25/2016 16:14	1	10250009.D	RTI-35silms 0.32(mm)
STD1 280-348088/9 IC		10/25/2016 16:14	1	10250009.D	RTI-XLB 0.32(mm)
ICV 280-348088/10		10/25/2016 16:37	1	10250010.D	RTI-35silms 0.32(mm)
ICV 280-348088/10		10/25/2016 16:37	1	10250010.D	RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 17:00	1		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 17:00	1		RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 17:23	5		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 17:23	5		RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 17:46	1		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 17:46	1		RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 18:08	5		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 18:08	5		RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 18:31	5		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 18:31	5		RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 18:54	5		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 18:54	5		RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 19:16	5		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 19:16	5		RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 19:39	5		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 19:39	5		RTI-XLB 0.32(mm)
ZZZZZ		10/25/2016 20:02	5		RTI-35silms 0.32(mm)
ZZZZZ		10/25/2016 20:02	5		RTI-XLB 0.32(mm)
CCV 280-348088/20		10/25/2016 20:24	1		RTI-35silms 0.32(mm)
CCV 280-348088/20		10/25/2016 20:24	1		RTI-XLB 0.32(mm)

HERBICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: SGC_M Start Date: 11/02/2016 20:02

Analysis Batch Number: 349518 End Date: 11/03/2016 11:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVRT 280-349518/8		11/02/2016 20:02	1	11020008.D	RTI-35silms 0.32(mm)
CCVRT 280-349518/8		11/02/2016 20:02	1	11020008.D	RTI-XLB 0.32(mm)
MB 280-348542/1-A		11/02/2016 20:24	1	11020009.D	RTI-35silms 0.32(mm)
MB 280-348542/1-A		11/02/2016 20:24	1	11020009.D	RTI-XLB 0.32(mm)
LCS 280-348542/2-A		11/02/2016 20:47	1	11020010.D	RTI-35silms 0.32(mm)
LCS 280-348542/2-A		11/02/2016 20:47	1	11020010.D	RTI-XLB 0.32(mm)
LCSD 280-348542/3-A		11/02/2016 21:10	1	11020011.D	RTI-35silms 0.32(mm)
LCSD 280-348542/3-A		11/02/2016 21:10	1	11020011.D	RTI-XLB 0.32(mm)
320-22881-1		11/02/2016 21:32	10	11020012.D	RTI-35silms 0.32(mm)
320-22881-1		11/02/2016 21:32	10	11020012.D	RTI-XLB 0.32(mm)
ZZZZZ		11/02/2016 21:55	1		RTI-35silms 0.32(mm)
ZZZZZ		11/02/2016 21:55	1		RTI-XLB 0.32(mm)
ZZZZZ		11/02/2016 22:17	1		RTI-35silms 0.32(mm)
ZZZZZ		11/02/2016 22:17	1		RTI-XLB 0.32(mm)
ZZZZZ		11/02/2016 22:40	1		RTI-35silms 0.32(mm)
ZZZZZ		11/02/2016 22:40	1		RTI-XLB 0.32(mm)
ZZZZZ		11/02/2016 23:02	1		RTI-35silms 0.32(mm)
ZZZZZ		11/02/2016 23:02	1		RTI-XLB 0.32(mm)
ZZZZZ		11/02/2016 23:25	50		RTI-35silms 0.32(mm)
ZZZZZ		11/02/2016 23:25	50		RTI-XLB 0.32(mm)
ZZZZZ		11/02/2016 23:47	50		RTI-35silms 0.32(mm)
ZZZZZ		11/02/2016 23:47	50		RTI-XLB 0.32(mm)
CCV 280-349518/19		11/03/2016 00:10	1	11020019.D	RTI-35silms 0.32(mm)
CCV 280-349518/19		11/03/2016 00:10	1	11020019.D	RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 00:32	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 00:32	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 00:55	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 00:55	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 01:17	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 01:17	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 01:40	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 01:40	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 02:02	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 02:02	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 02:25	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 02:25	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 02:47	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 02:47	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 03:10	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 03:10	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 03:32	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 03:32	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 03:55	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 03:55	1		RTI-XLB 0.32(mm)
CCV 280-349518/30		11/03/2016 04:17	1		RTI-35silms 0.32(mm)

HERBICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: SGC_M Start Date: 11/02/2016 20:02

Analysis Batch Number: 349518 End Date: 11/03/2016 11:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-349518/30		11/03/2016 04:17	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 04:40	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 04:40	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 05:02	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 05:02	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 05:25	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 05:25	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 05:47	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 05:47	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 06:10	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 06:10	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 06:32	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 06:32	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 06:54	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 06:54	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 07:17	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 07:17	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 07:39	50		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 07:39	50		RTI-XLB 0.32(mm)
CCV 280-349518/40		11/03/2016 08:02	1		RTI-35silms 0.32(mm)
CCV 280-349518/40		11/03/2016 08:02	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 08:24	50		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 08:24	50		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 08:47	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 08:47	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 09:10	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 09:10	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 09:32	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 09:32	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 09:55	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 09:55	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 10:17	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 10:17	1		RTI-XLB 0.32(mm)
ZZZZZ		11/03/2016 10:40	1		RTI-35silms 0.32(mm)
ZZZZZ		11/03/2016 10:40	1		RTI-XLB 0.32(mm)
CCV 280-349518/48		11/03/2016 11:03	1		RTI-35silms 0.32(mm)
CCV 280-349518/48		11/03/2016 11:03	1		RTI-XLB 0.32(mm)

HERBICIDES BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 348542 Batch Start Date: 10/27/16 12:46 Batch Analyst: Isberg, Kyle

Batch Method: 8151A Batch End Date: 11/02/16 00:08

Lab Sample ID	Client Sample ID	Method Chain	Basis	ReceivedpH	GrossWeight	TareWeight	InitialAmount	FirstAdjustpH	SecondAdjustpH
MB 280-348542/1		8151A, 8151A DOD		7 SU			1000 mL	>12	<2
LCS 280-348542/2		8151A, 8151A DOD		7 SU			1000 mL	>12	<2
LCSD 280-348542/3		8151A, 8151A DOD		7 SU			1000 mL	>12	<2
320-22881-H-1	JBER-WW001	8151A, 8151A DOD	T	6 SU	1550.1 g	508.1 g	1042 mL	>12	<2

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	8151 LCS 00082	8151Surrogate 00126			
MB 280-348542/1		8151A, 8151A DOD		10 mL		1 mL			
LCS 280-348542/2		8151A, 8151A DOD		10 mL	0.5 mL	1 mL			
LCSD 280-348542/3		8151A, 8151A DOD		10 mL	0.5 mL	1 mL			
320-22881-H-1	JBER-WW001	8151A, 8151A DOD	T	10 mL		1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

HERBICIDES BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 348542 Batch Start Date: 10/27/16 12:46 Batch Analyst: Isberg, Kyle

Batch Method: 8151A Batch End Date: 11/02/16 00:08

Batch Notes	
Balance ID	B442138757
Batch Comment	pip: BB-8 (10.00), C (0.5)
Analyst ID - Concentration	ELV
Diethyl Ether ID	EthylEther_01367/1368/1369
H2O ID	N. Elga
Sulfuric Acid Lot Number	12N H2SO4_00401
Hexane ID	Hexane_Cycl_00039
Potassium Hydroxide ID	37% KOH_00158
MeCL2 ID	MeCl2_Cycl_00305
Methanol ID	Methanol_00127
Acidified Na2SO4 ID	Acid_Na2SO4_0459/456
NaCl ID	164935
Pipette ID	k
Prep Solvent Volume Used	240 mL
Person's name who did the prep	RC(Trainee)/KI(Trainer)
Analyst ID - Reagent Drop Witness	Reviewer:GLK
Silicic Acid ID	SilicicAcid_00016
SOP Number	DV-OP-0011
Sufficient volume for MS/MSD?	no
TMSDM ID	TMSD_00062
Uncorrected Temperature	65 Degrees C
Vendor of Reagent used	JT Baker
Water Bath ID	A
Water Bath Temperature	65 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Method 8081B

Organochlorine Pesticides (GC) by Method 8081B

FORM II
PESTICIDES SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): STX-CLP I ID: 0.32(mm) GC Column (2): STX-CLP II ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCX1 #	TCX2 #	DCBP1 #	DCBP2 #
JBER-WW001	320-22881-1	70	88	36	43
	MB 320-134124/1-A	86	87	68	67
	LCS 320-134124/2-A	90		75	
	LCS 320-134124/5-A	85 M		29 M	
	LCSD 320-134124/3-A	87		70	

	QC LIMITS
TCX = Tetrachloro-m-xylene	44-124
DCBP = DCB Decachlorobiphenyl	12-131

Column to be used to flag recovery values

FORM II 8081B

FORM III
PESTICIDES LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 1101-009.D

Lab ID: LCS 320-134124/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
alpha-BHC	0.500	0.557	111	54-138	
gamma-BHC (Lindane)	0.500	0.540	108	59-134	
beta-BHC	0.500	0.493	99	56-136	
delta-BHC	0.500	0.590	118	52-142	
Heptachlor	0.500	0.530	106	54-130	
Aldrin	0.500	0.484	97	45-134	
Heptachlor epoxide	0.500	0.528	106	61-133	
gamma-Chlordane	0.500	0.535	107	56-136	
alpha-Chlordane	0.500	0.530	106	60-129	
Endosulfan I	0.500	0.426	85	62-126	
4,4'-DDE	0.500	0.540	108	57-135	
Dieldrin	0.500	0.559	112	60-136	
Endrin	0.500	0.591	118	60-138	
4,4'-DDD	0.500	0.544	109	56-143	
Endosulfan II	0.500	0.516	103	52-135	
4,4'-DDT	0.500	0.656	131	51-143	
Endrin aldehyde	0.500	0.450	90	51-132	
Endosulfan sulfate	0.500	0.523	105	62-133	M
Methoxychlor	0.500	0.580	116	54-145	
Endrin ketone	0.500	0.542	108	58-134	

Column to be used to flag recovery and RPD values

FORM III 8081B

FORM III
PESTICIDES LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 1101-011.D

Lab ID: LCS 320-134124/5-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Toxaphene	5.00	5.57	111	33-134	

Column to be used to flag recovery and RPD values

FORM III 8081B

FORM III
PESTICIDES LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 1101-010.D

Lab ID: LCSD 320-134124/3-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
alpha-BHC	0.500	0.555	111	0	30	54-138	
gamma-BHC (Lindane)	0.500	0.531	106	2	30	59-134	
beta-BHC	0.500	0.481	96	3	30	56-136	
delta-BHC	0.500	0.578	116	2	30	52-142	
Heptachlor	0.500	0.519	104	2	30	54-130	
Aldrin	0.500	0.485	97	0	30	45-134	
Heptachlor epoxide	0.500	0.522	104	1	30	61-133	
gamma-Chlordane	0.500	0.530	106	1	30	56-136	
alpha-Chlordane	0.500	0.526	105	1	30	60-129	
Endosulfan I	0.500	0.425	85	0	30	62-126	
4,4'-DDE	0.500	0.532	106	1	30	57-135	
Dieldrin	0.500	0.559	112	0	30	60-136	
Endrin	0.500	0.596	119	1	30	60-138	
4,4'-DDD	0.500	0.542	108	0	30	56-143	
Endosulfan II	0.500	0.518	104	0	30	52-135	
4,4'-DDT	0.500	0.657	131	0	30	51-143	
Endrin aldehyde	0.500	0.468	94	4	30	51-132	
Endosulfan sulfate	0.500	0.562	112	7	30	62-133	
Methoxychlor	0.500	0.590	118	2	30	54-145	
Endrin ketone	0.500	0.547	109	1	30	58-134	

Column to be used to flag recovery and RPD values

FORM III 8081B

FORM IV
PESTICIDES METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: MB 320-134124/1-A

Matrix: Water Date Extracted: 10/24/2016 10:43

Lab File ID:(1) 1101-008.D Lab File ID:(2) 1101-008.D

Date Analyzed:(1) 11/01/2016 12:06 Date Analyzed:(2) 11/01/2016 12:06

Instrument ID:(1) GC75 Instrument ID:(2) GC75

GC Column:(1) STX-CLP I ID: 0.32(mm) GC Column:(2) STX-CLP II ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 320-134124/2-A	11/01/2016 12:21	11/01/2016 12:21
	LCSD 320-134124/3-A	11/01/2016 12:37	11/01/2016 12:37
	LCS 320-134124/5-A	11/01/2016 12:53	11/01/2016 12:53
JBER-WW001	320-22881-1	11/01/2016 14:49	11/01/2016 14:49

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Sample No.: STD005 320-135054/13 Date Analyzed: 10/29/2016 15:19

Instrument ID: GC75 GC Column: STX-CLP I ID: 0.32(mm)

Lab File ID (Standard): 1029-013.D Heated Purge: (Y/N) N

Calibration ID: 26306

		TCX		DCBP			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION SURROGATE		45828665	3.86	37598611	9.21		
UPPER LIMIT			3.89		9.24		
LOWER LIMIT			3.83		9.18		
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-135054/17		115071422	3.86	95364744	9.21		
MB 320-134124/1-A		73709029	3.86	47977123	9.20		
LCS 320-134124/2-A		78436326	3.85	53706077	9.20		
LCSD 320-134124/3-A		72620095	3.85	48148890	9.20		
LCS 320-134124/5-A		74532727	3.85	20861520	9.20		
320-22881-1	JBER-WW001	67067057	3.86	28294219	9.21		

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

TCX RT Limit = ± 0.03 minutes of surrogate RT
DCBP RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8081B

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Sample No.: STD005 320-135054/13 Date Analyzed: 10/29/2016 15:19

Instrument ID: GC75 GC Column: STX-CLP II ID: 0.32(mm)

Lab File ID (Standard): 1029-013.D Heated Purge: (Y/N) N

Calibration ID: 26307

		TCX		DCBP			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION SURROGATE		99119320	3.73	77817606	9.41		
UPPER LIMIT			3.76		9.44		
LOWER LIMIT			3.70		9.38		
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-135054/17		254985353	3.73	196268079	9.41		
MB 320-134124/1-A		162373199	3.73	97919645	9.40		
320-22881-1	JBER-WW001	145444920	3.73	55774951	9.41		

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

TCX RT Limit = ± 0.03 minutes of surrogate RT
DCBP RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8081B

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Sample No.: CCVRT 320-135416/3 Date Analyzed: 11/01/2016 10:22

Instrument ID: GC75 GC Column: STX-CLP I ID: 0.32(mm)

Lab File ID (Standard): 1101-003.D Heated Purge: (Y/N) N

Calibration ID: 26306

		TCX		DCBP			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
CONTINUING CALIBRATION SURROGATE		46055804	3.86	38895126	9.21		
UPPER LIMIT		124	3.89	131	9.24		
LOWER LIMIT		44	3.83	12	9.18		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-134124/1-A		73709029	3.86	47977123	9.20		
LCS 320-134124/2-A		78436326	3.85	53706077	9.20		
LCSD 320-134124/3-A		72620095	3.85	48148890	9.20		
LCS 320-134124/5-A		74532727	3.85	20861520	9.20		
320-22881-1	JBER-WW001	67067057	3.86	28294219	9.21		
CCV 320-135416/21		48656961	3.85	44459341	9.20		

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

TCX RT Limit = ± 0.03 minutes of surrogate RT
DCBP RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8081B

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Sample No.: CCVRT 320-135416/3 Date Analyzed: 11/01/2016 10:22

Instrument ID: GC75 GC Column: STX-CLP II ID: 0.32(mm)

Lab File ID (Standard): 1101-003.D Heated Purge: (Y/N) N

Calibration ID: 26307

		TCX		DCBP			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
CONTINUING CALIBRATION SURROGATE		97174487	3.73	81048745	9.40		
UPPER LIMIT		124	3.76	131	9.43		
LOWER LIMIT		44	3.70	12	9.37		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-134124/1-A		162373199	3.73	97919645	9.40		
320-22881-1	JBER-WW001	145444920	3.73	55774951	9.41		
CCV 320-135416/21		105748603	3.73	89190155	9.40		

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

TCX RT Limit = ± 0.03 minutes of surrogate RT
DCBP RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8081B

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-134124/2-A

Instrument ID (1): GC75 Instrument ID (2): GC75

Date Analyzed (1): 11/01/2016 12:21 Date Analyzed (2): 11/01/2016 12:21

GC Column (1): STX-CLP I ID: 0.32(mm) GC Column (2): STX-CLP II ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		4.34	4.32	4.37	0.557		5.6
	2		4.25	4.23	4.28	0.527		
gamma-BHC (Lindane)	1		4.59	4.57	4.62	0.540		0.9
	2		4.53	4.50	4.55	0.535		
beta-BHC	1		4.65	4.63	4.68	0.493		1.6
	2		4.59	4.57	4.62	0.501		
delta-BHC	1		4.79	4.76	4.82	0.590		2.5
	2		4.80	4.77	4.82	0.575		
Heptachlor	1		4.94	4.92	4.97	0.530		7.4
	2		4.84	4.81	4.86	0.492		
Aldrin	1		5.16	5.14	5.19	0.484		1.4
	2		5.05	5.03	5.08	0.477		
Heptachlor epoxide	1		5.64	5.61	5.66	0.528		1.2
	2		5.48	5.45	5.50	0.522		
gamma-Chlordane	1		5.75	5.73	5.78	0.535		1.7
	2		5.63	5.61	5.66	0.544		
alpha-Chlordane	1		5.87	5.85	5.90	0.530		0.1
	2		5.76	5.73	5.78	0.530		
4,4'-DDE	1		5.93	5.91	5.96	0.540		3.3
	2		5.91	5.89	5.94	0.558		
Endosulfan I	1		6.00	5.98	6.03	0.426		0.8
	2		5.81	5.79	5.84	0.430		
Dieldrin	1		6.25	6.23	6.28	0.559		1.6
	2		6.08	6.05	6.10	0.568		
Endrin	1		6.52	6.50	6.55	0.591		4.3
	2		6.42	6.39	6.44	0.566		
4,4'-DDD	1		6.59	6.57	6.63	0.544		1.1
	2		6.56	6.53	6.58	0.550		
Endosulfan II	1		6.80	6.78	6.83	0.516		1.1
	2		6.68	6.66	6.71	0.510		
4,4'-DDT	1		6.97	6.95	7.00	0.656		14.6
	2		6.99	6.97	7.02	0.566		
Endrin aldehyde	1		7.37	7.35	7.40	0.450		0.7
	2		7.17	7.14	7.19	0.453		
Methoxychlor	1		7.62	7.60	7.65	0.580		13.7
	2		7.89	7.87	7.92	0.506		
Endosulfan sulfate	1		7.87	7.85	7.90	0.523		1.1
	2		7.53	7.50	7.55	0.529		
Endrin ketone	1		8.17	8.14	8.19	0.542		4.7
	2		8.11	8.09	8.14	0.517		

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-134124/3-A

Instrument ID (1): GC75 Instrument ID (2): GC75

Date Analyzed (1): 11/01/2016 12:37 Date Analyzed (2): 11/01/2016 12:37

GC Column (1): STX-CLP I ID: 0.32(mm) GC Column (2): STX-CLP II ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		4.34	4.32	4.37	0.555		8.7
	2		4.25	4.23	4.28	0.509		
gamma-BHC (Lindane)	1		4.59	4.57	4.62	0.531		4.4
	2		4.52	4.50	4.55	0.509		
beta-BHC	1		4.65	4.63	4.68	0.481		0.1
	2		4.59	4.57	4.62	0.481		
delta-BHC	1		4.79	4.76	4.82	0.578		4.4
	2		4.80	4.77	4.82	0.553		
Heptachlor	1		4.94	4.92	4.97	0.519		6.8
	2		4.83	4.81	4.86	0.485		
Aldrin	1		5.16	5.14	5.19	0.485		3.7
	2		5.05	5.03	5.08	0.467		
Heptachlor epoxide	1		5.63	5.61	5.66	0.522		2.5
	2		5.47	5.45	5.50	0.509		
gamma-Chlordane	1		5.75	5.73	5.78	0.530		1.4
	2		5.63	5.61	5.66	0.538		
alpha-Chlordane	1		5.87	5.85	5.90	0.526		1.3
	2		5.76	5.73	5.78	0.519		
4,4'-DDE	1		5.93	5.91	5.96	0.532		2.3
	2		5.91	5.89	5.94	0.545		
Endosulfan I	1		6.00	5.98	6.03	0.425		0.9
	2		5.81	5.79	5.84	0.421		
Dieldrin	1		6.25	6.23	6.28	0.559		0.1
	2		6.08	6.05	6.10	0.560		
Endrin	1		6.52	6.50	6.55	0.596		6.2
	2		6.41	6.39	6.44	0.560		
4,4'-DDD	1		6.59	6.57	6.63	0.542		0.5
	2		6.56	6.53	6.58	0.539		
Endosulfan II	1		6.80	6.78	6.83	0.518		3.1
	2		6.68	6.66	6.71	0.502		
4,4'-DDT	1		6.97	6.95	7.00	0.657		18.4
	2		6.99	6.97	7.02	0.547		
Endrin aldehyde	1		7.37	7.35	7.40	0.468		1.0
	2		7.16	7.14	7.19	0.463		
Methoxychlor	1		7.62	7.60	7.65	0.590		14.9
	2		7.89	7.87	7.92	0.509		
Endosulfan sulfate	1		7.87	7.85	7.90	0.562		6.3
	2		7.53	7.50	7.55	0.528		
Endrin ketone	1		8.16	8.14	8.19	0.547		6.3
	2		8.11	8.09	8.14	0.514		

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: JBER-WW001 | Lab Sample ID: 320-22881-1

Matrix: Water | Lab File ID: 1101-016.D

Analysis Method: 8081B | Date Collected: 10/20/2016 10:40

Extraction Method: 3510C | Date Extracted: 10/24/2016 10:43

Sample wt/vol: 1057.5(mL) | Date Analyzed: 11/01/2016 14:49

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: STX-CLP I ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 135416 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
319-84-6	alpha-BHC	0.024	U	0.047	0.024	0.0066
58-89-9	gamma-BHC (Lindane)	0.011	U M	0.047	0.011	0.0057
319-85-7	beta-BHC	0.024	U M	0.047	0.024	0.0066
319-86-8	delta-BHC	0.024	U M	0.047	0.024	0.010
76-44-8	Heptachlor	0.024	U M	0.047	0.024	0.0066
309-00-2	Aldrin	0.011	U	0.047	0.011	0.0057
1024-57-3	Heptachlor epoxide	0.011	U	0.047	0.011	0.0057
5103-74-2	gamma-Chlordane	0.024	U	0.047	0.024	0.011
5103-71-9	alpha-Chlordane	0.011	U	0.047	0.011	0.0057
959-98-8	Endosulfan I	0.011	U	0.047	0.011	0.0057
72-55-9	4,4'-DDE	0.024	U	0.047	0.024	0.011
60-57-1	Dieldrin	0.024	U	0.047	0.024	0.011
72-20-8	Endrin	0.024	U	0.047	0.024	0.011
72-54-8	4,4'-DDD	0.024	U	0.047	0.024	0.011
33213-65-9	Endosulfan II	0.024	U	0.047	0.024	0.011
50-29-3	4,4'-DDT	0.024	U	0.047	0.024	0.011
7421-93-4	Endrin aldehyde	0.076	U	0.095	0.076	0.024
1031-07-8	Endosulfan sulfate	0.024	U	0.047	0.024	0.011
72-43-5	Methoxychlor	0.076	U	0.095	0.076	0.040
53494-70-5	Endrin ketone	0.076	U	0.095	0.076	0.019
8001-35-2	Toxaphene	0.95	U	1.9	0.95	0.48

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	70		44-124
2051-24-3	DCB Decachlorobiphenyl	36		12-131

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D
Lims ID: 320-22881-G-1-A
Client ID: JBER-WW001
Sample Type: Client
Inject. Date: 01-Nov-2016 14:49:32 ALS Bottle#: 16 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 22881-1
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 17:04:32 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 17:04:32

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene						
1	3.039	3.036	0.004	523921212	200.0	
2	2.802	2.800	0.002	940588923	200.0	
$ 3 Tetrachloro-m-xylene						
1	3.860	3.856	0.004	67067057	28.1	
2	3.728	3.726	0.002	145444920	35.2	
					RPD = 22.44	
33 Diallate						M
1	4.200	4.215	-0.015	38744307	495.7	
1	4.339	4.337	0.002	2740693	219.8	
		Average of Peak Amounts =			357.7	
2	4.102	4.087	0.015	850122	6.81	M
2	4.166	4.175	-0.009	2522682	137.2	M
		Average of Peak Amounts =			72.0	
					RPD = 132.96	
11 alpha-BHC						M
1	4.339	4.341	-0.002	2740693	0.7802	
2	4.257	4.252	0.005	174183	0.0280	M
					RPD = 186.15	
LOD = 0.0400						
2 gamma-BHC (Lindane)						M
1	4.579	4.590	-0.011	146968	0.0442	M
2	4.509	4.524	-0.015	1571994	0.2692	M
					RPD = 143.53	
LOD = 0.0800						
6 beta-BHC						M
1	4.643	4.657	-0.014	1154380	0.8138	M
2	4.597	4.592	0.005	477170	0.1999	M
					RPD = 121.14	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
18 delta-BHC						M
1	4.778	4.789	-0.011	604301	0.1944	M
2	4.790	4.799	-0.009	3304559	0.5759	M
					RPD = 99.06	
LOD = 0.2000						
19 Heptachlor						M
1	4.946	4.945	0.001	709484	0.2293	M
2	4.820	4.834	-0.014	1131146	0.2132	M
					RPD = 7.26	
31 2,4'-DDD						
1	6.113	6.117	-0.004	37620	0.0220	
2	6.120	6.130	-0.010	182343	0.0640	
					RPD = 97.69	
LOD = 0.0450						
12 4,4'-DDD						M
1	6.606	6.599	0.007	2243160	0.9763	
2	6.563	6.559	0.004	4763580	1.21	M
					RPD = 21.18	
14 4,4'-DDT						M
1	6.986	6.978	0.008	371894	0.1990	
2	6.998	6.992	0.006	1668386	0.4815	M
					RPD = 83.03	
30 Endosulfan sulfate						
1	7.874	7.879	-0.005	177783	0.0779	
2	7.519	7.526	-0.007	220921	0.0567	
					RPD = 31.42	
LOD = 0.2000						
1 Endrin ketone						
1	8.158	8.169	-0.011	3980679	1.61	
2	8.105	8.112	-0.007	926384	0.2209	
					RPD = 151.78	
$ 23 DCB Decachlorobiphenyl						
1	9.214	9.206	0.008	28294219	14.4	
2	9.405	9.400	0.005	55774951	17.1	
					RPD = 17.40	

QC Flag Legend

Processing Flags
7 - Failed Limit of Detection
Review Flags
M - Manually Integrated

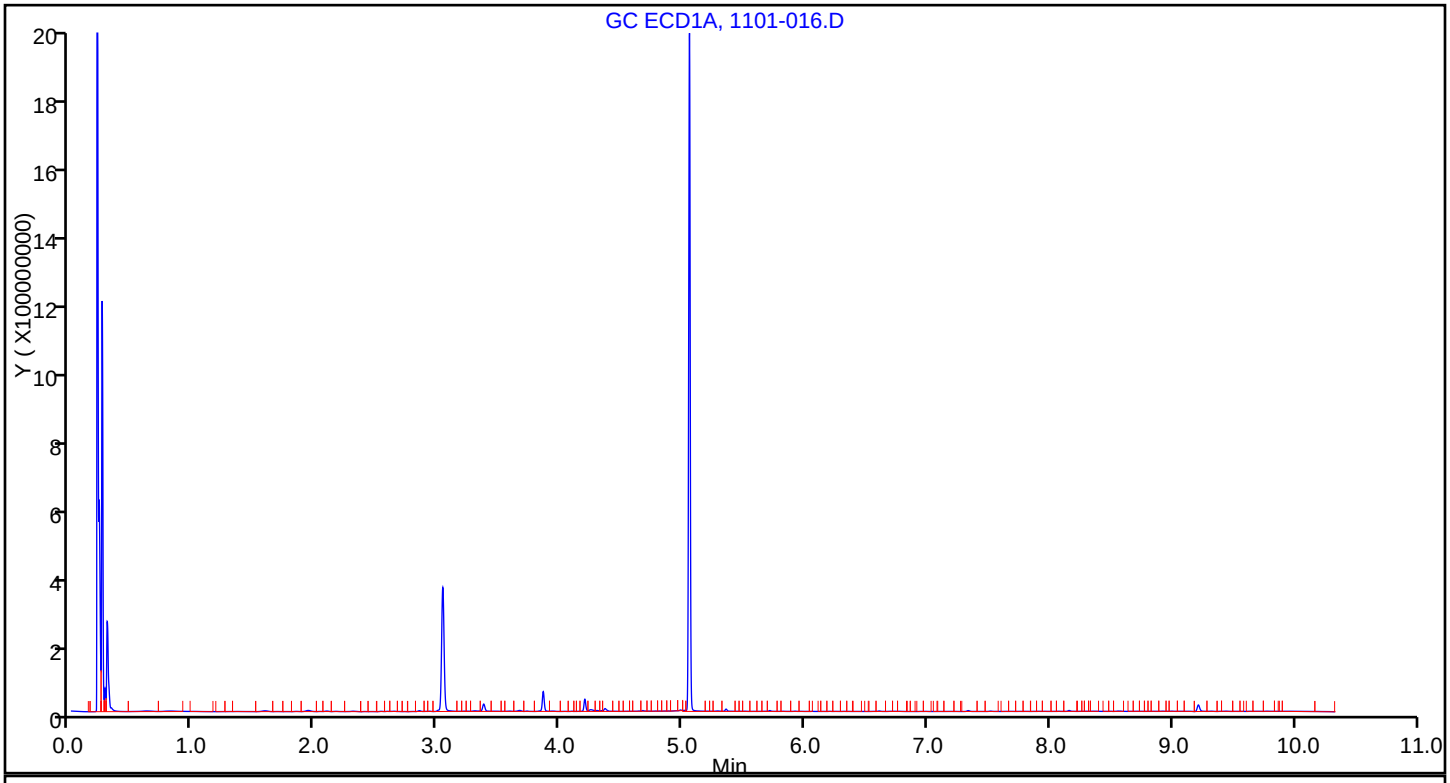
Reagents:

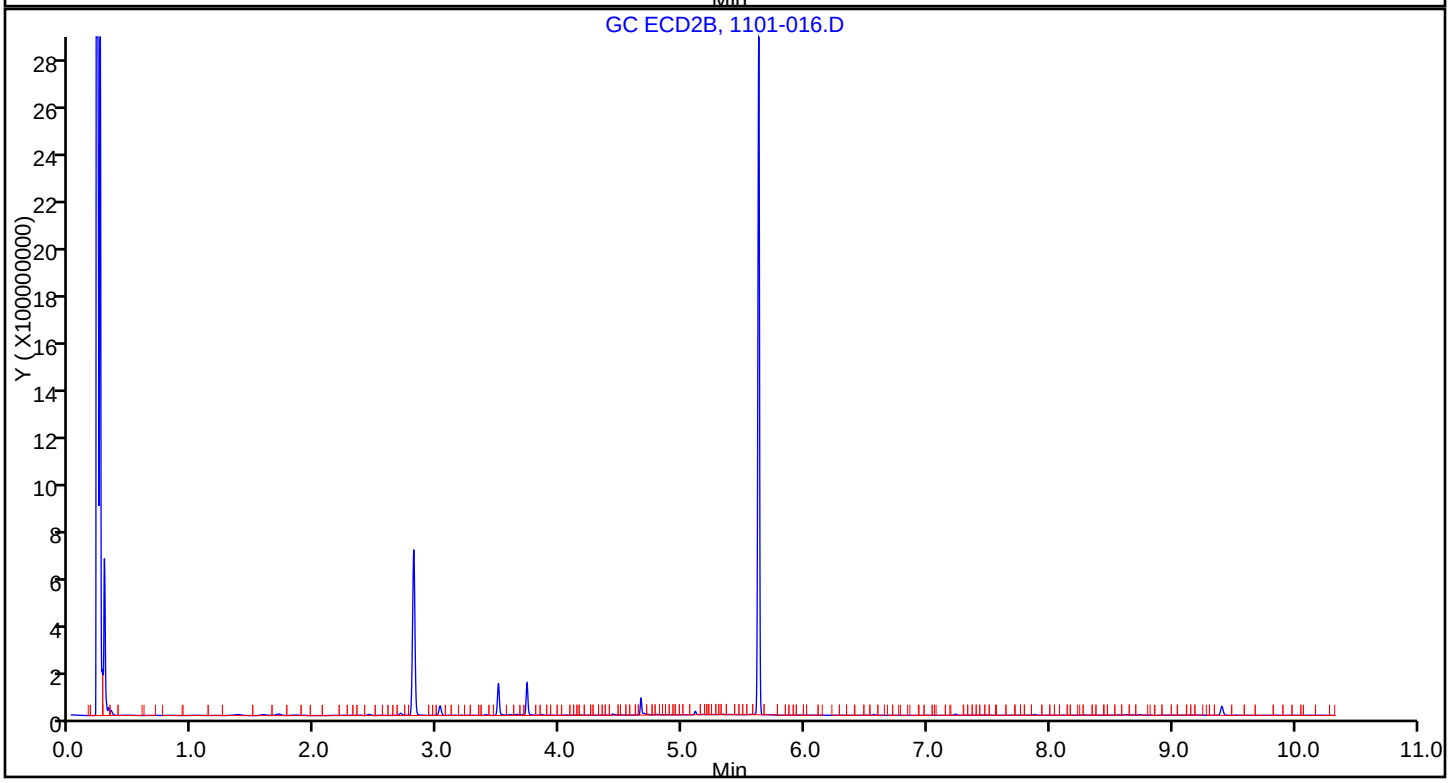
GCPESTISIM_00005 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 01-Nov-2016 17:04:34 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D
Lims ID: 320-22881-G-1-A
Client ID: JBER-WW001
Sample Type: Client
Inject. Date: 01-Nov-2016 14:49:32 ALS Bottle#: 16 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 22881-1
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 17:04:32 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 17:04:32

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	28.1	70.23
$ 23 DCB Decachlorobiphenyl	40.0	14.4	35.98

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	35.2	87.98
$ 23 DCB Decachlorobiphenyl	40.0	17.1	42.84

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

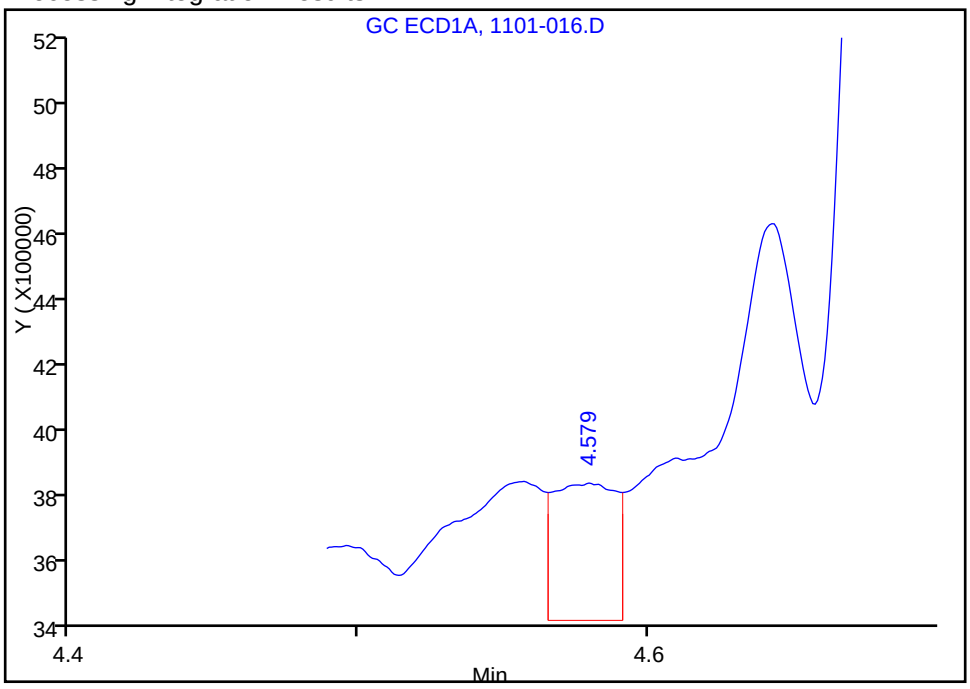
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

2 gamma-BHC (Lindane), CAS: 58-89-9

Signal: 1

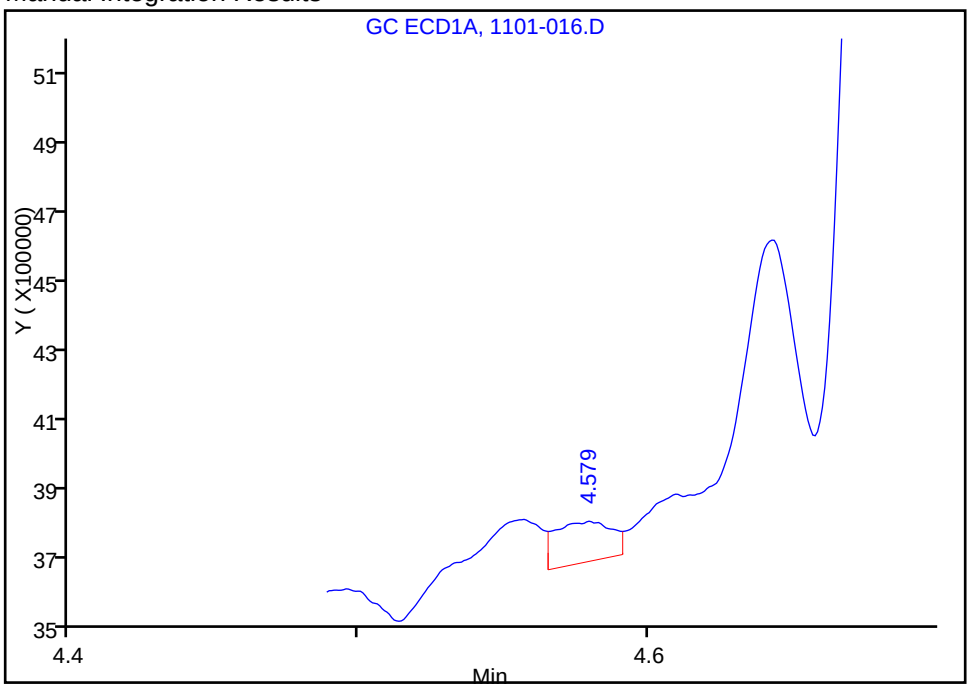
Processing Integration Results

RT: 4.58
Area: 590036
Amount: 0.177651
Amount Units: ug/l



Manual Integration Results

RT: 4.58
Area: 146968
Amount: 0.044250
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

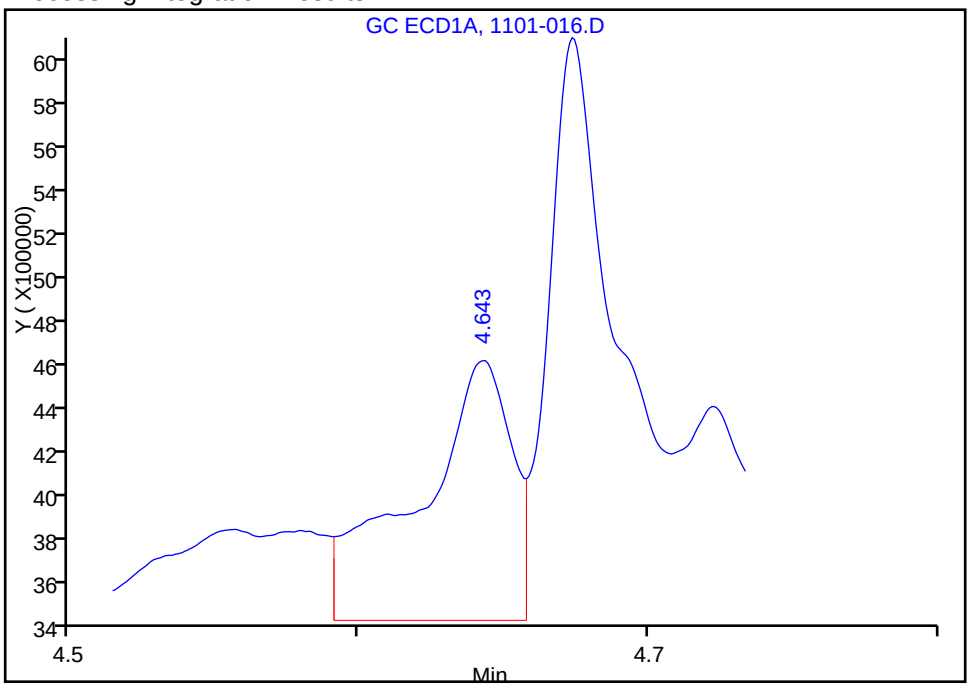
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

6 beta-BHC, CAS: 319-85-7

Signal: 1

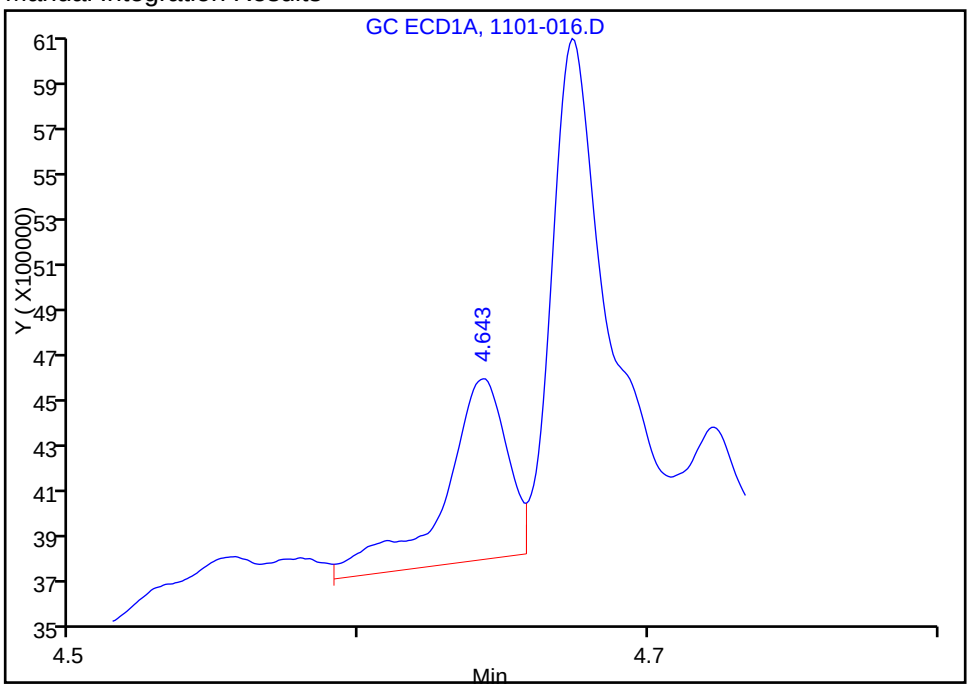
Processing Integration Results

RT: 4.64
Area: 2588008
Amount: 1.824547
Amount Units: ug/l



Manual Integration Results

RT: 4.64
Area: 1154380
Amount: 0.813838
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

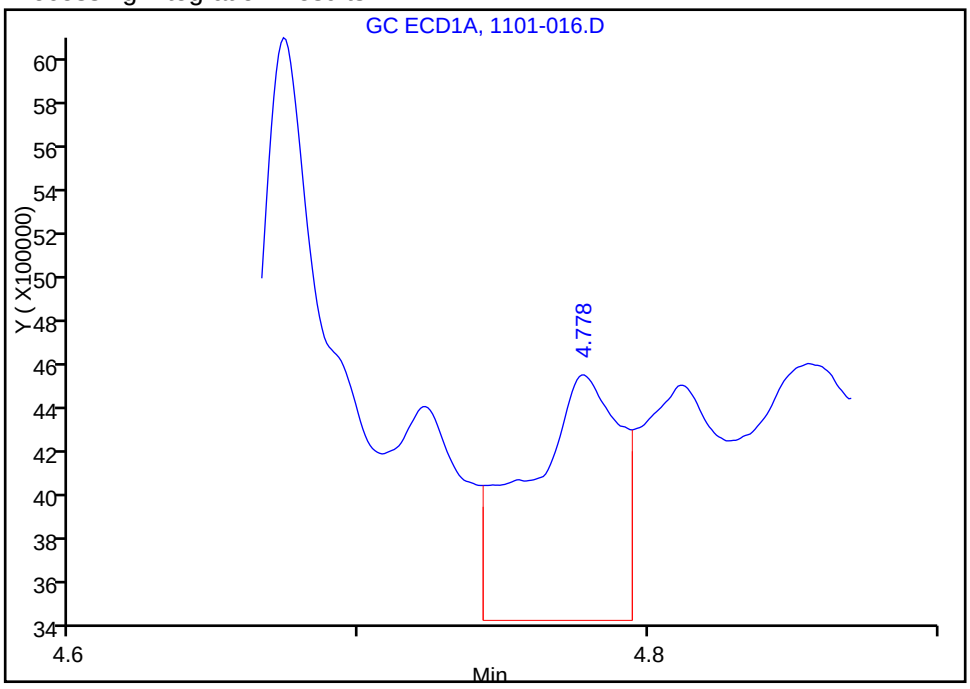
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

18 delta-BHC, CAS: 319-86-8

Signal: 1

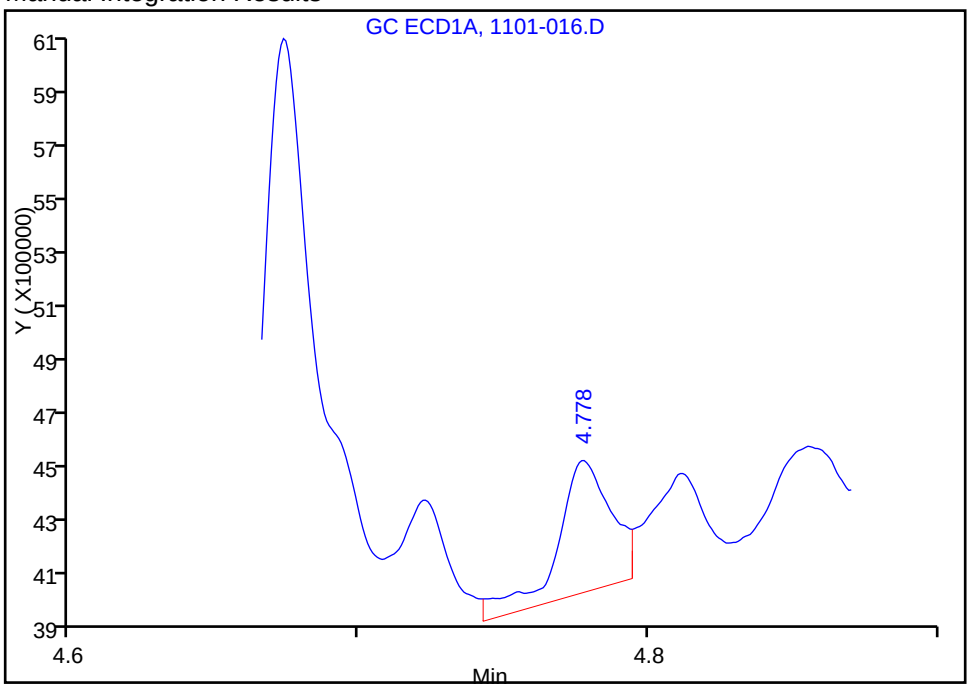
Processing Integration Results

RT: 4.78
Area: 2427675
Amount: 0.780881
Amount Units: ug/l



Manual Integration Results

RT: 4.78
Area: 604301
Amount: 0.194378
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

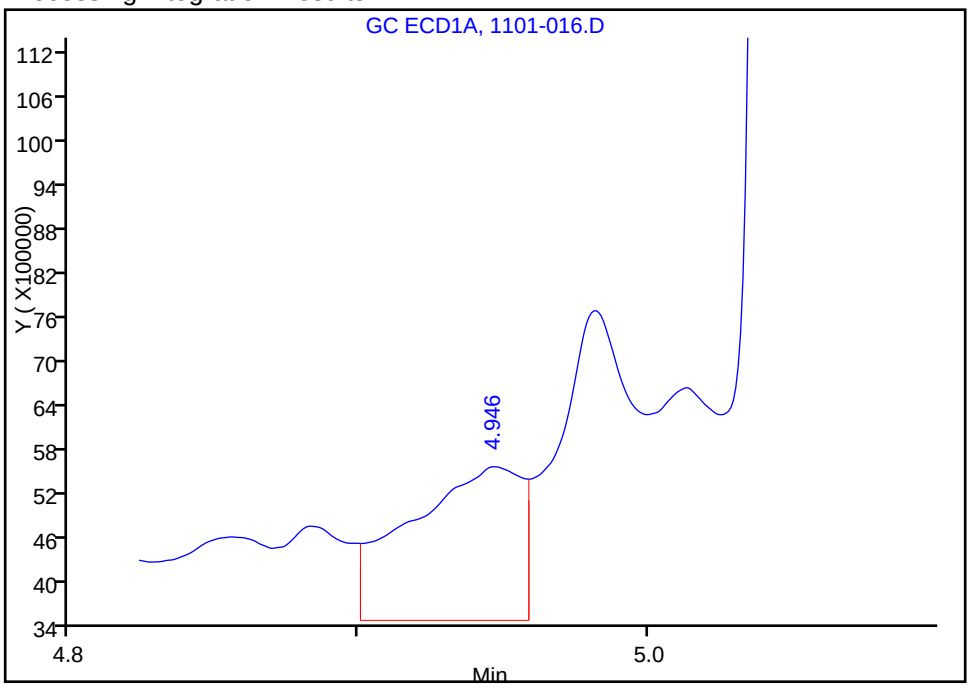
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

19 Heptachlor, CAS: 76-44-8

Signal: 1

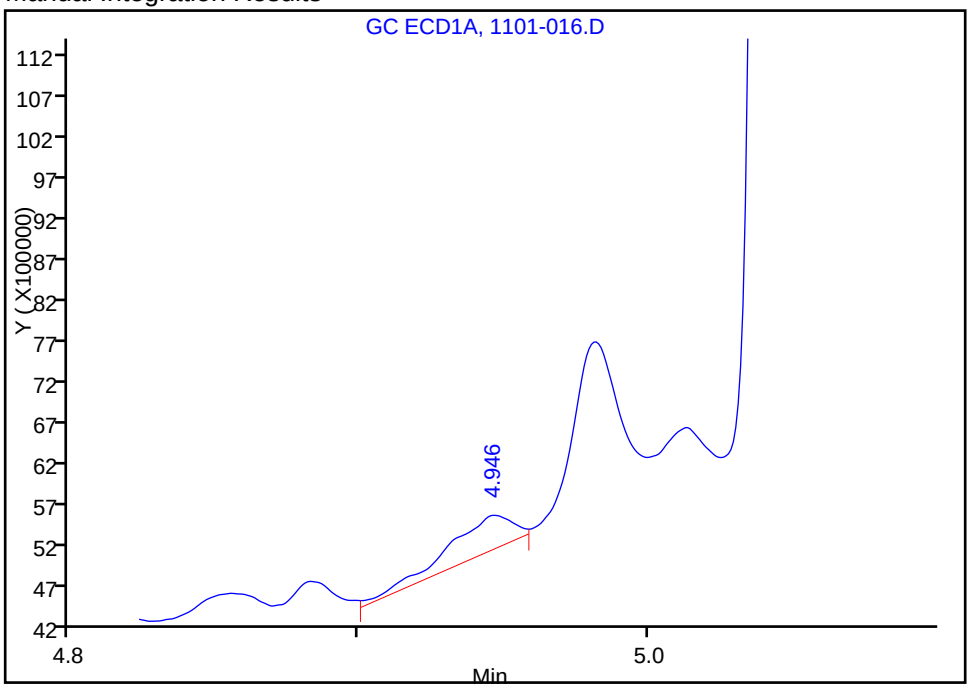
Processing Integration Results

RT: 4.95
Area: 5611440
Amount: 1.813322
Amount Units: ug/l



Manual Integration Results

RT: 4.95
Area: 709484
Amount: 0.229268
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Client Sample ID: JBER-WW001 Lab Sample ID: 320-22881-1

Matrix: Water Lab File ID: 1101-016.D

Analysis Method: 8081B Date Collected: 10/20/2016 10:40

Extraction Method: 3510C Date Extracted: 10/24/2016 10:43

Sample wt/vol: 1057.5(mL) Date Analyzed: 11/01/2016 14:49

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: STX-CLP II ID: 0.32(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 135416 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	88		44-124
2051-24-3	DCB Decachlorobiphenyl	43		12-131

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D
Lims ID: 320-22881-G-1-A
Client ID: JBER-WW001
Sample Type: Client
Inject. Date: 01-Nov-2016 14:49:32 ALS Bottle#: 16 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 22881-1
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 17:04:32 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 17:04:32

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene						
1	3.039	3.036	0.004	523921212	200.0	
2	2.802	2.800	0.002	940588923	200.0	
$ 3 Tetrachloro-m-xylene						
1	3.860	3.856	0.004	67067057	28.1	
2	3.728	3.726	0.002	145444920	35.2	
					RPD = 22.44	
33 Diallate						M
1	4.200	4.215	-0.015	38744307	495.7	
1	4.339	4.337	0.002	2740693	219.8	
		Average of Peak Amounts =			357.7	
2	4.102	4.087	0.015	850122	6.81	M
2	4.166	4.175	-0.009	2522682	137.2	M
		Average of Peak Amounts =			72.0	
					RPD = 132.96	
11 alpha-BHC						M
1	4.339	4.341	-0.002	2740693	0.7802	
2	4.257	4.252	0.005	174183	0.0280	M
					RPD = 186.15	
LOD = 0.0400						
2 gamma-BHC (Lindane)						M
1	4.579	4.590	-0.011	146968	0.0442	M
2	4.509	4.524	-0.015	1571994	0.2692	M
					RPD = 143.53	
LOD = 0.0800						
6 beta-BHC						M
1	4.643	4.657	-0.014	1154380	0.8138	M
2	4.597	4.592	0.005	477170	0.1999	M
					RPD = 121.14	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
18 delta-BHC						M
1	4.778	4.789	-0.011	604301	0.1944	M
2	4.790	4.799	-0.009	3304559	0.5759	M
					RPD = 99.06	
LOD = 0.2000						
19 Heptachlor						M
1	4.946	4.945	0.001	709484	0.2293	M
2	4.820	4.834	-0.014	1131146	0.2132	M
					RPD = 7.26	
31 2,4'-DDD						
1	6.113	6.117	-0.004	37620	0.0220	
2	6.120	6.130	-0.010	182343	0.0640	
					RPD = 97.69	
LOD = 0.0450						
12 4,4'-DDD						M
1	6.606	6.599	0.007	2243160	0.9763	
2	6.563	6.559	0.004	4763580	1.21	M
					RPD = 21.18	
14 4,4'-DDT						M
1	6.986	6.978	0.008	371894	0.1990	
2	6.998	6.992	0.006	1668386	0.4815	M
					RPD = 83.03	
30 Endosulfan sulfate						
1	7.874	7.879	-0.005	177783	0.0779	
2	7.519	7.526	-0.007	220921	0.0567	
					RPD = 31.42	
LOD = 0.2000						
1 Endrin ketone						
1	8.158	8.169	-0.011	3980679	1.61	
2	8.105	8.112	-0.007	926384	0.2209	
					RPD = 151.78	
$ 23 DCB Decachlorobiphenyl						
1	9.214	9.206	0.008	28294219	14.4	
2	9.405	9.400	0.005	55774951	17.1	
					RPD = 17.40	

QC Flag Legend

Processing Flags
7 - Failed Limit of Detection
Review Flags
M - Manually Integrated

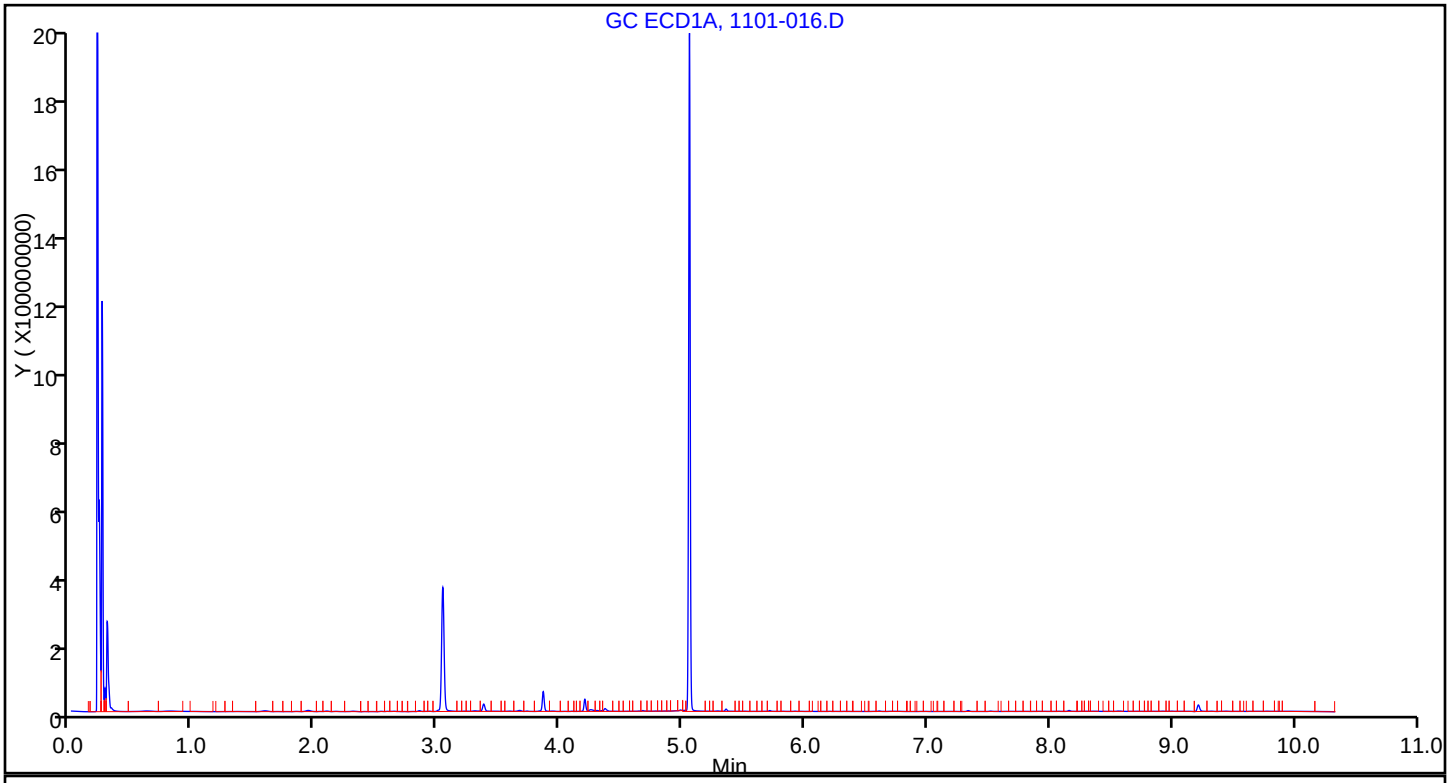
Reagents:

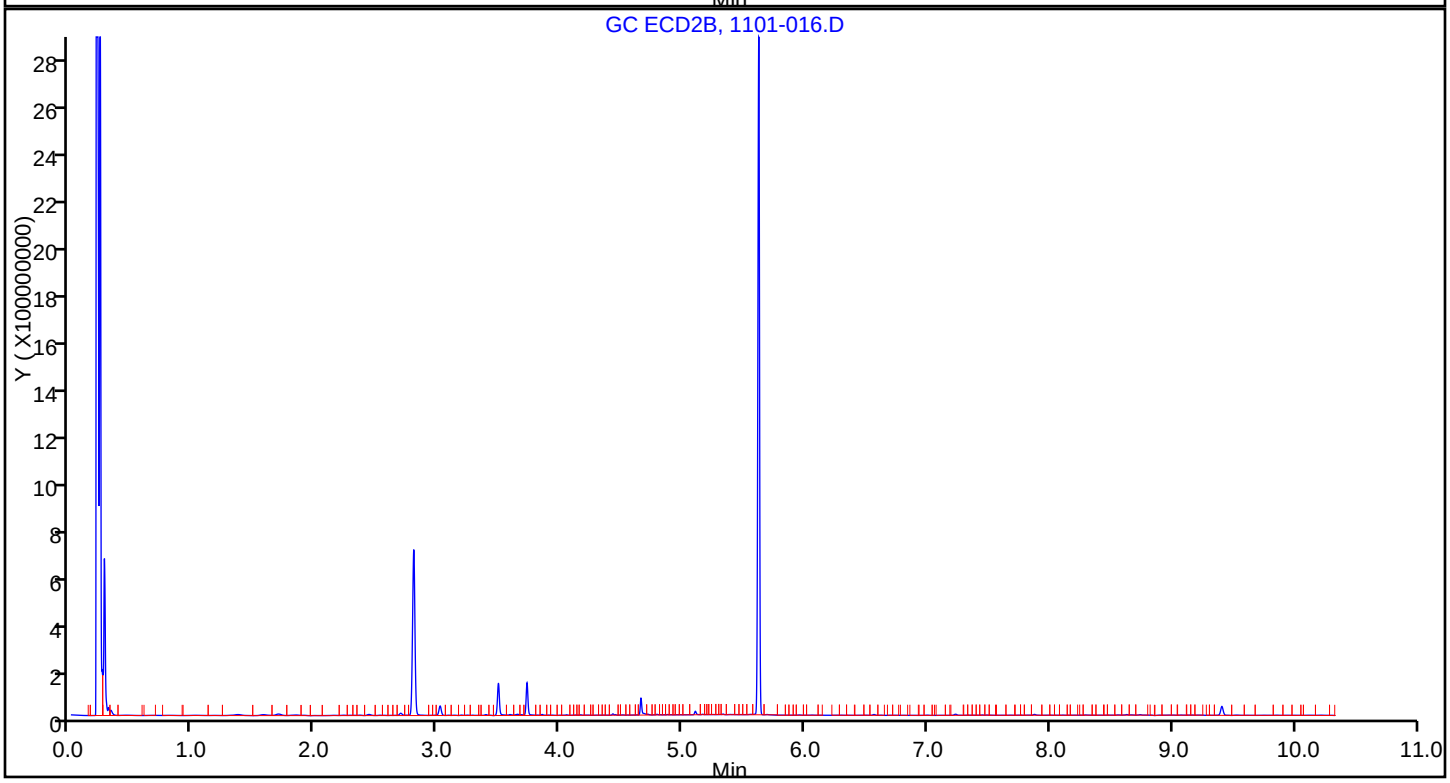
GCPESTISIM_00005 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 01-Nov-2016 17:04:35 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Recovery Report

Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Lims ID:	320-22881-G-1-A				
Client ID:	JBER-WW001				
Sample Type:	Client				
Inject. Date:	01-Nov-2016 14:49:32	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	22881-1				
Operator ID:	SMH	Instrument ID:	GC75		
Method:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m				
Limit Group:	GC 8081B_DOD ICAL				
Last Update:	01-Nov-2016 17:04:32	Calib Date:	29-Oct-2016 15:50:50		
Integrator:	Falcon				
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D				
Column 1 :			Det: GC ECD1A		
Column 2 :			Det: GC ECD2B		
Process Host:	XAWRK022				
First Level Reviewer: haques		Date:	01-Nov-2016 17:04:32		

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	28.1	70.23
$ 23 DCB Decachlorobiphenyl	40.0	14.4	35.98

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	35.2	87.98
$ 23 DCB Decachlorobiphenyl	40.0	17.1	42.84

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

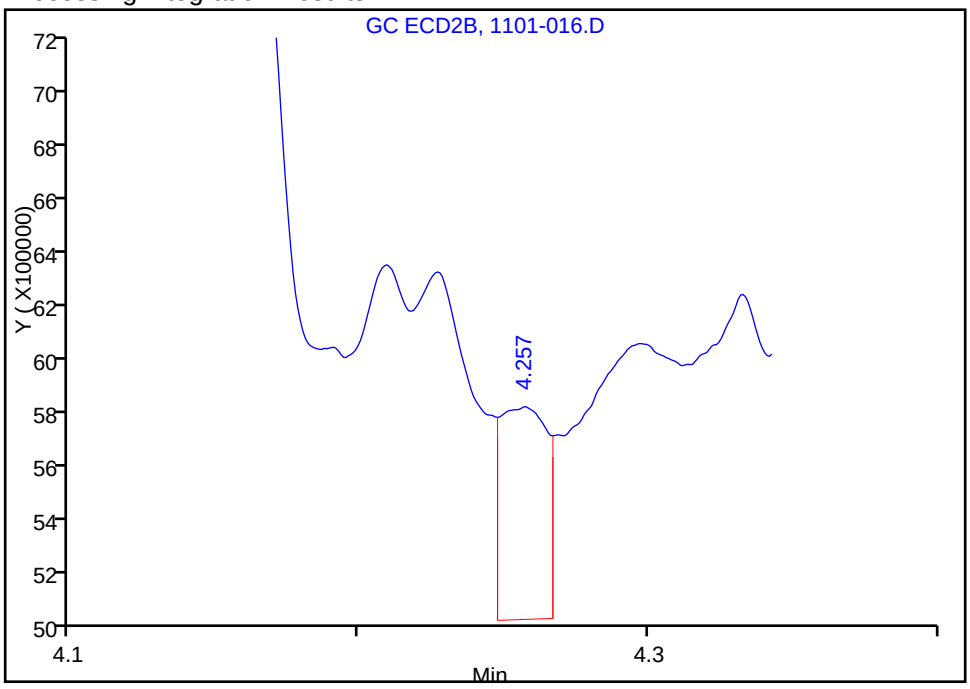
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

11 alpha-BHC, CAS: 319-84-6

Signal: 2

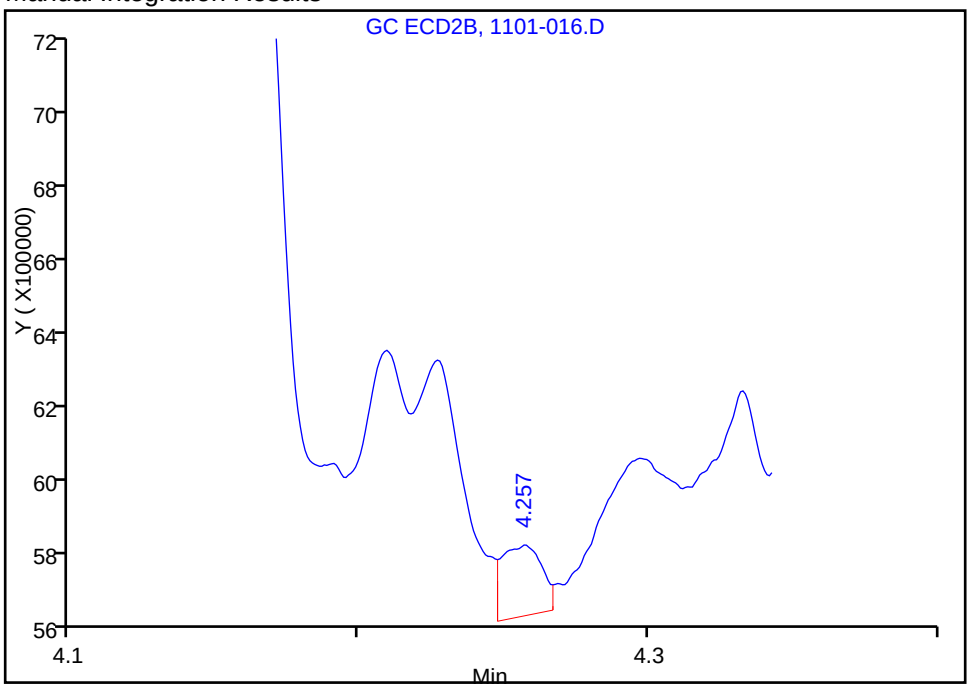
Processing Integration Results

RT: 4.26
Area: 830843
Amount: 0.133477
Amount Units: ug/l



Manual Integration Results

RT: 4.26
Area: 174183
Amount: 0.027983
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

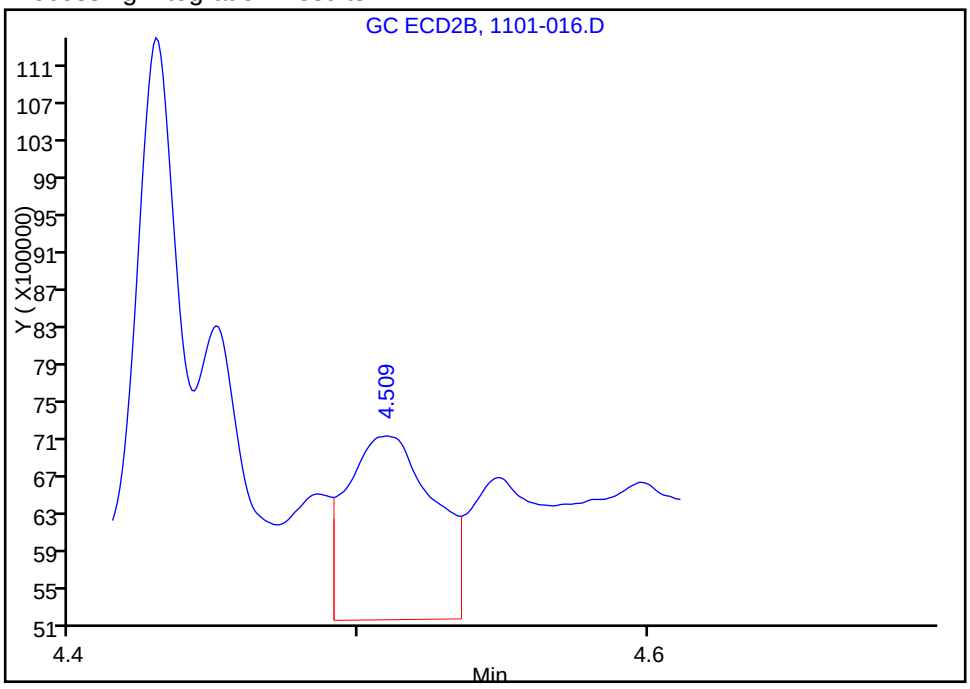
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

2 gamma-BHC (Lindane), CAS: 58-89-9

Signal: 2

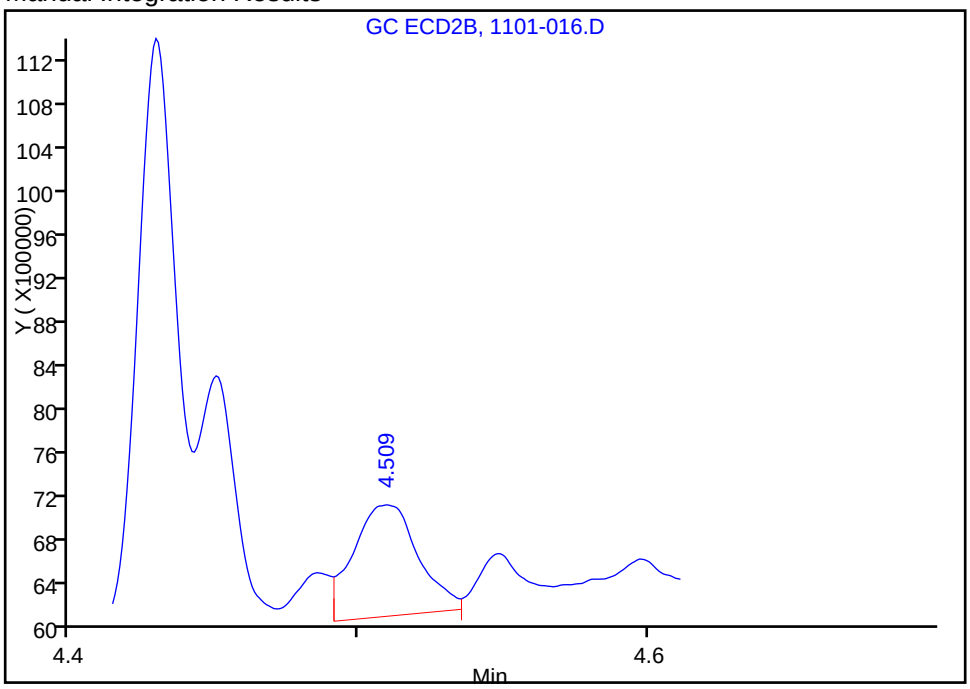
Processing Integration Results

RT: 4.51
Area: 4070541
Amount: 0.697091
Amount Units: ug/l



Manual Integration Results

RT: 4.51
Area: 1571994
Amount: 0.269208
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

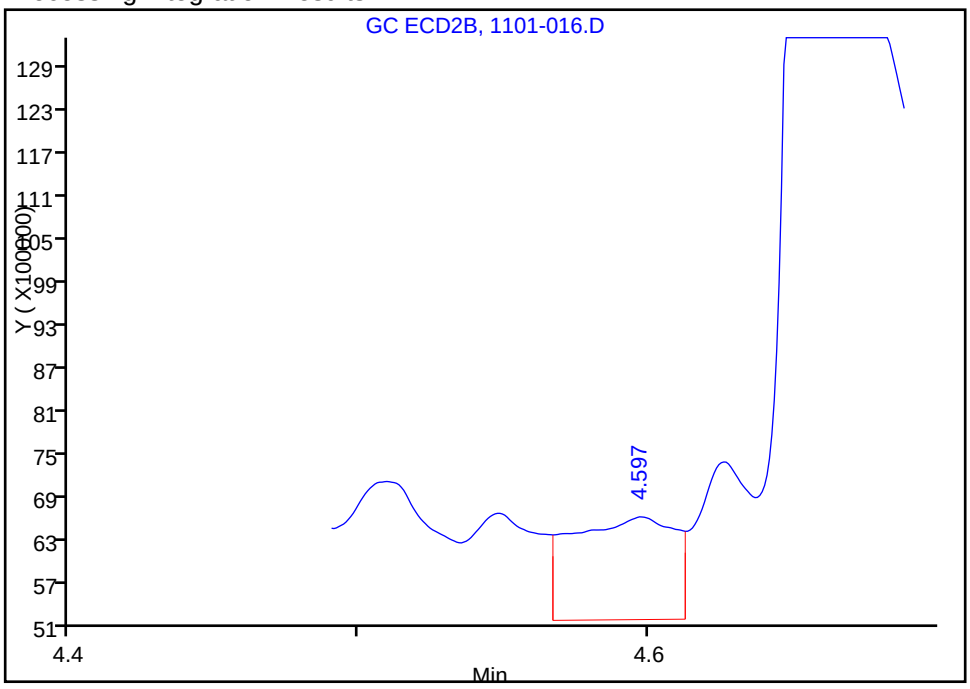
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

6 beta-BHC, CAS: 319-85-7

Signal: 2

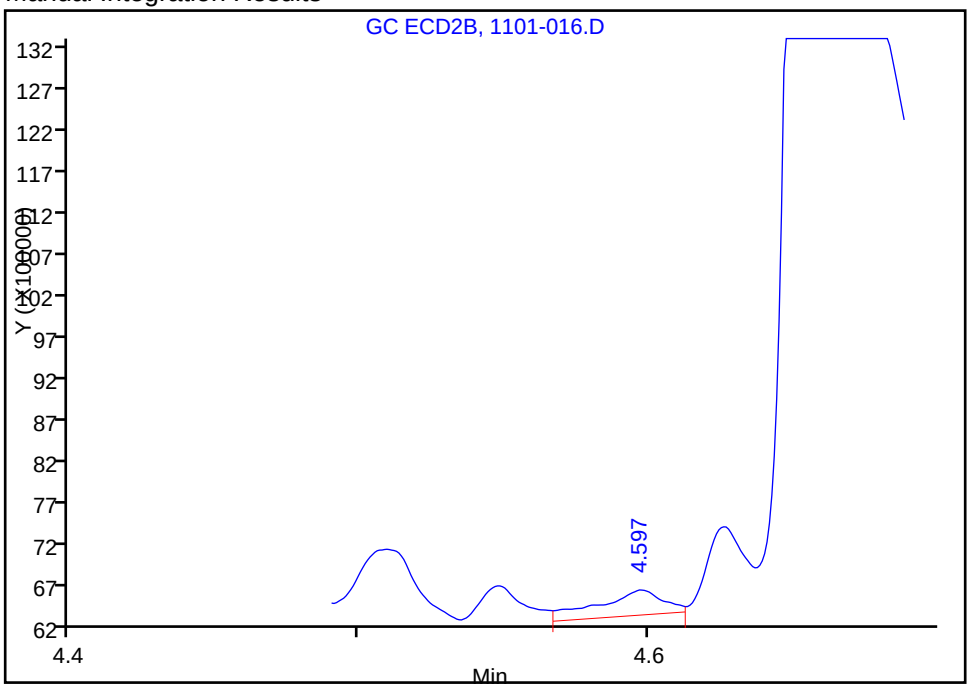
Processing Integration Results

RT: 4.60
Area: 3508349
Amount: 1.469400
Amount Units: ug/l



Manual Integration Results

RT: 4.60
Area: 477170
Amount: 0.199853
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

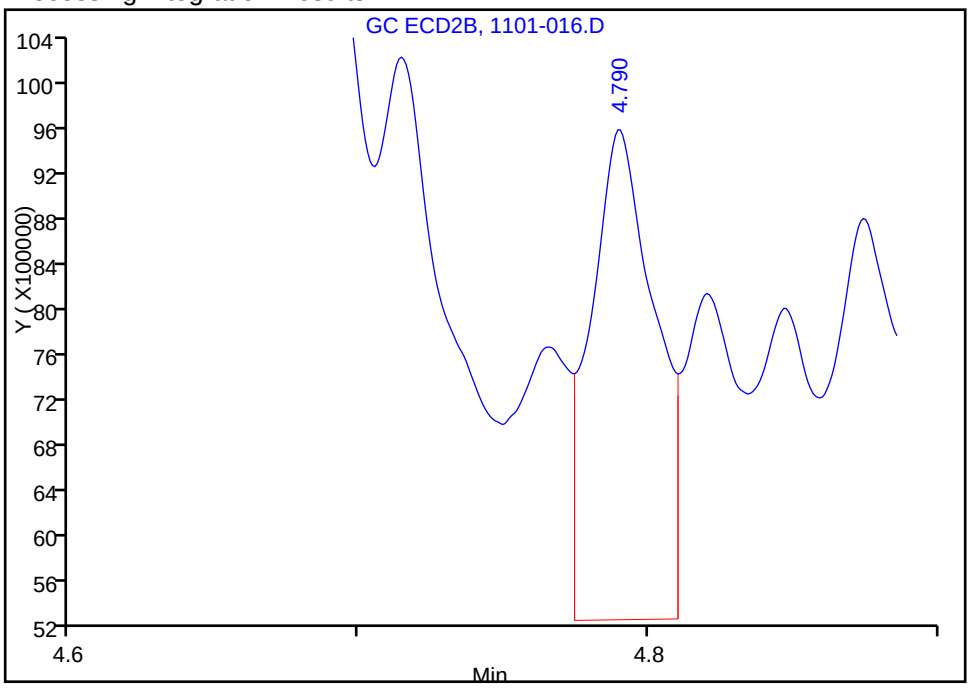
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

18 delta-BHC, CAS: 319-86-8

Signal: 2

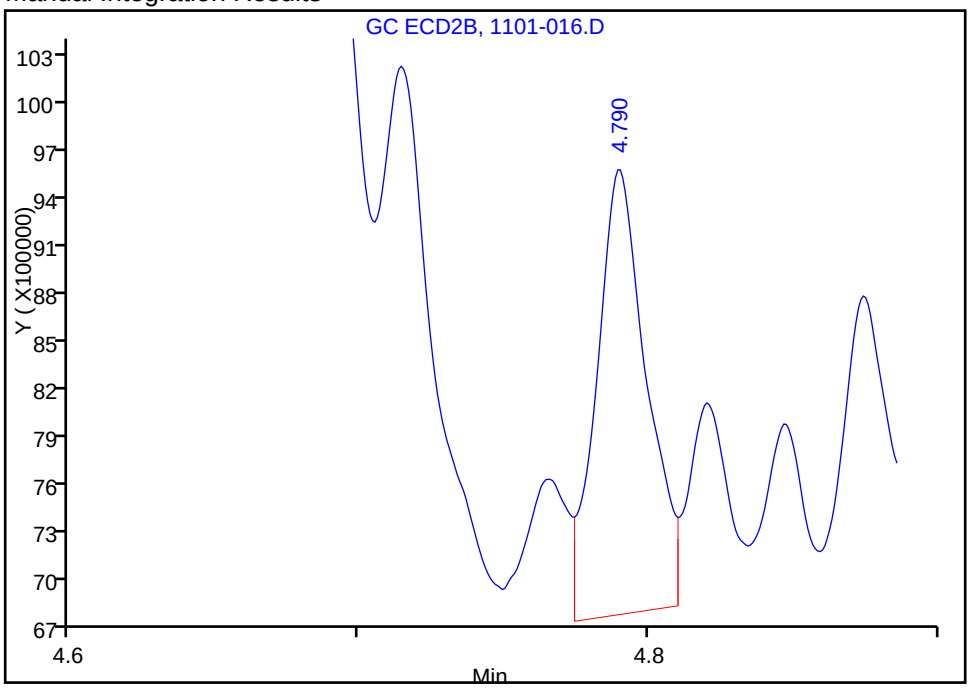
Processing Integration Results

RT: 4.79
Area: 6675467
Amount: 1.163383
Amount Units: ug/l



Manual Integration Results

RT: 4.79
Area: 3304559
Amount: 0.575910
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

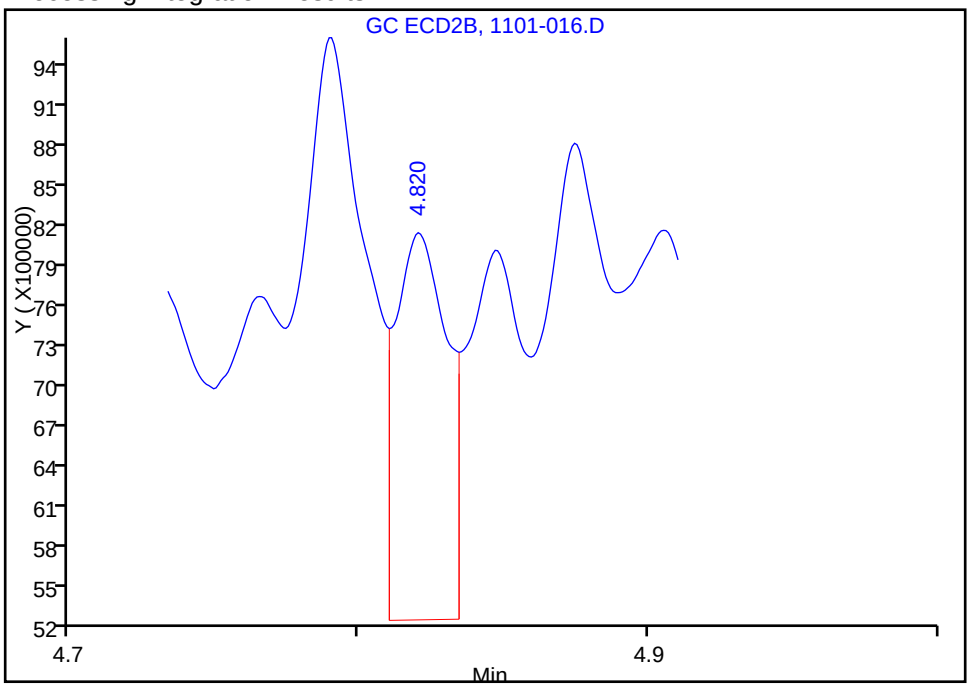
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

19 Heptachlor, CAS: 76-44-8

Signal: 2

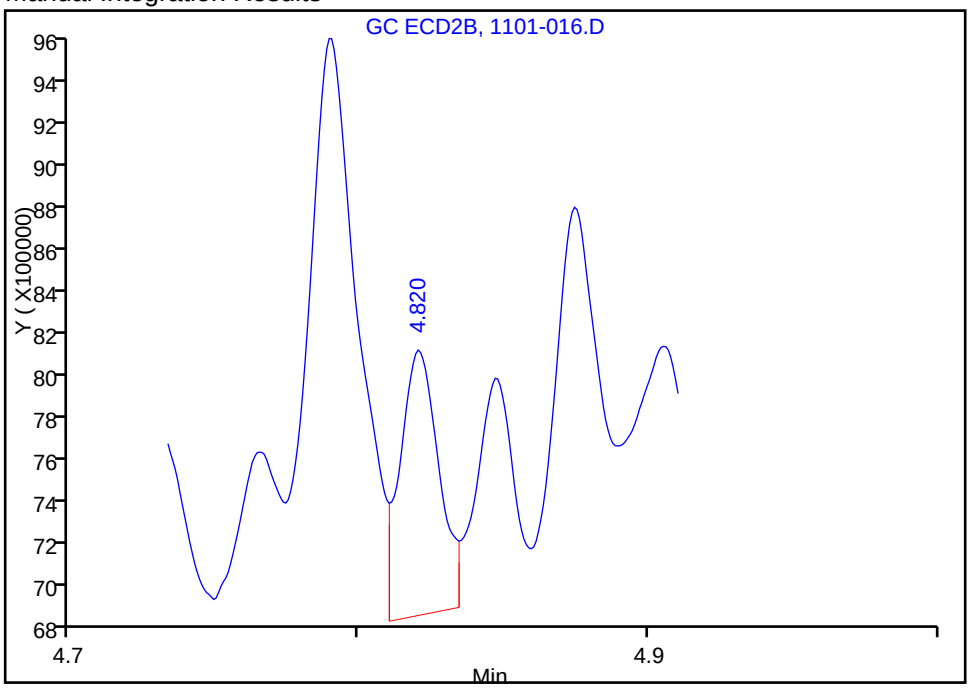
Processing Integration Results

RT: 4.82
Area: 3504414
Amount: 0.660535
Amount Units: ug/l



Manual Integration Results

RT: 4.82
Area: 1131146
Amount: 0.213206
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

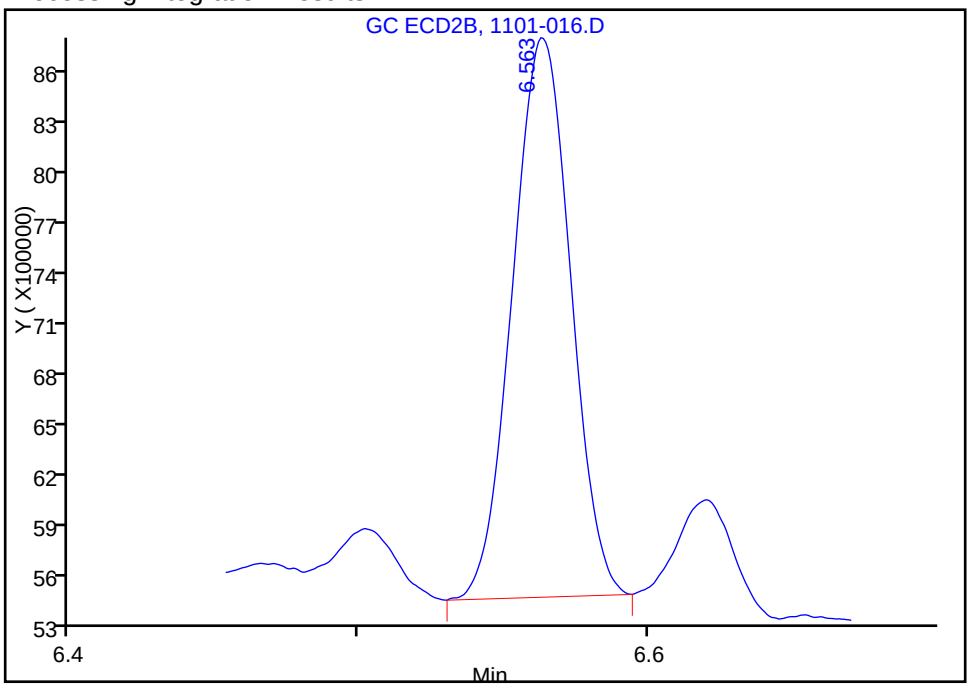
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

12 4,4'-DDD, CAS: 72-54-8

Signal: 2

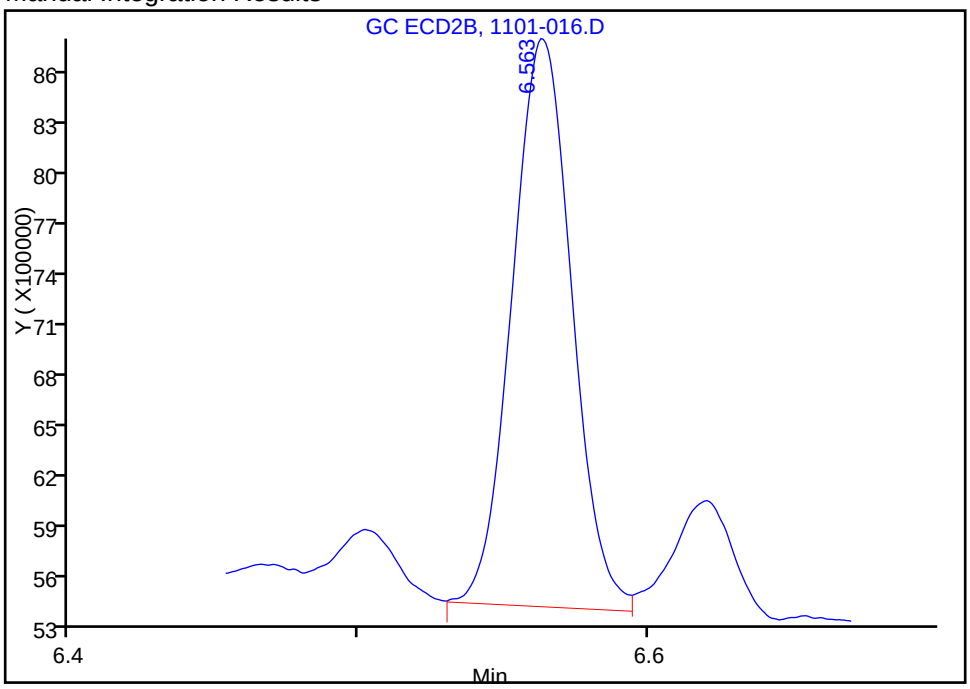
Processing Integration Results

RT: 6.56
Area: 4574364
Amount: 1.159621
Amount Units: ug/l



Manual Integration Results

RT: 6.56
Area: 4763580
Amount: 1.207588
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

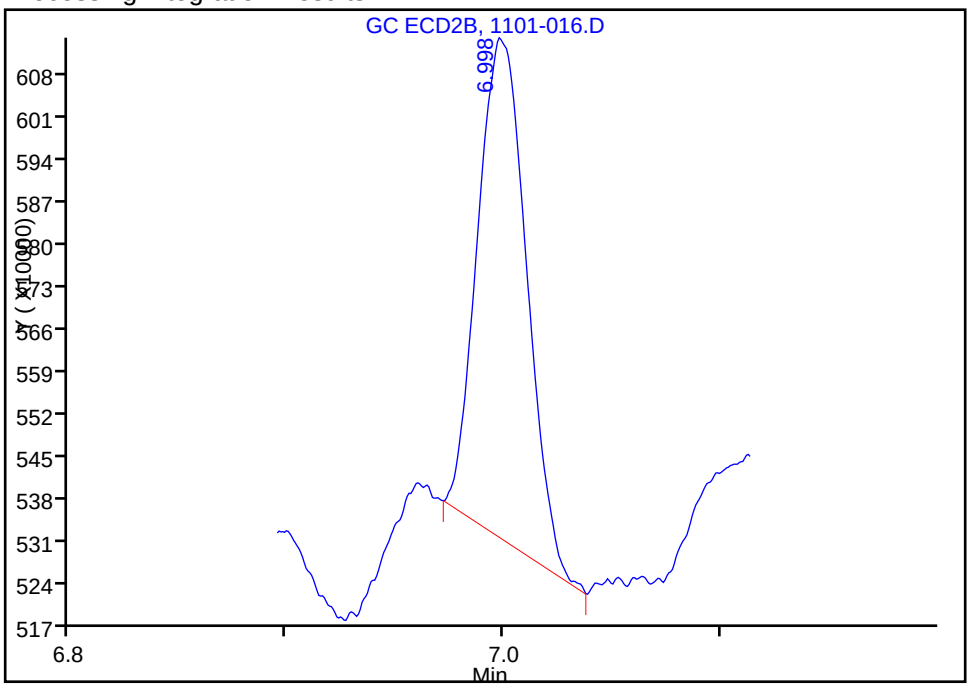
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-016.D				
Injection Date:	01-Nov-2016 14:49:32	Instrument ID:	GC75		
Lims ID:	320-22881-G-1-A	Lab Sample ID:	320-22881-1		
Client ID:	JBER-WW001				
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

14 4,4'-DDT, CAS: 50-29-3

Signal: 2

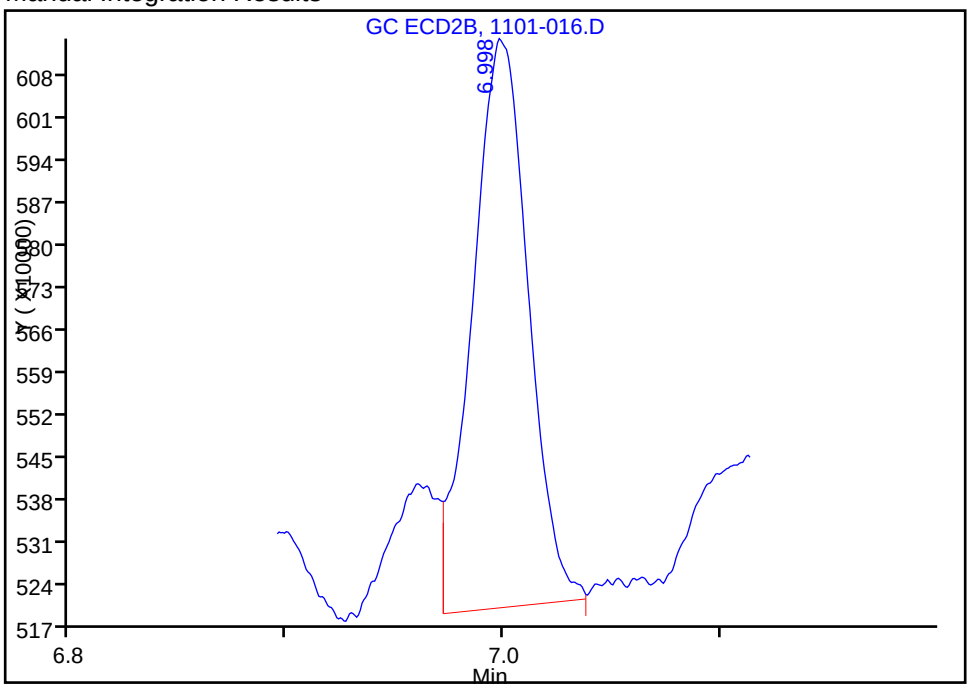
Processing Integration Results

RT: 7.00
Area: 1293021
Amount: 0.373147
Amount Units: ug/l



Manual Integration Results

RT: 7.00
Area: 1668386
Amount: 0.481472
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 17:04:32
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 134186

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP I ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/24/2016 16:32 Calibration End Date: 10/24/2016 17:50 Calibration ID: 26148

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 320-134186/12	1024-012.D
Level 2	STD002 320-134186/13	1024-013.D
Level 3	STD003 320-134186/14	1024-014.D
Level 4	STD004 320-134186/15	1024-015.D
Level 5	STD005 320-134186/16	1024-016.D
Level 6	STD006 320-134186/17	1024-017.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Toxaphene Peak 1	0.0486 0.0446	0.0458	0.0456	0.0447	0.0438	Ave		0.0455				3.7		20.0			
Toxaphene Peak 2	0.0268 0.0271	0.0272	0.0263	0.0264	0.0267	Ave		0.0267				1.3		20.0			
Toxaphene Peak 3	0.0285 0.0293	0.0289	0.0288	0.0287	0.0280	Ave		0.0287				1.5		20.0			
Toxaphene Peak 4	0.0351 0.0353	0.0342	0.0346	0.0344	0.0342	Ave		0.0346				1.3		20.0			
Toxaphene Peak 5	0.0305 0.0305	0.0299	0.0304	0.0299	0.0296	Ave		0.0301				1.2		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 134186

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP I ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/24/2016 16:32 Calibration End Date: 10/24/2016 17:50 Calibration ID: 26148

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 320-134186/12	1024-012.D
Level 2	STD002 320-134186/13	1024-013.D
Level 3	STD003 320-134186/14	1024-014.D
Level 4	STD004 320-134186/15	1024-015.D
Level 5	STD005 320-134186/16	1024-016.D
Level 6	STD006 320-134186/17	1024-017.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Toxaphene Peak 1	BNB	Ave	5633110 103480745	10281476	15579789	30804832	52443753	50.0 1000	100	150	300	500
Toxaphene Peak 2	BNB	Ave	3101722 62802497	6091509	8972578	18191867	31965867	50.0 1000	100	150	300	500
Toxaphene Peak 3	BNB	Ave	3304411 68078435	6490378	9822035	19747507	33562529	50.0 1000	100	150	300	500
Toxaphene Peak 4	BNB	Ave	4062837 81887633	7683214	11832421	23665349	40926520	50.0 1000	100	150	300	500
Toxaphene Peak 5	BNB	Ave	3528177 70909684	6701953	10374760	20594223	35522184	50.0 1000	100	150	300	500

Curve Type Legend:
Ave = Average ISTD

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-012.D
Lims ID: STD001 TOX L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 24-Oct-2016 16:32:02 ALS Bottle#: 12 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L1
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:56 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:16:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.035	0.000	463213167	200.0	200.0	
2	2.809	2.809	0.000	1065701559	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	5633110	50.0	53.4	M
1	7.274	7.274	0.000	3101722	50.0	50.1	M
1	7.540	7.540	0.000	3304411	50.0	49.7	M
1	7.670	7.670	0.000	4062837	50.0	50.7	M
1	7.780	7.780	0.000	3528177	50.0	50.5	M
		Average of Peak Amounts =				50.9	
2	6.677	6.677	0.000	8227772	50.0	54.4	M
2	6.810	6.810	0.000	12061030	50.0	52.4	M
2	7.187	7.187	0.000	8564166	50.0	52.0	M
2	7.810	7.810	0.000	6815505	50.0	51.0	M
2	7.874	7.874	0.000	4093569	50.0	53.3	M
		Average of Peak Amounts =				52.6	
						RPD = 3.33	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

GCTOXL1_00014 Amount Added: 1.00 Units: mL

Report Date: 25-Oct-2016 14:36:57 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-012.D

Injection Date: 24-Oct-2016 16:32:02 Instrument ID: GC75

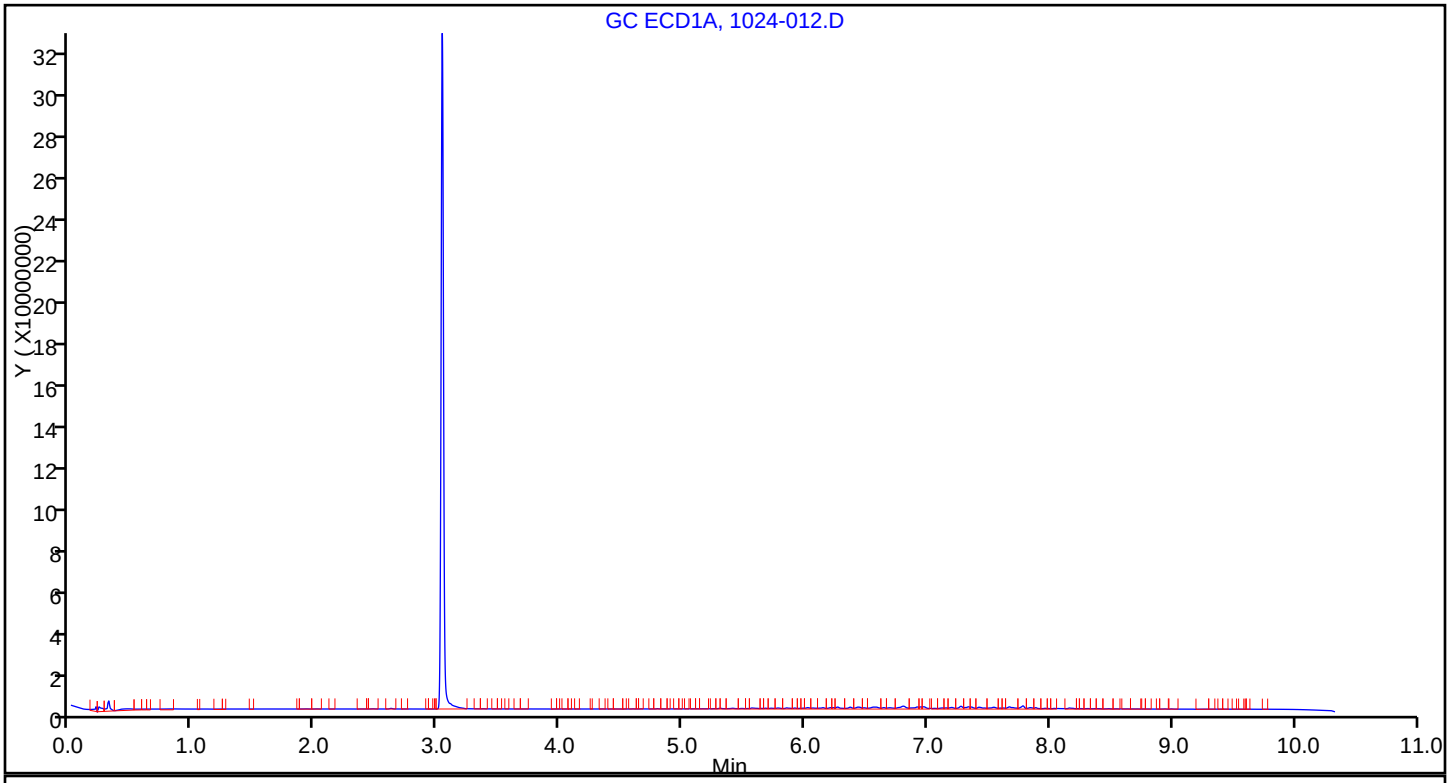
Lims ID: STD001 TOX L1

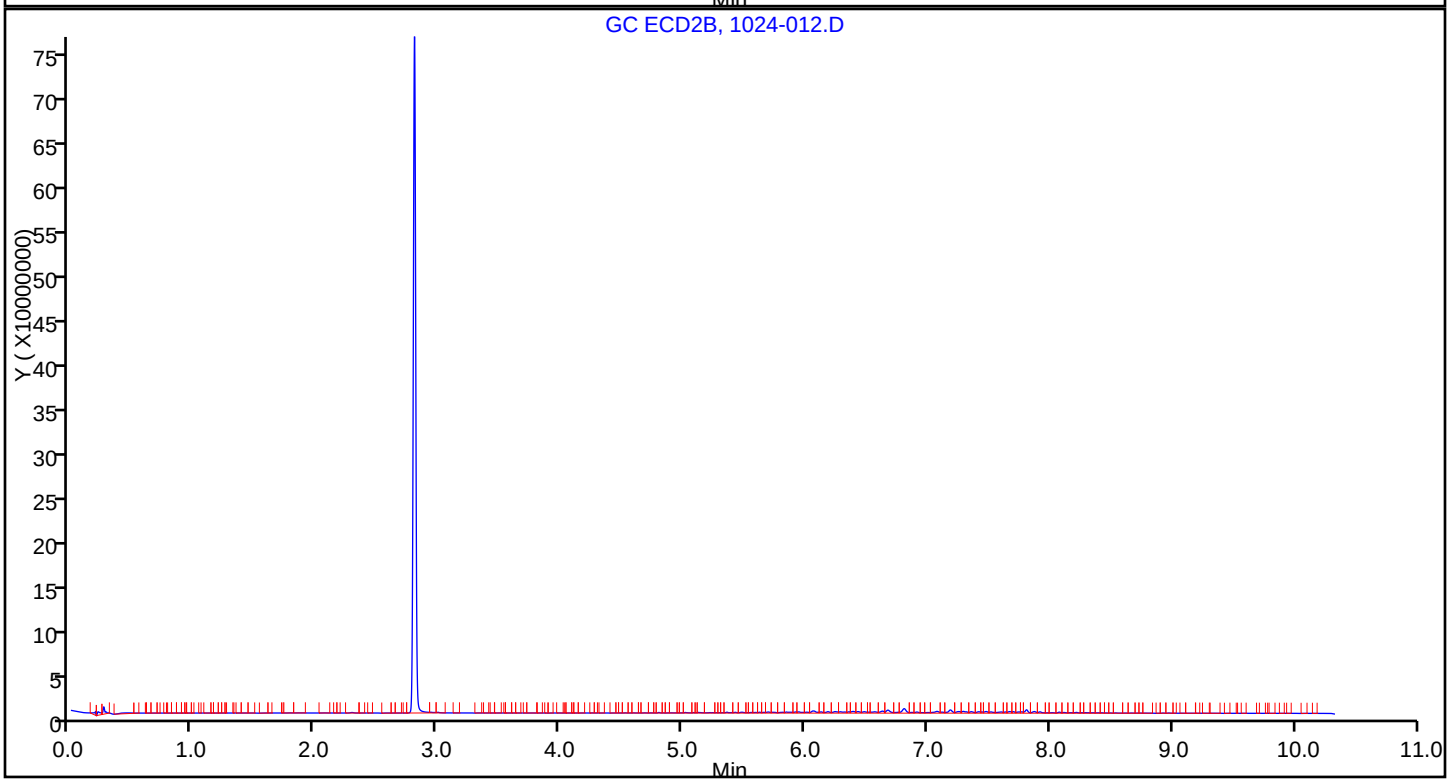
Client ID:

Operator ID: SMH ALS Bottle#: 12 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-013.D
Lims ID: STD002 TOX L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Oct-2016 16:47:44 ALS Bottle#: 13 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L2
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:51 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:20:23

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.046	-0.011	448668678	200.0	200.0	
2	2.808	2.810	-0.002	1069955009	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	10281476	100.0	100.7	M
1	7.274	7.274	0.000	6091509	100.0	101.6	M
1	7.541	7.540	0.001	6490378	100.0	100.8	M
1	7.671	7.670	0.001	7683214	100.0	98.9	M
1	7.779	7.780	-0.001	6701953	100.0	99.1	M
		Average of Peak Amounts =				100.2	
2	6.677	6.677	0.000	15517988	100.0	102.2	M
2	6.809	6.810	-0.001	23183845	100.0	100.3	M
2	7.188	7.187	0.001	16496410	100.0	99.8	M
2	7.809	7.810	-0.001	13500167	100.0	100.6	M
2	7.874	7.874	0.000	8278480	100.0	107.3	M
		Average of Peak Amounts =				102.0	
						RPD = 1.80	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

GCTOXL2_00012 Amount Added: 1.00 Units: mL

Report Date: 25-Oct-2016 14:36:52 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-013.D

Injection Date: 24-Oct-2016 16:47:44 Instrument ID: GC75

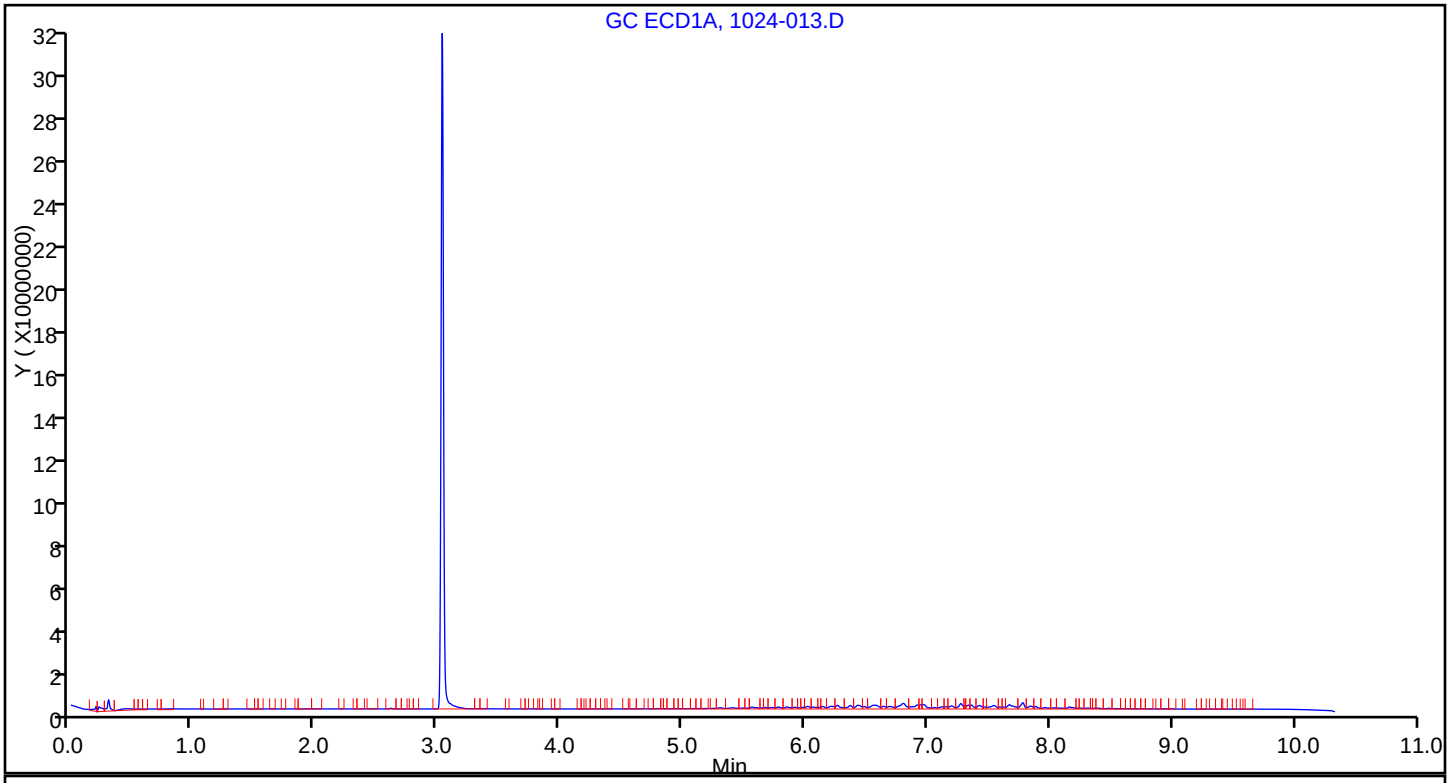
Lims ID: STD002 TOX L2

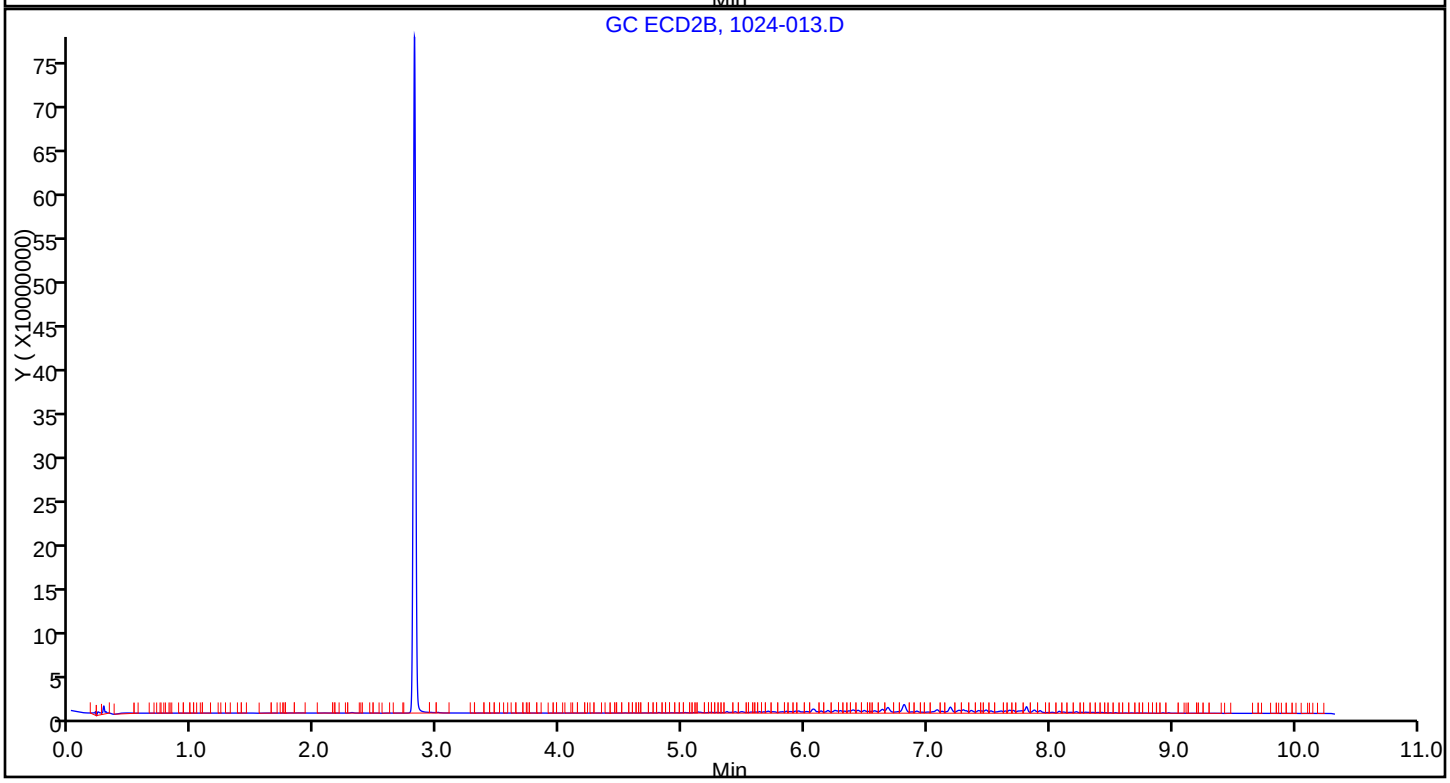
Client ID:

Operator ID: SMH ALS Bottle#: 13 Worklist Smp#: 13

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-014.D
Lims ID: STD003 TOX L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 24-Oct-2016 17:03:23 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L3
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:47 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:20:58

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.046	-0.011	455454355	200.0	200.0	
2	2.808	2.810	-0.002	1110270620	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	15579789	150.0	150.3	M
1	7.274	7.274	0.000	8972578	150.0	147.4	M
1	7.543	7.540	0.003	9822035	150.0	150.2	M
1	7.672	7.670	0.002	11832421	150.0	150.0	M
1	7.781	7.780	0.001	10374760	150.0	151.2	M
		Average of Peak Amounts =				149.8	
2	6.677	6.677	0.000	23181888	150.0	147.1	M
2	6.809	6.810	-0.001	35201128	150.0	146.7	M
2	7.188	7.187	0.001	25426073	150.0	148.2	M
2	7.810	7.810	0.000	20184175	150.0	144.9	M
2	7.873	7.874	-0.001	11544592	150.0	144.2	M
		Average of Peak Amounts =				146.2	
						RPD = 2.42	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

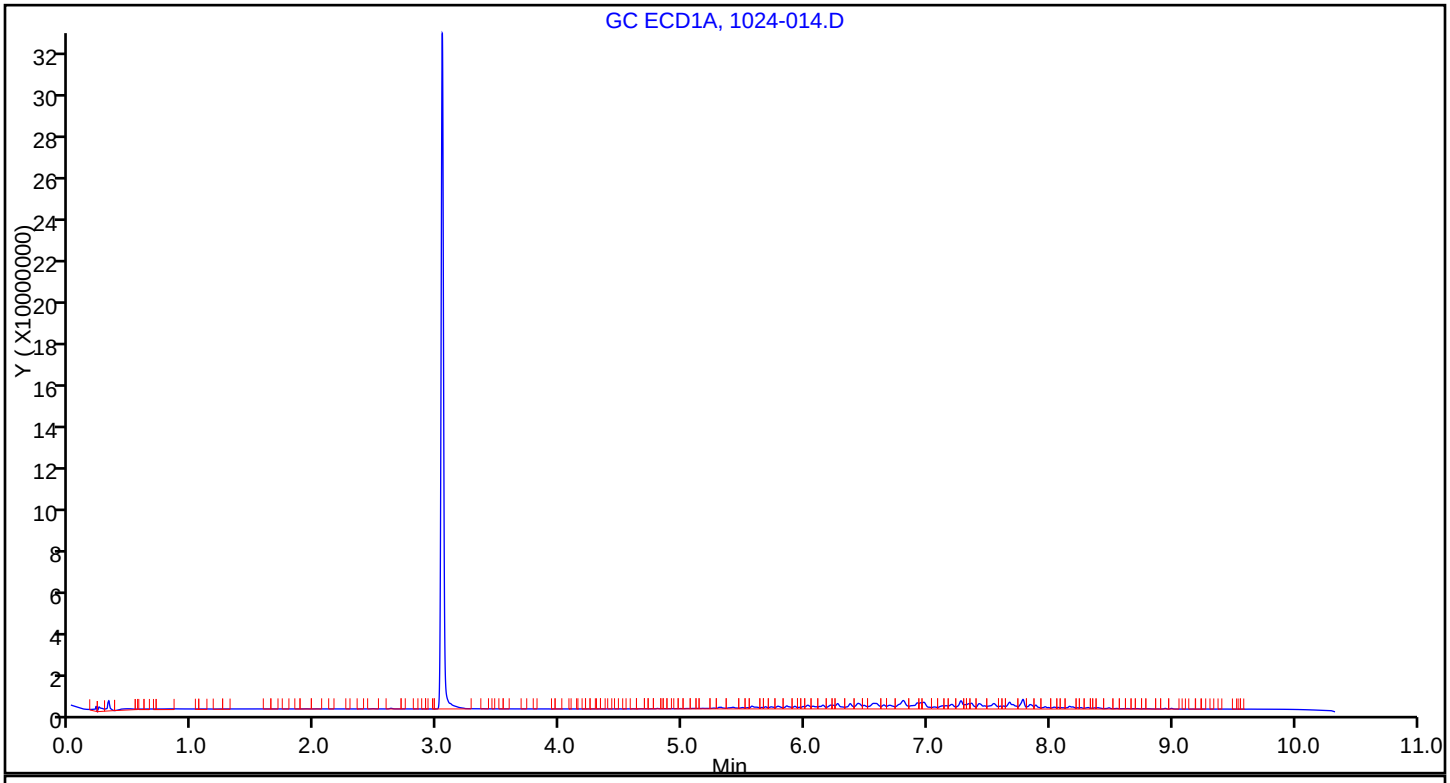
GCTOXL3_00012 Amount Added: 1.00 Units: mL

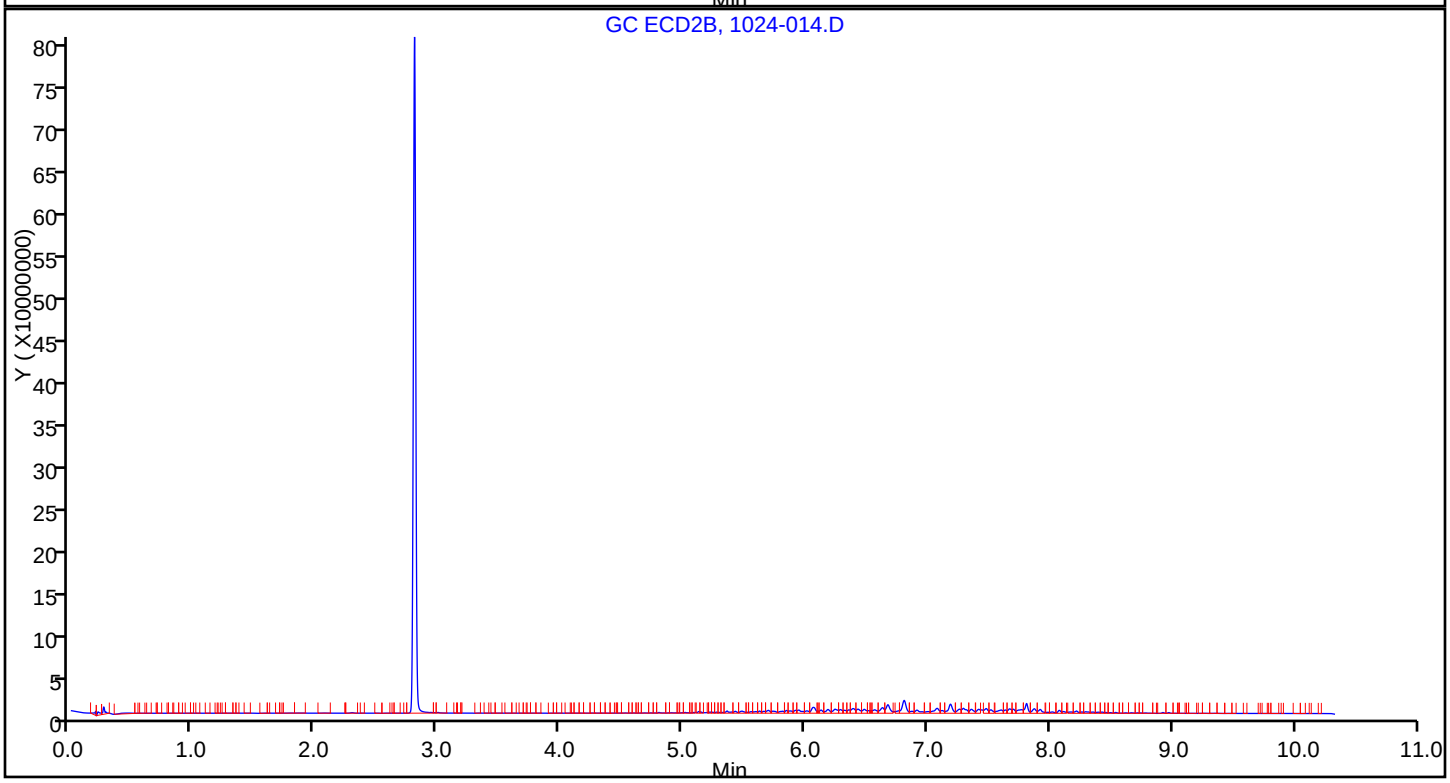
Report Date: 25-Oct-2016 14:36:48 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-014.D

Injection Date:	24-Oct-2016 17:03:23	Instrument ID:	GC75		
Lims ID:	STD003 TOX L3				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	14	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-015.D
Lims ID: STD004 TOX L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 24-Oct-2016 17:19:01 ALS Bottle#: 15 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L4
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:39 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:21:42

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.046	-0.011	458989383	200.0	200.0	
2	2.809	2.810	-0.001	1124653870	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	30804832	300.0	294.8	M
1	7.272	7.274	-0.002	18191867	300.0	296.6	M
1	7.541	7.540	0.001	19747507	300.0	299.8	M
1	7.670	7.670	0.000	23665349	300.0	297.8	M
1	7.781	7.780	0.001	20594223	300.0	297.8	M
		Average of Peak Amounts =				297.3	
2	6.677	6.677	0.000	46645728	300.0	292.3	M
2	6.810	6.810	0.000	72305750	300.0	297.6	M
2	7.187	7.187	0.000	51291399	300.0	295.1	M
2	7.810	7.810	0.000	42568417	300.0	301.8	M
2	7.873	7.874	-0.001	23742978	300.0	292.8	M
		Average of Peak Amounts =				295.9	
						RPD = 0.49	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

GCTOXL4_00012 Amount Added: 1.00 Units: mL

Report Date: 25-Oct-2016 14:36:41 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-015.D

Injection Date: 24-Oct-2016 17:19:01 Instrument ID: GC75

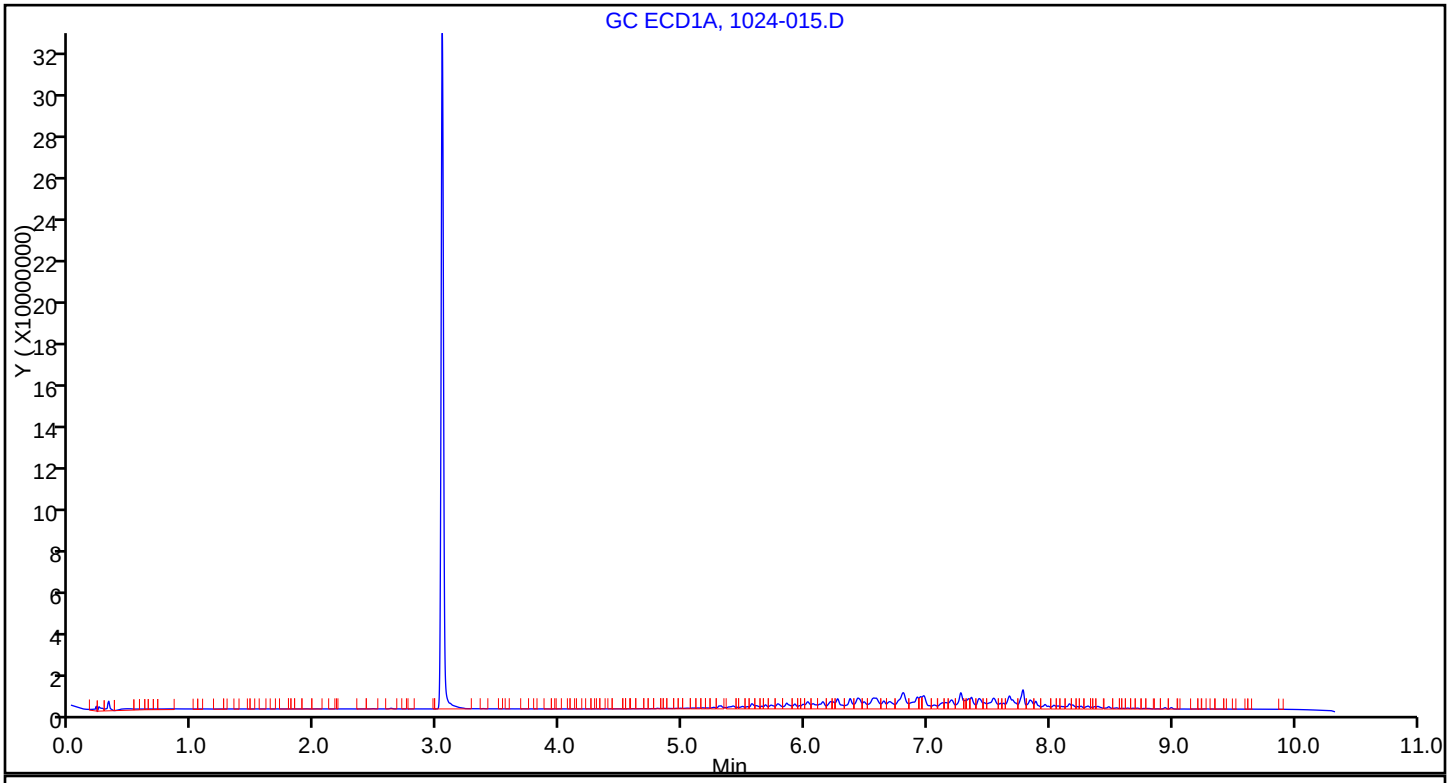
Lims ID: STD004 TOX L4

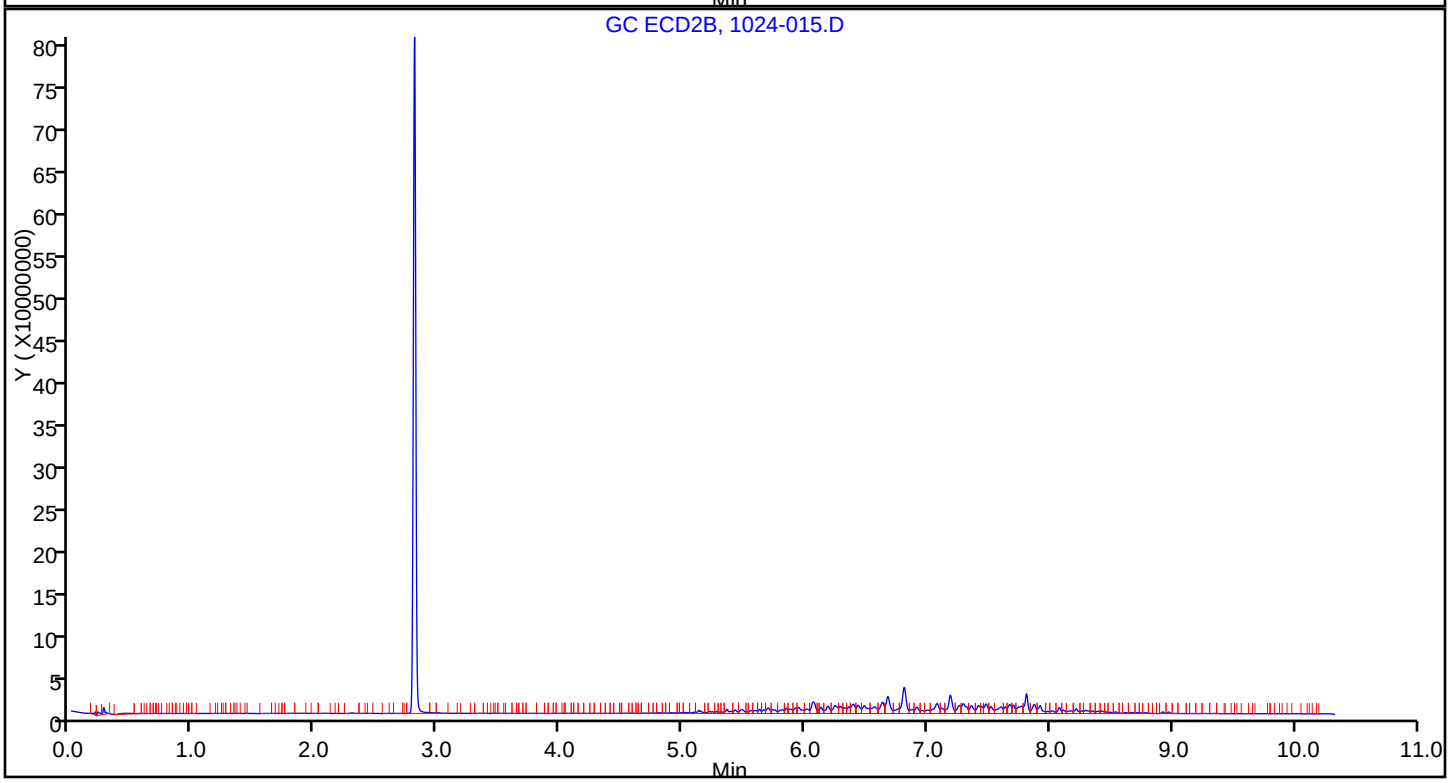
Client ID:

Operator ID: SMH ALS Bottle#: 15 Worklist Smp#: 15

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-016.D
Lims ID: STD005 TOX L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 24-Oct-2016 17:34:42 ALS Bottle#: 16 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:33 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:22:21

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.046	-0.011	479273363	200.0	200.0	
2	2.810	2.810	-0.001	1146521437	200.0	200.0	
32 Toxaphene							
1	6.804	6.802	0.002	52443753	500.0	480.7	
1	7.275	7.274	0.001	31965867	500.0	499.1	
1	7.542	7.540	0.002	33562529	500.0	487.9	
1	7.672	7.670	0.002	40926520	500.0	493.2	
1	7.780	7.780	0.000	35522184	500.0	491.9	
		Average of Peak Amounts =				490.6	
2	6.678	6.677	0.001	78378167	500.0	481.8	
2	6.810	6.810	0.000	121637484	500.0	491.0	
2	7.189	7.187	0.002	87138326	500.0	491.8	
2	7.810	7.810	0.000	71318833	500.0	495.9	
2	7.873	7.874	-0.001	39262544	500.0	475.0	
		Average of Peak Amounts =				487.1	
						RPD = 0.71	

Reagents:

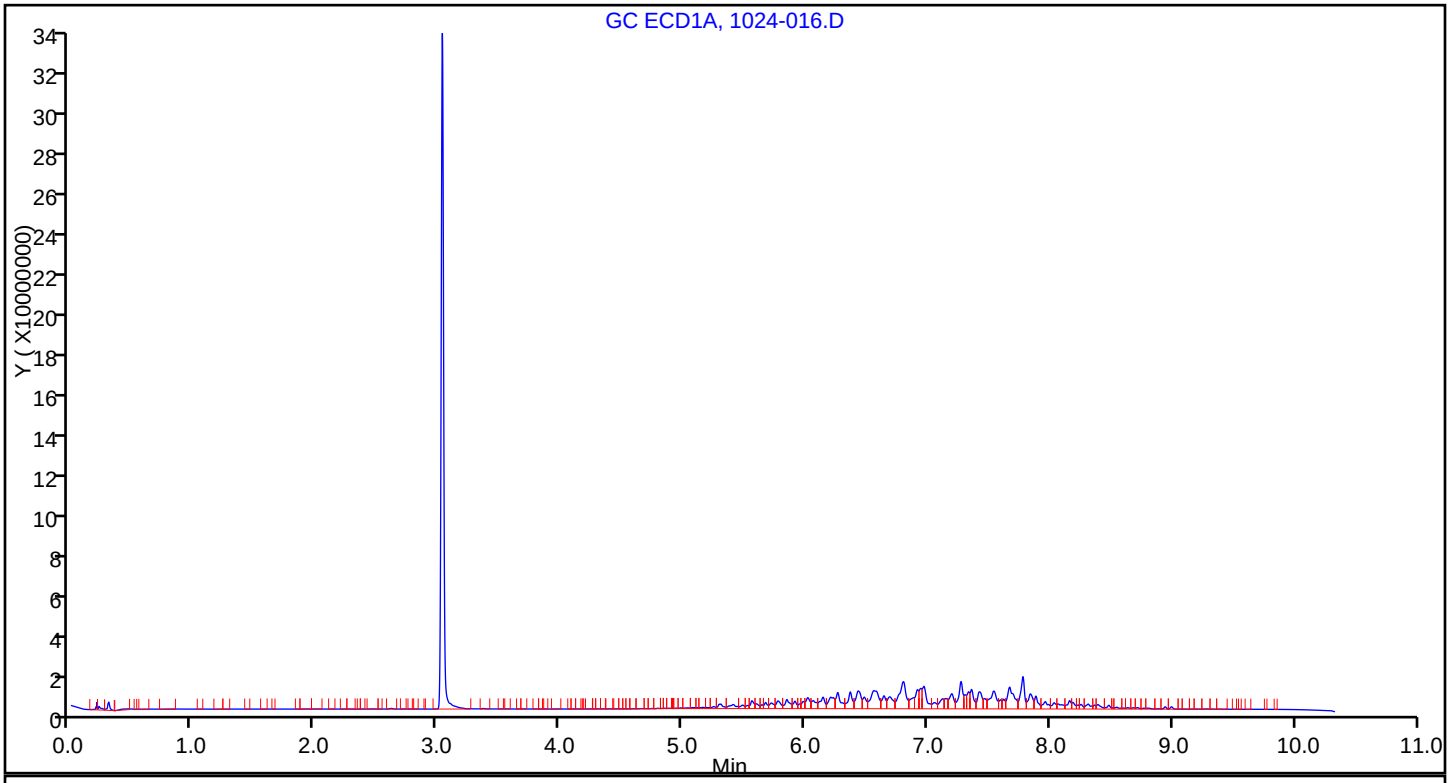
GCTOXL5_00012 Amount Added: 1.00 Units: mL

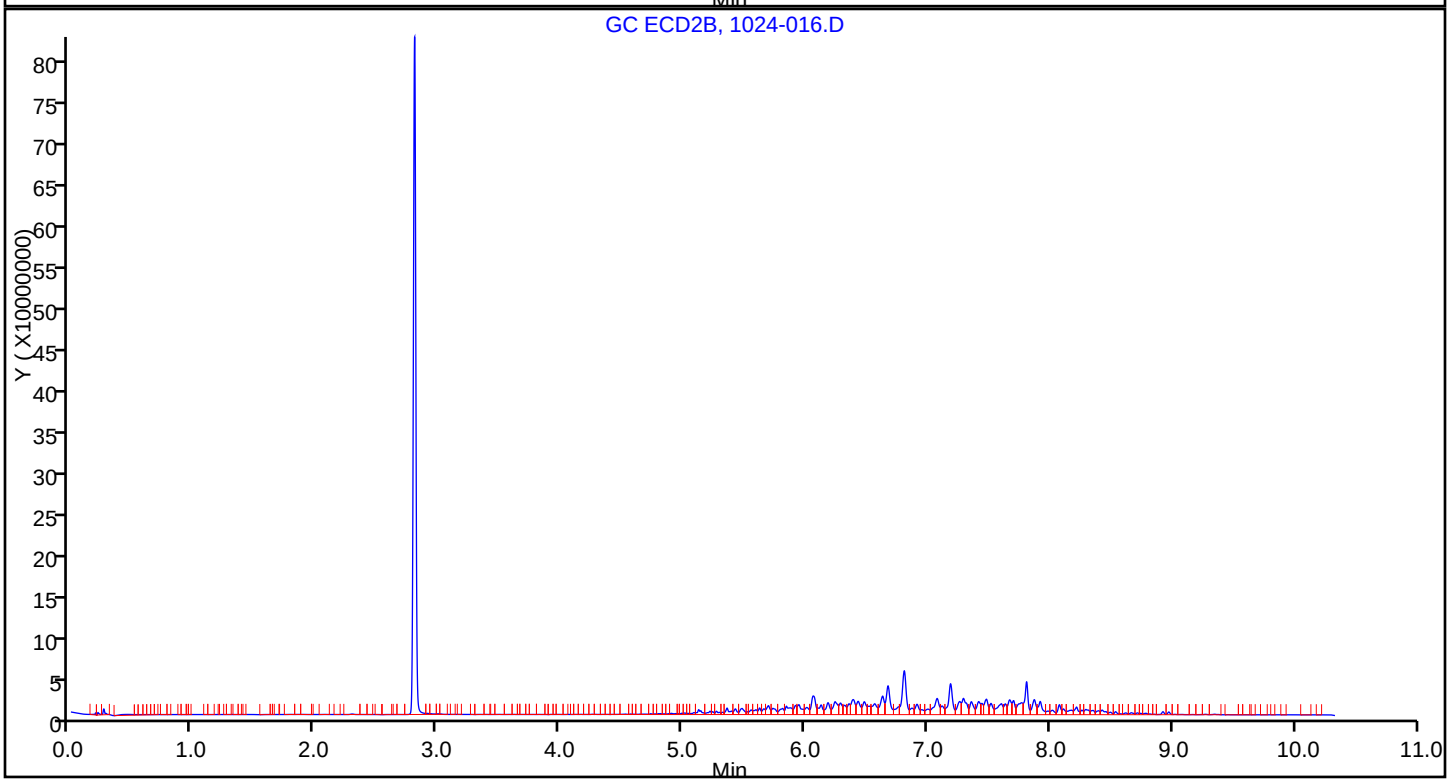
Report Date: 25-Oct-2016 14:36:35 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-016.D

Injection Date:	24-Oct-2016 17:34:42	Instrument ID:	GC75		
Lims ID:	STD005 TOX L5				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-017.D
Lims ID: STD006 TOX L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 24-Oct-2016 17:50:25 ALS Bottle#: 17 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L6
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:26 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:22:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.036	3.046	-0.010	464334331	200.0	200.0	
2	2.809	2.810	-0.001	1119498104	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	103480745	1000.0	979.0	M
1	7.274	7.274	0.000	62802497	1000.0	1012.1	M
1	7.541	7.540	0.001	68078435	1000.0	1021.5	M
1	7.671	7.670	0.001	81887633	1000.0	1018.5	M
1	7.780	7.780	0.000	70909684	1000.0	1013.5	M
		Average of Peak Amounts =				1008.9	
2	6.676	6.677	-0.001	154251842	1000.0	971.0	M
2	6.809	6.810	-0.001	241279874	1000.0	997.5	M
2	7.188	7.187	0.001	174187069	1000.0	1006.9	M
2	7.809	7.810	-0.001	141868976	1000.0	1010.3	M
2	7.873	7.874	-0.001	78626460	1000.0	974.1	M
		Average of Peak Amounts =				992.0	
					RPD =	1.70	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

GCTOXL6_00012 Amount Added: 1.00 Units: mL

Report Date: 25-Oct-2016 14:36:28 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-017.D

Injection Date: 24-Oct-2016 17:50:25 Instrument ID: GC75

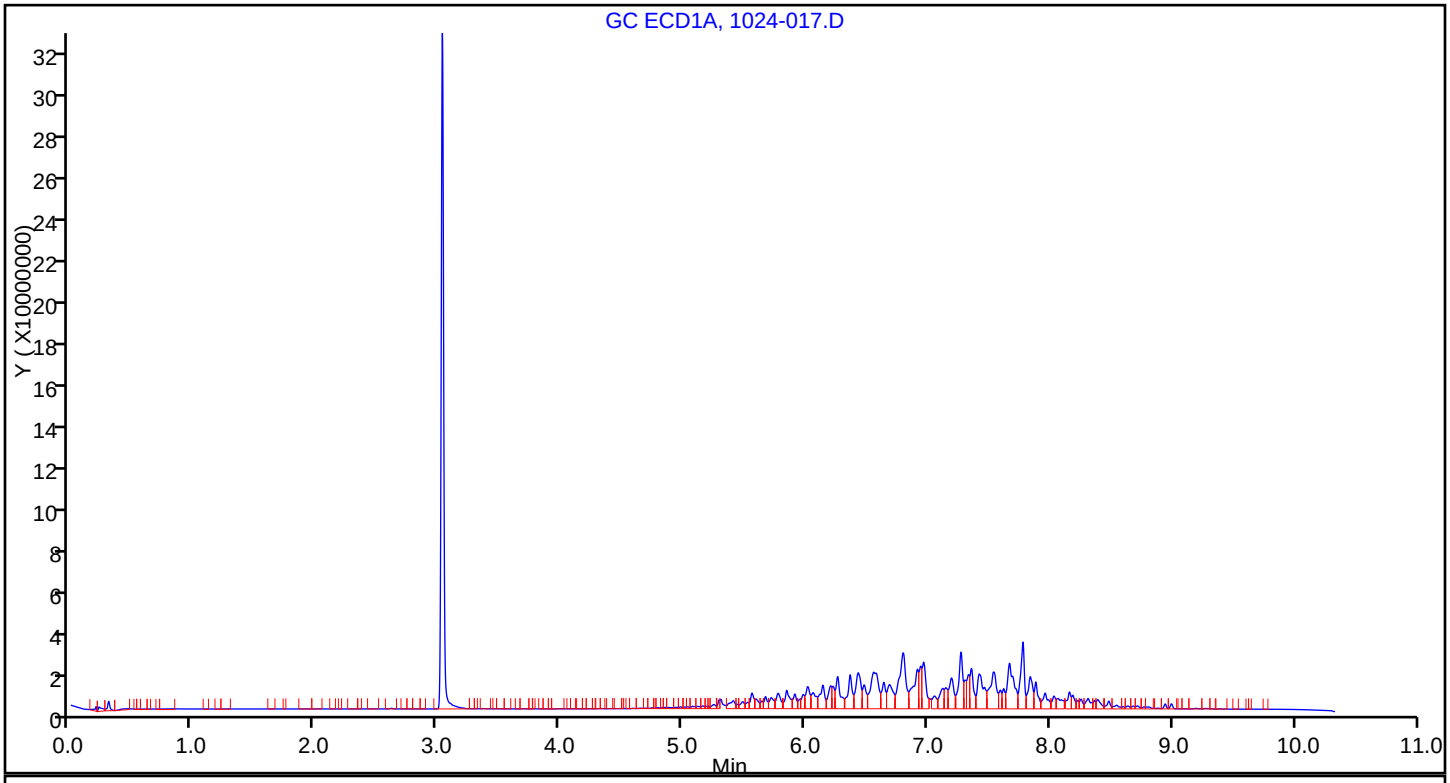
Lims ID: STD006 TOX L6

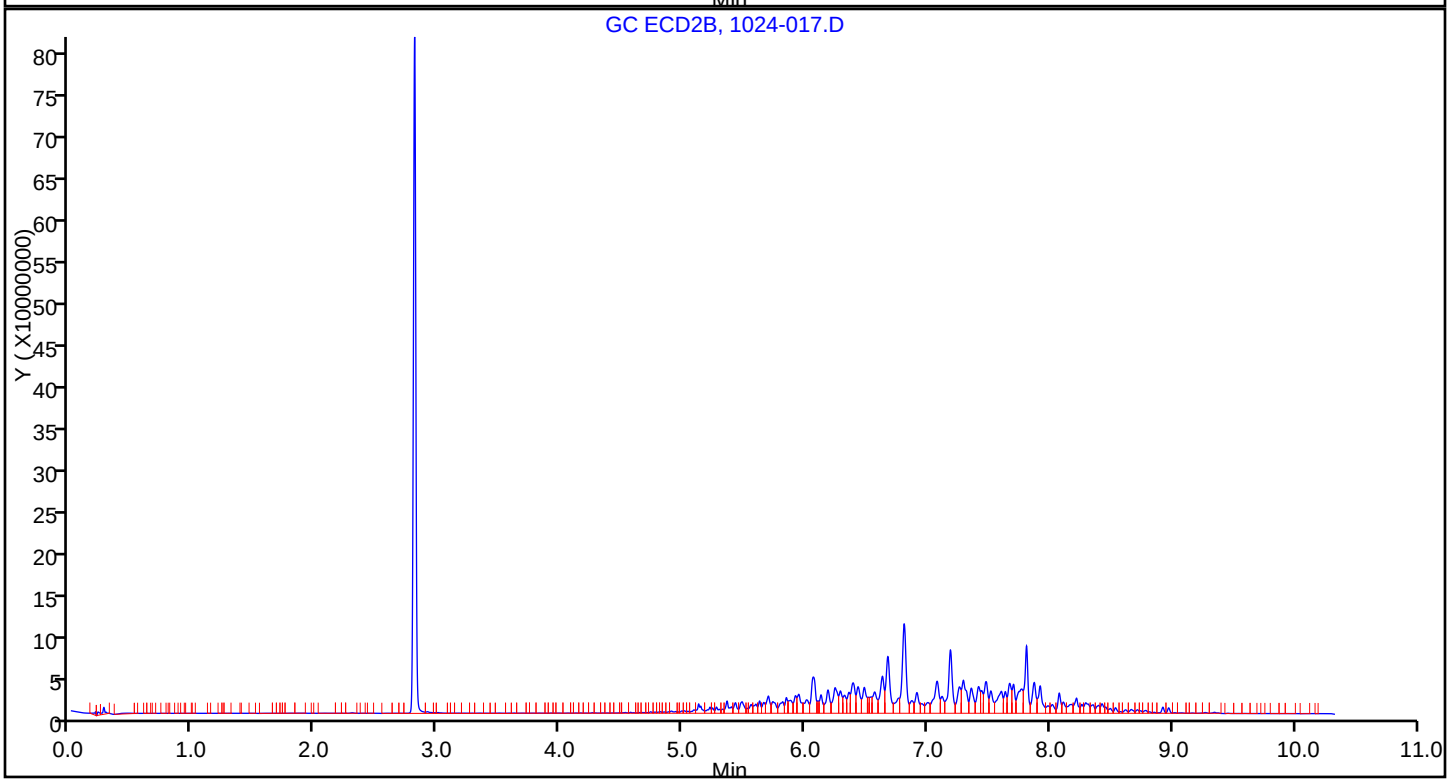
Client ID:

Operator ID: SMH ALS Bottle#: 17 Worklist Smp#: 17

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 134186

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP II ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/24/2016 16:32 Calibration End Date: 10/24/2016 17:50 Calibration ID: 26149

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 320-134186/12	1024-012.D
Level 2	STD002 320-134186/13	1024-013.D
Level 3	STD003 320-134186/14	1024-014.D
Level 4	STD004 320-134186/15	1024-015.D
Level 5	STD005 320-134186/16	1024-016.D
Level 6	STD006 320-134186/17	1024-017.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Toxaphene Peak 1	0.0309 0.0276	0.0290	0.0278	0.0277	0.0273	Ave		0.0284				4.8		20.0			
Toxaphene Peak 2	0.0453 0.0431	0.0433	0.0423	0.0429	0.0424	Ave		0.0432				2.5		20.0			
Toxaphene Peak 3	0.0321 0.0311	0.0308	0.0305	0.0304	0.0304	Ave		0.0309				2.2		20.0			
Toxaphene Peak 4	0.0256 0.0253	0.0252	0.0242	0.0252	0.0249	Ave		0.0251				1.9		20.0			
Toxaphene Peak 5	0.0154 0.0140	0.0155	0.0139	0.0141	0.0137	Ave		0.0144				5.5		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 134186

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP II ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/24/2016 16:32 Calibration End Date: 10/24/2016 17:50 Calibration ID: 26149

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 320-134186/12	1024-012.D
Level 2	STD002 320-134186/13	1024-013.D
Level 3	STD003 320-134186/14	1024-014.D
Level 4	STD004 320-134186/15	1024-015.D
Level 5	STD005 320-134186/16	1024-016.D
Level 6	STD006 320-134186/17	1024-017.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Toxaphene Peak 1	BNB	Ave	8227772 154251842	15517988	23181888	46645728	78378167	50.0 1000	100	150	300	500
Toxaphene Peak 2	BNB	Ave	12061030 241279874	23183845	35201128	72305750	121637484	50.0 1000	100	150	300	500
Toxaphene Peak 3	BNB	Ave	8564166 174187069	16496410	25426073	51291399	87138326	50.0 1000	100	150	300	500
Toxaphene Peak 4	BNB	Ave	6815505 141868976	13500167	20184175	42568417	71318833	50.0 1000	100	150	300	500
Toxaphene Peak 5	BNB	Ave	4093569 78626460	8278480	11544592	23742978	39262544	50.0 1000	100	150	300	500

Curve Type Legend:
Ave = Average ISTD

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-012.D
Lims ID: STD001 TOX L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 24-Oct-2016 16:32:02 ALS Bottle#: 12 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L1
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:56 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:16:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.035	0.000	463213167	200.0	200.0	
2	2.809	2.809	0.000	1065701559	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	5633110	50.0	53.4	M
1	7.274	7.274	0.000	3101722	50.0	50.1	M
1	7.540	7.540	0.000	3304411	50.0	49.7	M
1	7.670	7.670	0.000	4062837	50.0	50.7	M
1	7.780	7.780	0.000	3528177	50.0	50.5	M
		Average of Peak Amounts =				50.9	
2	6.677	6.677	0.000	8227772	50.0	54.4	M
2	6.810	6.810	0.000	12061030	50.0	52.4	M
2	7.187	7.187	0.000	8564166	50.0	52.0	M
2	7.810	7.810	0.000	6815505	50.0	51.0	M
2	7.874	7.874	0.000	4093569	50.0	53.3	M
		Average of Peak Amounts =				52.6	
						RPD = 3.33	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

GCTOXL1_00014 Amount Added: 1.00 Units: mL

Report Date: 25-Oct-2016 14:36:58 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-012.D

Injection Date: 24-Oct-2016 16:32:02 Instrument ID: GC75

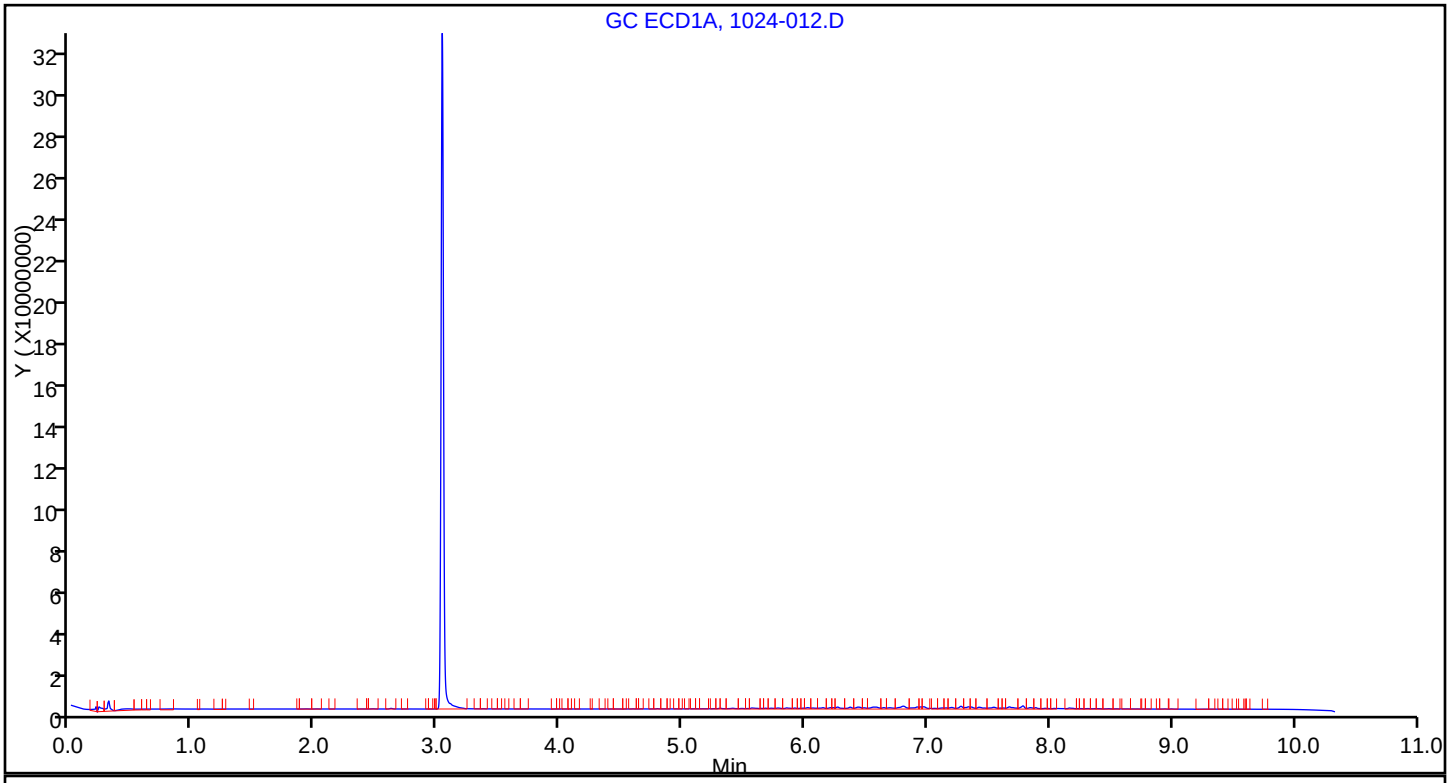
Lims ID: STD001 TOX L1

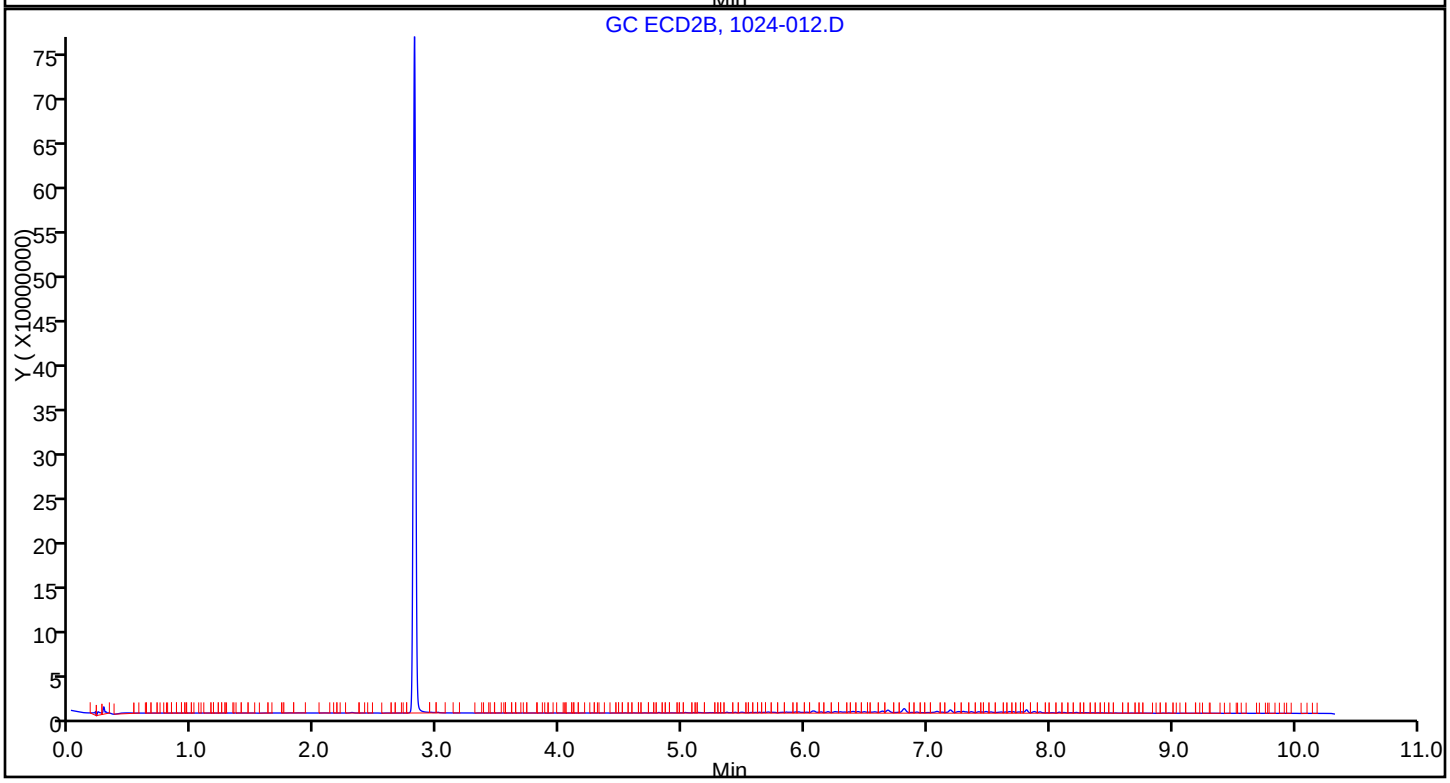
Client ID:

Operator ID: SMH ALS Bottle#: 12 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-013.D
Lims ID: STD002 TOX L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Oct-2016 16:47:44 ALS Bottle#: 13 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L2
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:51 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:20:23

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.046	-0.011	448668678	200.0	200.0	
2	2.808	2.810	-0.002	1069955009	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	10281476	100.0	100.7	M
1	7.274	7.274	0.000	6091509	100.0	101.6	M
1	7.541	7.540	0.001	6490378	100.0	100.8	M
1	7.671	7.670	0.001	7683214	100.0	98.9	M
1	7.779	7.780	-0.001	6701953	100.0	99.1	M
		Average of Peak Amounts =				100.2	
2	6.677	6.677	0.000	15517988	100.0	102.2	M
2	6.809	6.810	-0.001	23183845	100.0	100.3	M
2	7.188	7.187	0.001	16496410	100.0	99.8	M
2	7.809	7.810	-0.001	13500167	100.0	100.6	M
2	7.874	7.874	0.000	8278480	100.0	107.3	M
		Average of Peak Amounts =				102.0	
						RPD = 1.80	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

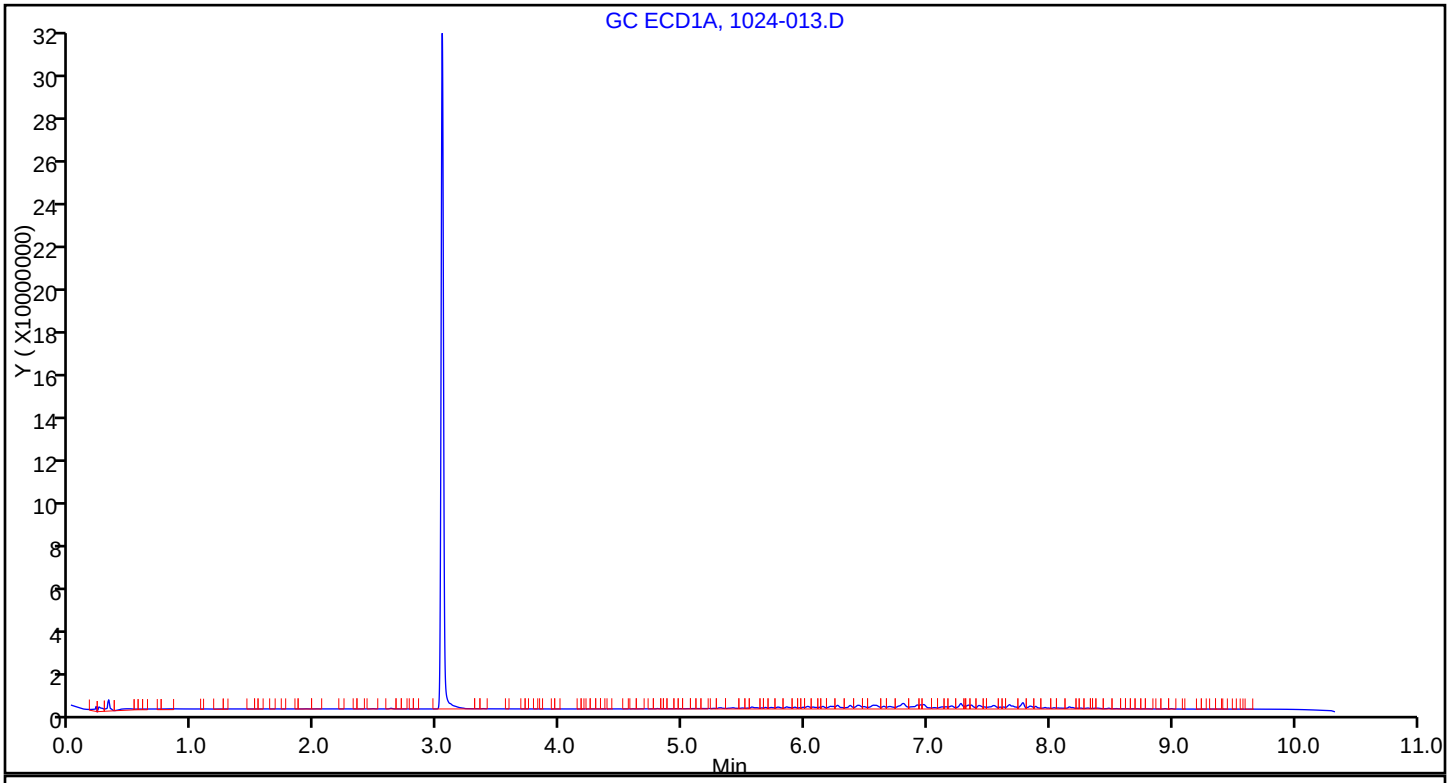
GCTOXL2_00012 Amount Added: 1.00 Units: mL

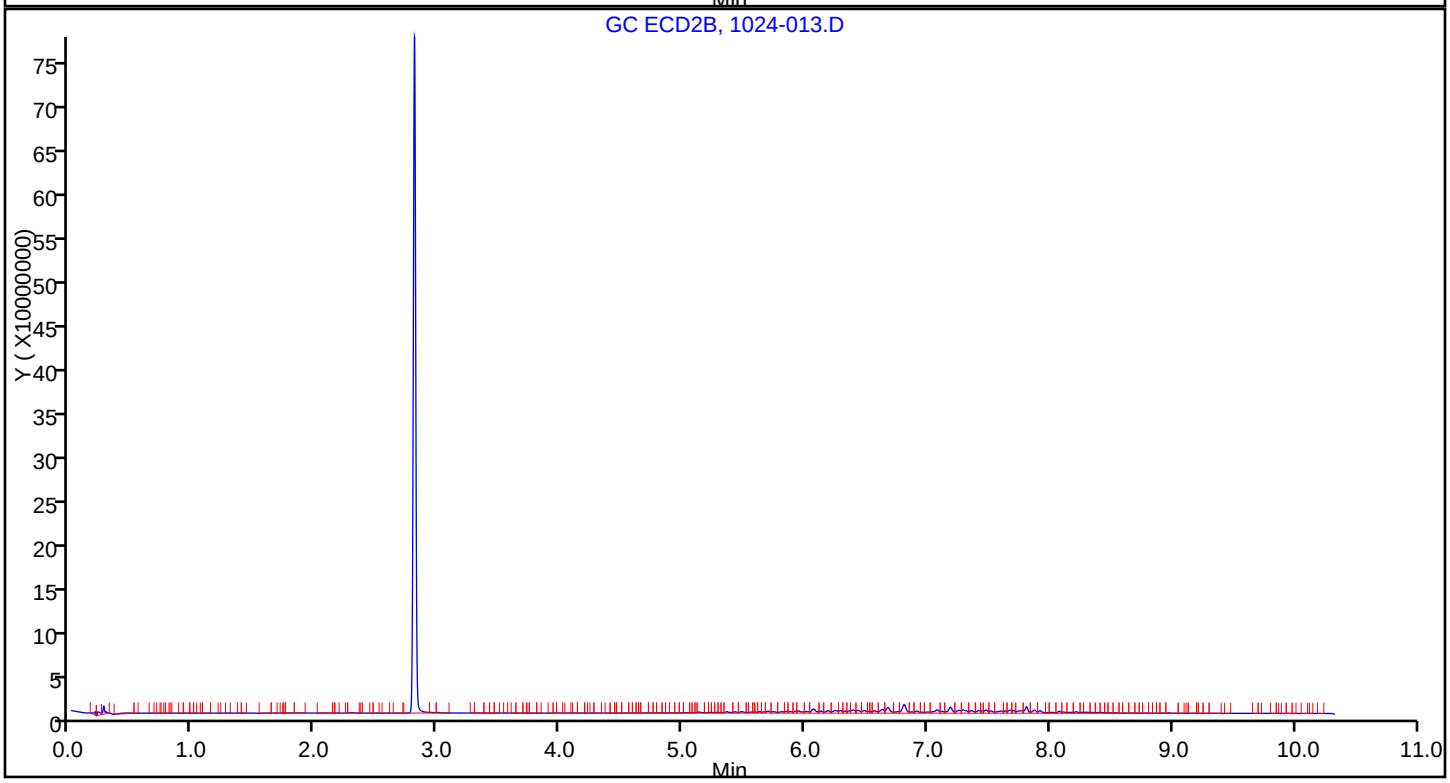
Report Date: 25-Oct-2016 14:36:53 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-013.D

Injection Date:	24-Oct-2016 16:47:44	Instrument ID:	GC75		
Lims ID:	STD002 TOX L2				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	13	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-014.D
Lims ID: STD003 TOX L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 24-Oct-2016 17:03:23 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L3
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:47 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:20:58

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.046	-0.011	455454355	200.0	200.0	
2	2.808	2.810	-0.002	1110270620	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	15579789	150.0	150.3	M
1	7.274	7.274	0.000	8972578	150.0	147.4	M
1	7.543	7.540	0.003	9822035	150.0	150.2	M
1	7.672	7.670	0.002	11832421	150.0	150.0	M
1	7.781	7.780	0.001	10374760	150.0	151.2	M
		Average of Peak Amounts =				149.8	
2	6.677	6.677	0.000	23181888	150.0	147.1	M
2	6.809	6.810	-0.001	35201128	150.0	146.7	M
2	7.188	7.187	0.001	25426073	150.0	148.2	M
2	7.810	7.810	0.000	20184175	150.0	144.9	M
2	7.873	7.874	-0.001	11544592	150.0	144.2	M
		Average of Peak Amounts =				146.2	
						RPD = 2.42	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

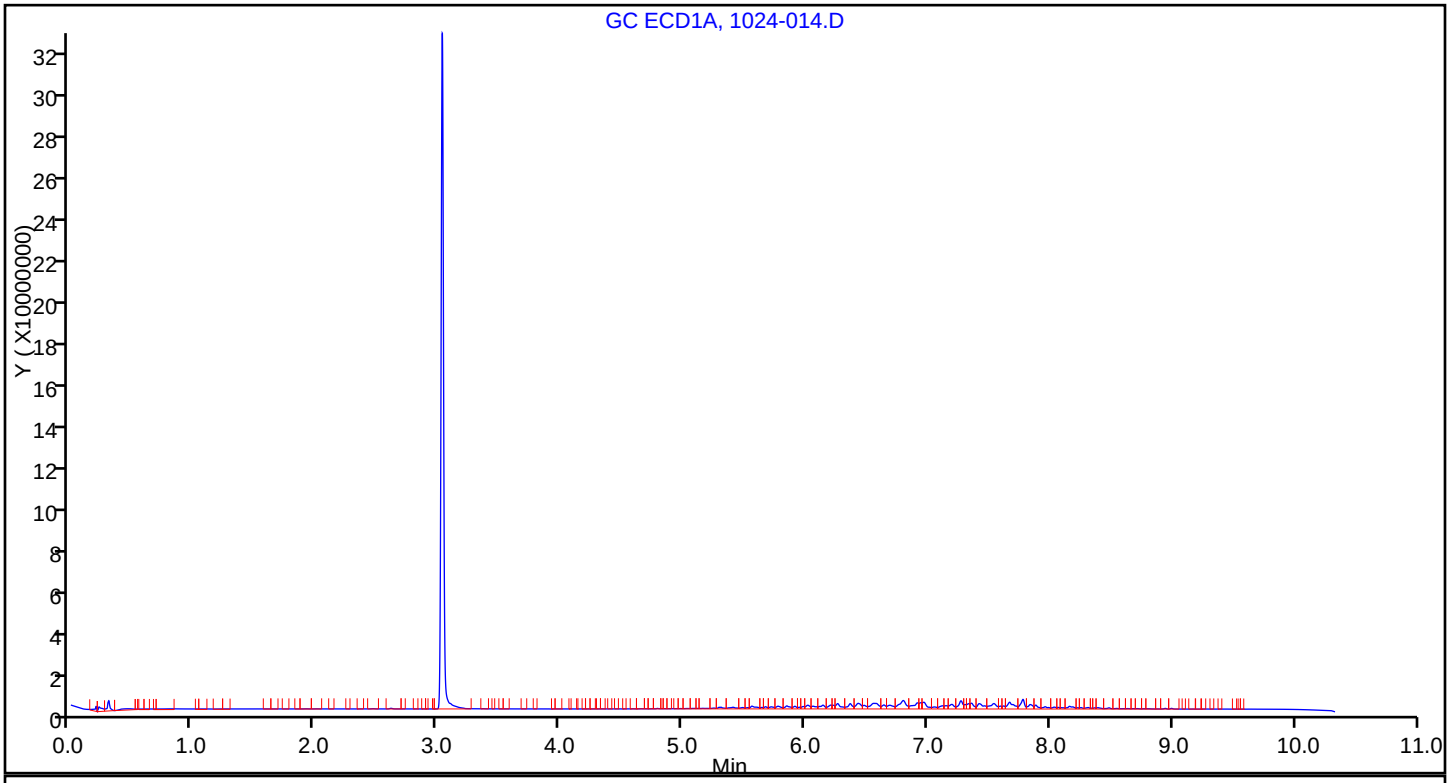
GCTOXL3_00012 Amount Added: 1.00 Units: mL

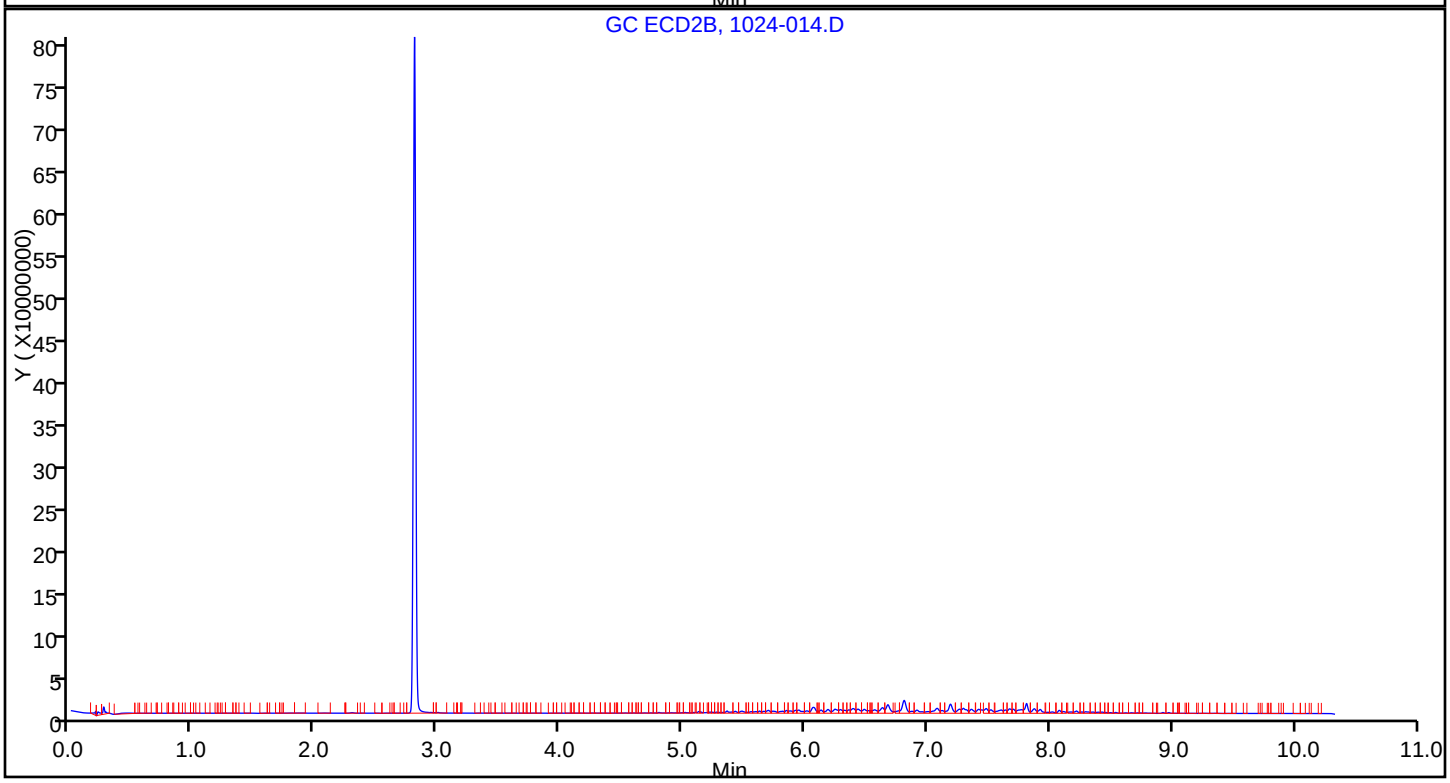
Report Date: 25-Oct-2016 14:36:48 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-014.D

Injection Date:	24-Oct-2016 17:03:23	Instrument ID:	GC75		
Lims ID:	STD003 TOX L3				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	14	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-015.D
Lims ID: STD004 TOX L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 24-Oct-2016 17:19:01 ALS Bottle#: 15 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L4
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:39 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:21:42

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.046	-0.011	458989383	200.0	200.0	
2	2.809	2.810	-0.001	1124653870	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	30804832	300.0	294.8	M
1	7.272	7.274	-0.002	18191867	300.0	296.6	M
1	7.541	7.540	0.001	19747507	300.0	299.8	M
1	7.670	7.670	0.000	23665349	300.0	297.8	M
1	7.781	7.780	0.001	20594223	300.0	297.8	M
		Average of Peak Amounts =				297.3	
2	6.677	6.677	0.000	46645728	300.0	292.3	M
2	6.810	6.810	0.000	72305750	300.0	297.6	M
2	7.187	7.187	0.000	51291399	300.0	295.1	M
2	7.810	7.810	0.000	42568417	300.0	301.8	M
2	7.873	7.874	-0.001	23742978	300.0	292.8	M
		Average of Peak Amounts =				295.9	
						RPD = 0.49	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

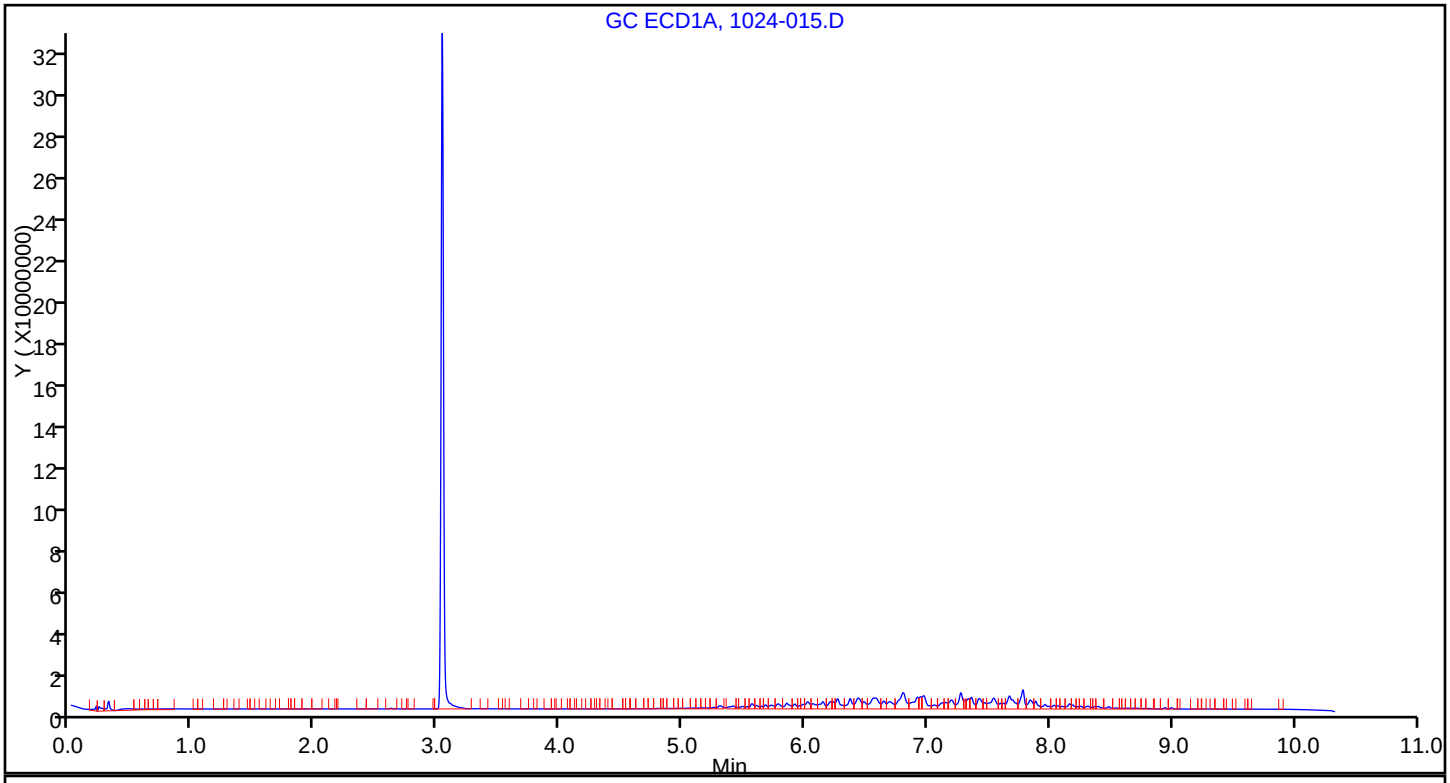
GCTOXL4_00012 Amount Added: 1.00 Units: mL

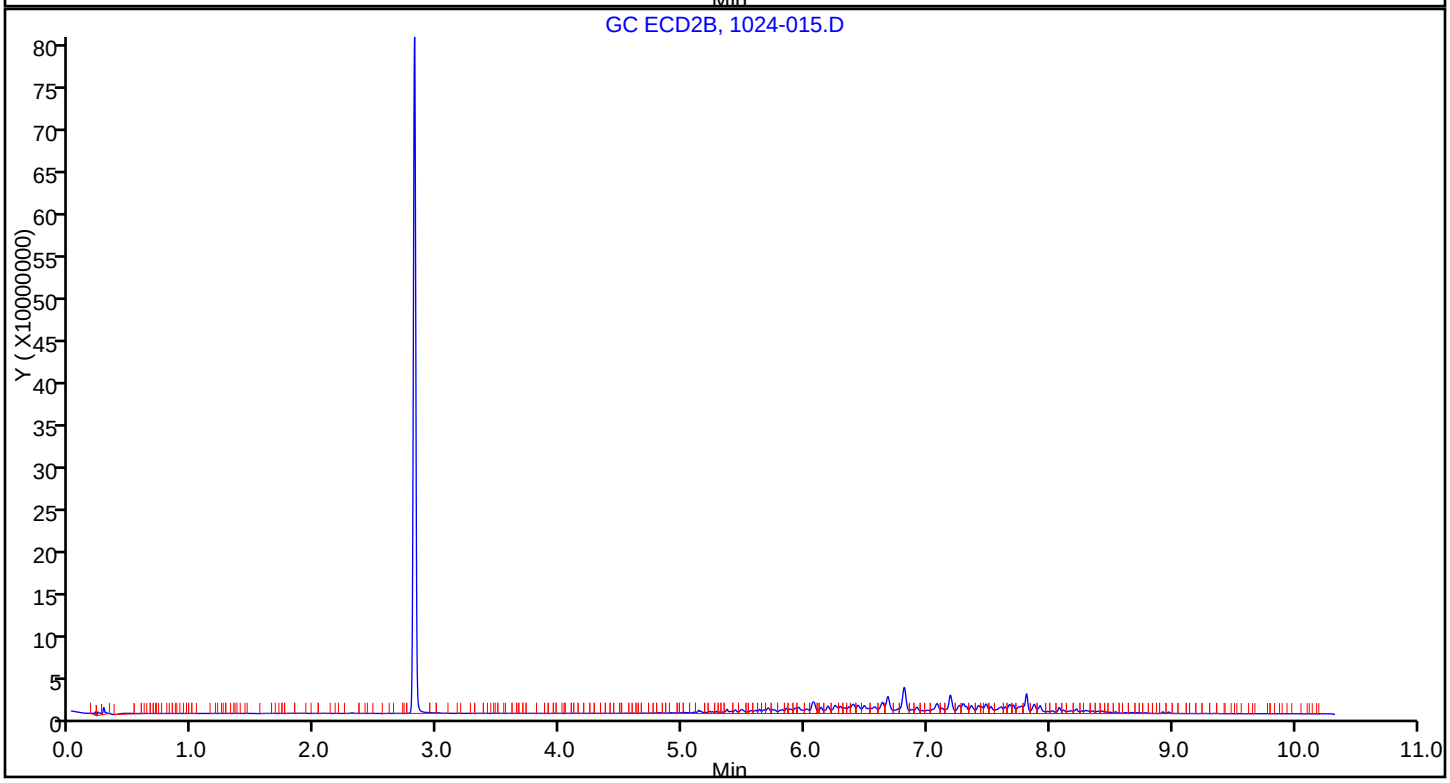
Report Date: 25-Oct-2016 14:36:42 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-015.D

Injection Date:	24-Oct-2016 17:19:01	Instrument ID:	GC75		
Lims ID:	STD004 TOX L4				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	15	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-016.D
Lims ID: STD005 TOX L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 24-Oct-2016 17:34:42 ALS Bottle#: 16 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:33 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:22:21

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.046	-0.011	479273363	200.0	200.0	
2	2.810	2.810	-0.001	1146521437	200.0	200.0	
32 Toxaphene							
1	6.804	6.802	0.002	52443753	500.0	480.7	
1	7.275	7.274	0.001	31965867	500.0	499.1	
1	7.542	7.540	0.002	33562529	500.0	487.9	
1	7.672	7.670	0.002	40926520	500.0	493.2	
1	7.780	7.780	0.000	35522184	500.0	491.9	
		Average of Peak Amounts =				490.6	
2	6.678	6.677	0.001	78378167	500.0	481.8	
2	6.810	6.810	0.000	121637484	500.0	491.0	
2	7.189	7.187	0.002	87138326	500.0	491.8	
2	7.810	7.810	0.000	71318833	500.0	495.9	
2	7.873	7.874	-0.001	39262544	500.0	475.0	
		Average of Peak Amounts =				487.1	
						RPD = 0.71	

Reagents:

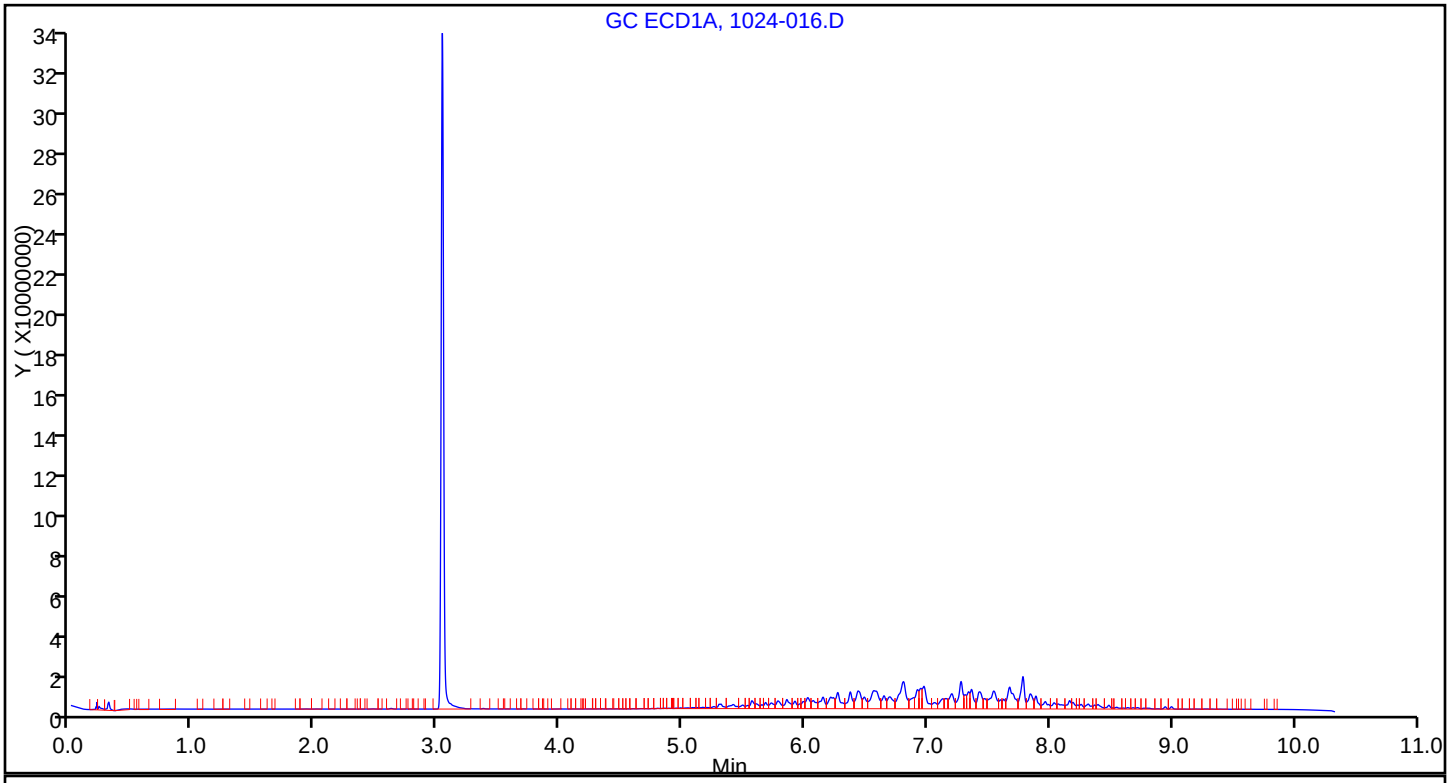
GCTOXL5_00012 Amount Added: 1.00 Units: mL

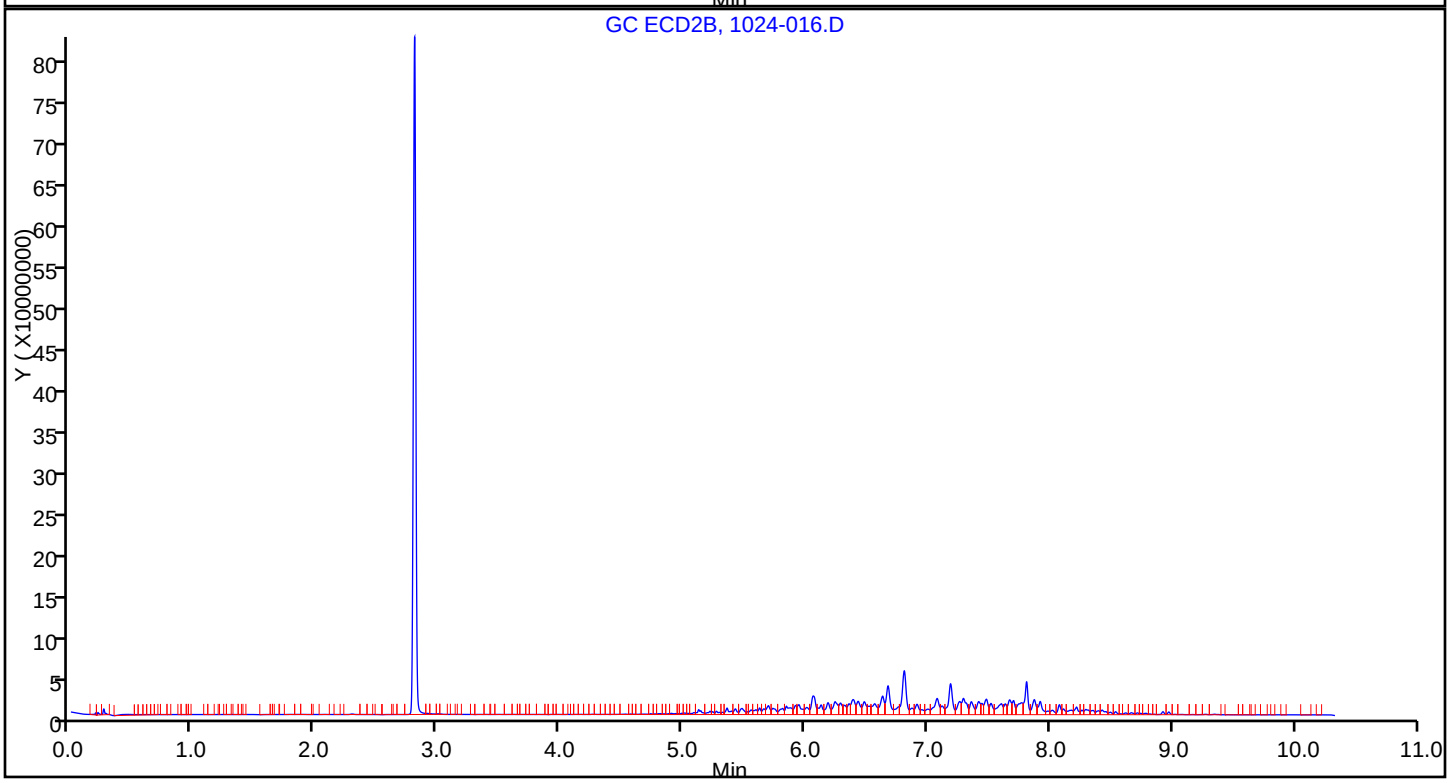
Report Date: 25-Oct-2016 14:36:36 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-016.D

Injection Date:	24-Oct-2016 17:34:42	Instrument ID:	GC75		
Lims ID:	STD005 TOX L5				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	16	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-017.D
Lims ID: STD006 TOX L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 24-Oct-2016 17:50:25 ALS Bottle#: 17 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX L6
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:36:26 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:22:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.036	3.046	-0.010	464334331	200.0	200.0	
2	2.809	2.810	-0.001	1119498104	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	103480745	1000.0	979.0	M
1	7.274	7.274	0.000	62802497	1000.0	1012.1	M
1	7.541	7.540	0.001	68078435	1000.0	1021.5	M
1	7.671	7.670	0.001	81887633	1000.0	1018.5	M
1	7.780	7.780	0.000	70909684	1000.0	1013.5	M
		Average of Peak Amounts =				1008.9	
2	6.676	6.677	-0.001	154251842	1000.0	971.0	M
2	6.809	6.810	-0.001	241279874	1000.0	997.5	M
2	7.188	7.187	0.001	174187069	1000.0	1006.9	M
2	7.809	7.810	-0.001	141868976	1000.0	1010.3	M
2	7.873	7.874	-0.001	78626460	1000.0	974.1	M
		Average of Peak Amounts =				992.0	
						RPD = 1.70	

QC Flag Legend

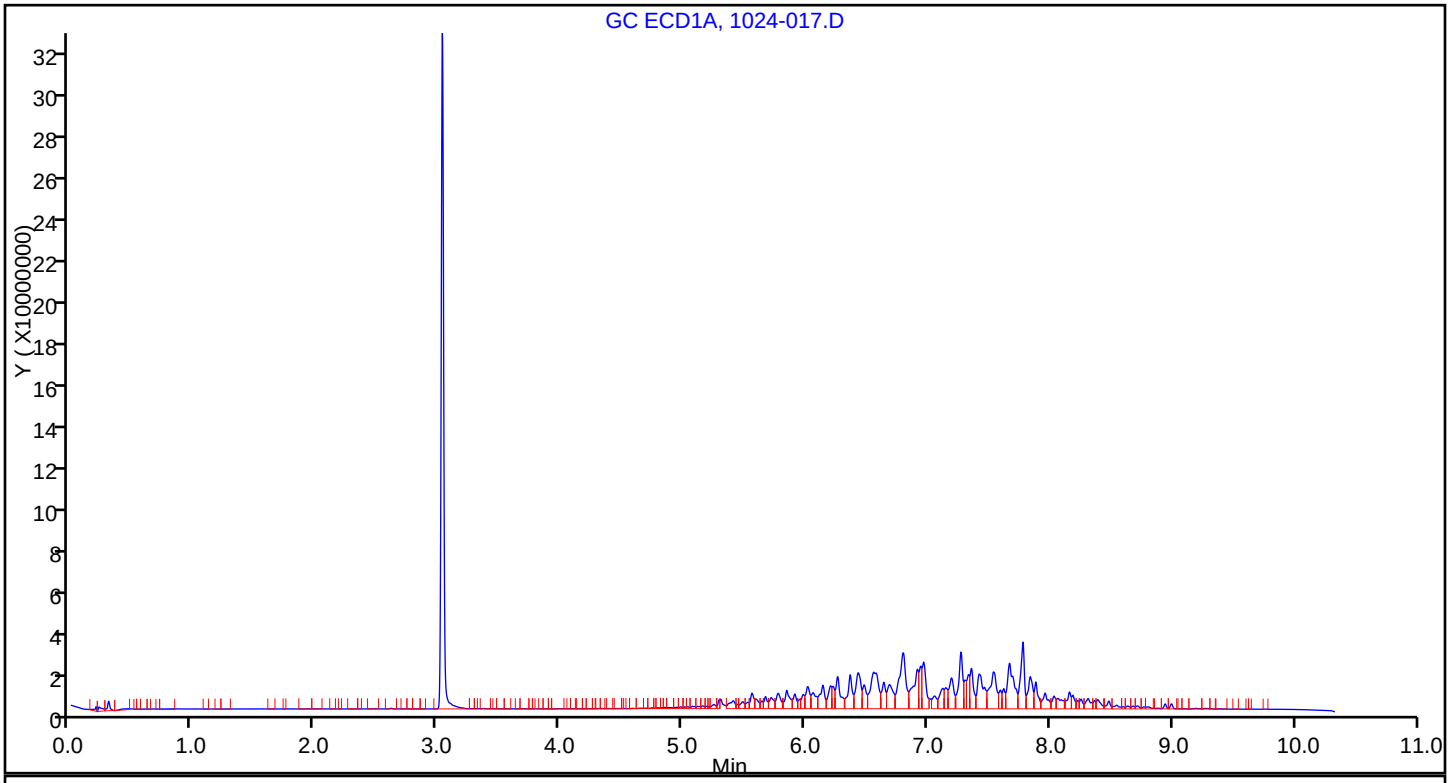
Review Flags
M - Manually Integrated

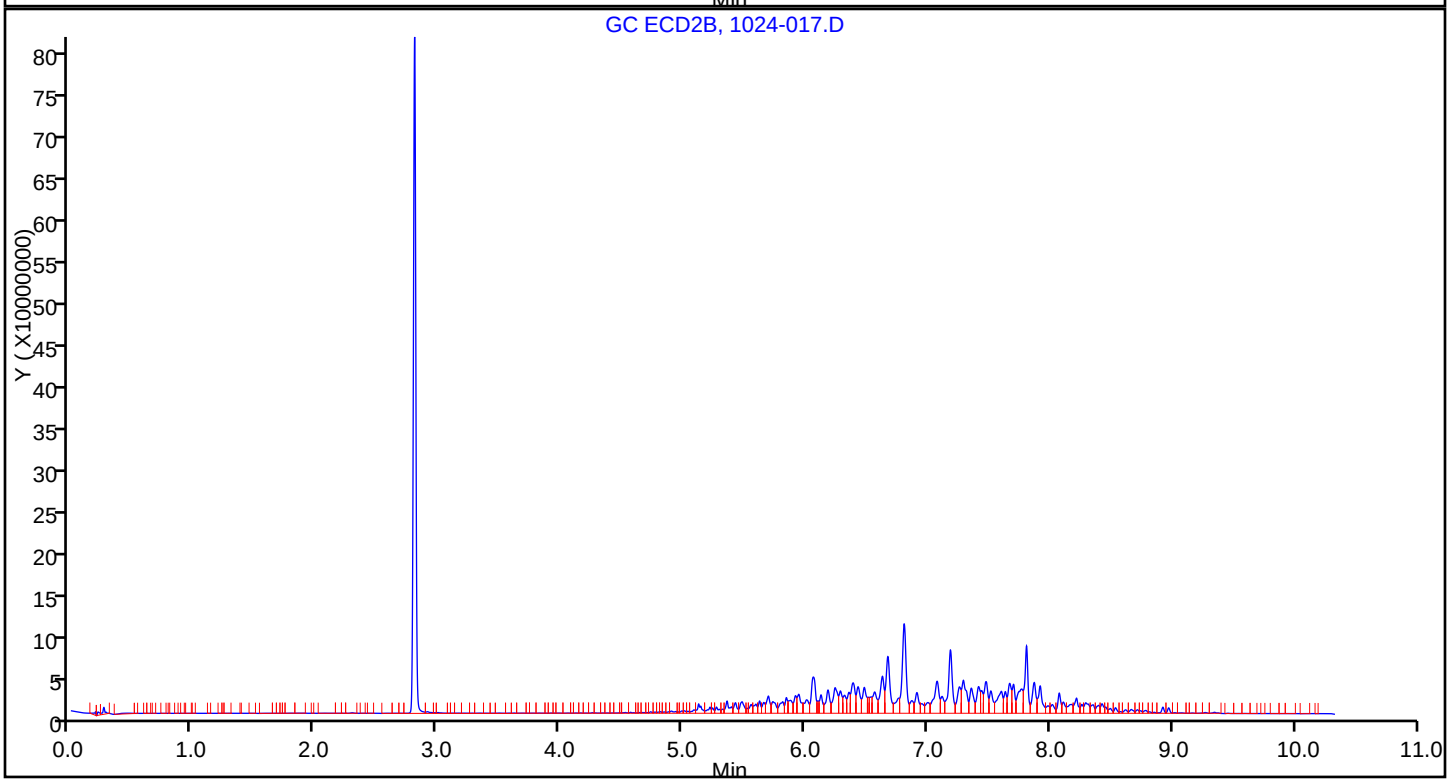
Reagents:

GCTOXL6_00012 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-017.D
Injection Date: 24-Oct-2016 17:50:25 Instrument ID: GC75
Lims ID: STD006 TOX L6
Client ID:
Operator ID: SMH ALS Bottle#: 17 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 135054

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP I ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/29/2016 14:16 Calibration End Date: 10/29/2016 15:50 Calibration ID: 26306

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 320-135054/9	1029-009.D
Level 2	STD002 320-135054/10	1029-010.D
Level 3	STD003 320-135054/11	1029-011.D
Level 4	STD004 320-135054/12	1029-012.D
Level 5	STD005 320-135054/13	1029-013.D
Level 6	STD006 320-135054/14	1029-014.D
Level 7	STD007 320-135054/15	1029-015.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
alpha-BHC	1.2119 1.5038	1.1856 1.5839	1.2353	1.3111	1.3549	Ave		1.3409				11.3		20.0			
gamma-BHC (Lindane)	1.2179 1.3642	1.1772 1.4663	1.1835	1.2120	1.2540	Ave		1.2679				8.5		20.0			
beta-BHC	0.6396 0.5054	0.5744 0.5298	0.5348	0.5131	0.4931	Ave		0.5415				9.3		20.0			
delta-BHC	1.1441 1.3059	1.0484 1.3809	1.0755	1.1356	1.2170	Ave		1.1868				10.2		20.0			
Heptachlor	1.1498 1.2478	1.1039 1.3274	1.1153	1.1520	1.1730	Ave		1.1813				6.7		20.0			
Aldrin	1.1641 1.2355	1.1164 1.3079	1.1191	1.1544	1.1604	Ave		1.1797				5.8		20.0			
Heptachlor epoxide	1.1501 1.0857	1.0858 1.1121	1.0434	1.0503	1.0403	Ave		1.0811				3.7		20.0			
gamma-Chlordane	1.1432 1.1489	1.0817 1.2157	1.0475	1.0649	1.0706	Ave		1.1104				5.5		20.0			
alpha-Chlordane	1.1449 1.1028	1.0794 1.1603	1.0370	1.0433	1.0398	Ave		1.0868				4.7		20.0			
4,4'-DDE	0.9834 1.0766	0.9470 1.1317	0.9243	0.9637	0.9933	Ave		1.0029				7.4		20.0			
Endosulfan I	1.1202 1.0290	1.0429 1.0533	0.9940	0.9985	0.9828	Ave		1.0315				4.6		20.0			
Dieldrin	1.1175 1.1380	1.0618 1.1846	1.0371	1.0497	1.0707	Ave		1.0942				4.9		20.0			
Endrin	0.9290 0.9443	0.8834 0.9792	0.8584	0.8592	0.8834	Ave		0.9053				5.1		20.0			
4,4'-DDD	0.9055 0.9010	0.8593 0.9532	0.8325	0.8362	0.8520	Ave		0.8771				5.1		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 135054

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP I ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/29/2016 14:16 Calibration End Date: 10/29/2016 15:50 Calibration ID: 26306

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Endosulfan II	0.9421 0.8598	0.8253 0.9171	0.7605	0.7791	0.8555	Ave		0.8485				7.9		20.0			
4,4'-DDT	0.6347 0.8186	0.6242 0.9042	0.6386	0.6604	0.7136	Ave		0.7135				15.1		20.0			
Endrin aldehyde	0.8564 0.7469	0.7912 0.7693	0.7480	0.7422	0.7296	Ave		0.7691				5.7		20.0			
Methoxychlor	0.4065 0.4091	0.3943 0.4185	0.3881	0.3802	0.3879	Ave		0.3978				3.5		20.0			
Endosulfan sulfate	0.9785 0.8355	0.9214 0.8677	0.8511	0.8364	0.8082	Ave		0.8713				6.8		20.0			
Endrin ketone	0.9830 0.9253	0.9796 0.9565	0.9231	0.9256	0.9062	Ave		0.9428				3.2		20.0			
Tetrachloro-m-xylene	1.0037 0.8938	0.9274 0.9482	0.8807	0.8696	0.8561	Ave		0.9113				5.7		20.0			
DCB Decachlorobiphenyl	0.8384 0.7135	0.7865 0.7406	0.7449	0.7271	0.7023	Ave		0.7505				6.3		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 135054

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP I ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/29/2016 14:16 Calibration End Date: 10/29/2016 15:50 Calibration ID: 26306

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 320-135054/9	1029-009.D
Level 2	STD002 320-135054/10	1029-010.D
Level 3	STD003 320-135054/11	1029-011.D
Level 4	STD004 320-135054/12	1029-012.D
Level 5	STD005 320-135054/13	1029-013.D
Level 6	STD006 320-135054/14	1029-014.D
Level 7	STD007 320-135054/15	1029-015.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
alpha-BHC	BNB	Ave	3178729 196594808	6306387 411807304	16246978	34483604	72532871	1.00 50.0	2.00 100	5.00	10.0	20.0
gamma-BHC (Lindane)	BNB	Ave	3194384 178343478	6261729 381242272	15564968	31877544	67133427	1.00 50.0	2.00 100	5.00	10.0	20.0
beta-BHC	BNB	Ave	1677691 66073273	3055393 137749828	7033647	13495952	26398029	1.00 50.0	2.00 100	5.00	10.0	20.0
delta-BHC	BNB	Ave	3000860 170726290	5576676 359044709	14145021	29866008	65152645	1.00 50.0	2.00 100	5.00	10.0	20.0
Heptachlor	BNB	Ave	3015965 163125870	5871841 345123231	14667971	30297584	62795802	1.00 50.0	2.00 100	5.00	10.0	20.0
Aldrin	BNB	Ave	3053375 161512168	5938371 340049282	14718557	30360504	62122208	1.00 50.0	2.00 100	5.00	10.0	20.0
Heptachlor epoxide	BNB	Ave	3016751 141929610	5775527 289154710	13722394	27624958	55693100	1.00 50.0	2.00 100	5.00	10.0	20.0
gamma-Chlordane	BNB	Ave	2998621 150203585	5753911 316078369	13776021	28007386	57310969	1.00 50.0	2.00 100	5.00	10.0	20.0
alpha-Chlordane	BNB	Ave	3003128 144167902	5741848 301681856	13638939	27440781	55664223	1.00 50.0	2.00 100	5.00	10.0	20.0
4,4'-DDE	BNB	Ave	2579472 140747870	5037274 294256733	12155657	25345829	53174243	1.00 50.0	2.00 100	5.00	10.0	20.0
Endosulfan I	BNB	Ave	2938324 134527265	5547664 273853676	13073596	26261695	52611595	1.00 50.0	2.00 100	5.00	10.0	20.0
Dieldrin	BNB	Ave	2931031 148766628	5648024 308007045	13640260	27608240	57320456	1.00 50.0	2.00 100	5.00	10.0	20.0
Endrin	BNB	Ave	2436629 123446049	4699210 254601814	11289724	22597948	47291556	1.00 50.0	2.00 100	5.00	10.0	20.0
4,4'-DDD	BNB	Ave	2375028 117790142	4570992 247836686	10948702	21992316	45608518	1.00 50.0	2.00 100	5.00	10.0	20.0
Endosulfan II	BNB	Ave	2471135 112403552	4389800 238444451	10001532	20492100	45795745	1.00 50.0	2.00 100	5.00	10.0	20.0

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 135054

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP I ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/29/2016 14:16 Calibration End Date: 10/29/2016 15:50 Calibration ID: 26306

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
4,4'-DDT	BNB	Ave	1664756 107013536	3320270 235094443	8398824	17367895	38200010	1.00 50.0	2.00 100	5.00	10.0	20.0
Endrin aldehyde	BNB	Ave	2246338 97646117	4208633 200013594	9837367	19519516	39056582	1.00 50.0	2.00 100	5.00	10.0	20.0
Methoxychlor	BNB	Ave	1066152 53481063	2097399 108798461	5104039	10000235	20766481	1.00 50.0	2.00 100	5.00	10.0	20.0
Endosulfan sulfate	BNB	Ave	2566476 109226992	4901064 225606957	11193696	21998172	43265455	1.00 50.0	2.00 100	5.00	10.0	20.0
Endrin ketone	BNB	Ave	2578348 120968296	5210667 248704995	12139891	24342829	48512936	1.00 50.0	2.00 100	5.00	10.0	20.0
Tetrachloro-m-xylene	BNB	Ave	2632579 116849587	4932870 246546848	11582569	22870728	45828665	1.00 50.0	2.00 100	5.00	10.0	20.0
DCB Decachlorobiphenyl	BNB	Ave	2199155 93273503	4183392 192546466	9796944	19122824	37598611	1.00 50.0	2.00 100	5.00	10.0	20.0

Curve Type Legend:
Ave = Average ISTD

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-009.D
Lims ID: STD001 PEST L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 29-Oct-2016 14:16:40 ALS Bottle#: 7 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L1
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:35:24 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:27:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.038	3.038	0.000	524587861	200.0	200.0	
2	2.809	2.809	0.000	1178120422	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.859	3.859	0.000	2632579	1.00	1.10	
2	3.733	3.733	0.000	5593204	1.00	1.08	
						RPD = 1.91	
11 alpha-BHC							
1	4.344	4.344	0.000	3178729	1.00	0.9038	
2	4.258	4.258	0.000	7121136	1.00	0.9134	
						RPD = 1.06	
2 gamma-BHC (Lindane)							
1	4.594	4.594	0.000	3194384	1.00	0.9606	
2	4.531	4.531	0.000	6849328	1.00	0.9365	
						RPD = 2.54	
6 beta-BHC							
1	4.661	4.661	0.000	1677691	1.00	1.18	
2	4.599	4.599	0.000	3363937	1.00	1.12	
						RPD = 4.89	
18 delta-BHC							
1	4.793	4.793	0.000	3000860	1.00	0.9640	
2	4.805	4.805	0.000	6629349	1.00	0.9224	
						RPD = 4.41	
19 Heptachlor							
1	4.949	4.949	0.000	3015965	1.00	0.9734	
2	4.841	4.841	0.000	6592468	1.00	0.99	
						RPD = 1.90	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.164	5.164	0.000	3053375	1.00	0.9868	
2	5.059	5.059	0.000	6545186	1.00	0.99	
						RPD = 0.69	
26 Heptachlor epoxide							
1	5.644	5.644	0.000	3016751	1.00	1.06	
2	5.483	5.483	0.000	6358031	1.00	1.06	
						RPD = 0.55	
25 gamma-Chlordane							
1	5.756	5.756	0.000	2998621	1.00	1.03	
2	5.639	5.639	0.000	6170230	1.00	1.01	
						RPD = 1.59	
15 alpha-Chlordane							
1	5.878	5.878	0.000	3003128	1.00	1.05	
2	5.766	5.766	0.000	5841898	1.00	1.05	
						RPD = 0.40	
16 4,4'-DDE							
1	5.945	5.945	0.000	2579472	1.00	0.9806	
2	5.923	5.923	0.000	5392659	1.00	0.9482	
						RPD = 3.37	
7 Endosulfan I							
1	6.012	6.012	0.000	2938324	1.00	1.09	
2	5.820	5.820	0.000	5780969	1.00	1.05	
						RPD = 3.60	
29 Dieldrin							
1	6.263	6.263	0.000	2931031	1.00	1.02	
2	6.088	6.088	0.000	6075522	1.00	0.99	
						RPD = 2.92	
13 Endrin							
1	6.531	6.531	0.000	2436629	1.00	1.03	
2	6.426	6.426	0.000	5212176	1.00	1.03	
						RPD = 0.17	
12 4,4'-DDD							
1	6.606	6.606	0.000	2375028	1.00	1.03	
2	6.572	6.572	0.000	5097897	1.00	1.03	
						RPD = 0.06	
10 Endosulfan II							
1	6.816	6.816	0.000	2471135	1.00	1.11	
2	6.696	6.696	0.000	5202134	1.00	1.09	
						RPD = 1.94	
14 4,4'-DDT							
1	6.988	6.988	0.000	1664756	1.00	0.8896	
2	7.006	7.006	0.000	4020675	1.00	0.9264	
						RPD = 4.05	
27 Endrin aldehyde							
1	7.381	7.381	0.000	2246338	1.00	1.11	
2	7.178	7.178	0.000	4756294	1.00	1.11	
						RPD = 0.63	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.630	7.630	0.000	1066152	1.00	1.02	
2	7.901	7.901	0.000	2543360	1.00	1.09	
						RPD = 6.00	
30 Endosulfan sulfate							
1	7.886	7.886	0.000	2566476	1.00	1.12	
2	7.537	7.537	0.000	5207253	1.00	1.07	
						RPD = 5.04	
1 Endrin ketone							
1	8.174	8.174	0.000	2578348	1.00	1.04	
2	8.121	8.121	0.000	5544135	1.00	1.06	
						RPD = 1.23	
$ 23 DCB Decachlorobiphenyl							M
1	9.211	9.211	0.000	2199155	1.00	1.12	M
2	9.409	9.409	0.000	4478743	1.00	1.10	M
						RPD = 1.69	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL1_00013 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:35:25 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-009.D

Injection Date: 29-Oct-2016 14:16:40 Instrument ID: GC75

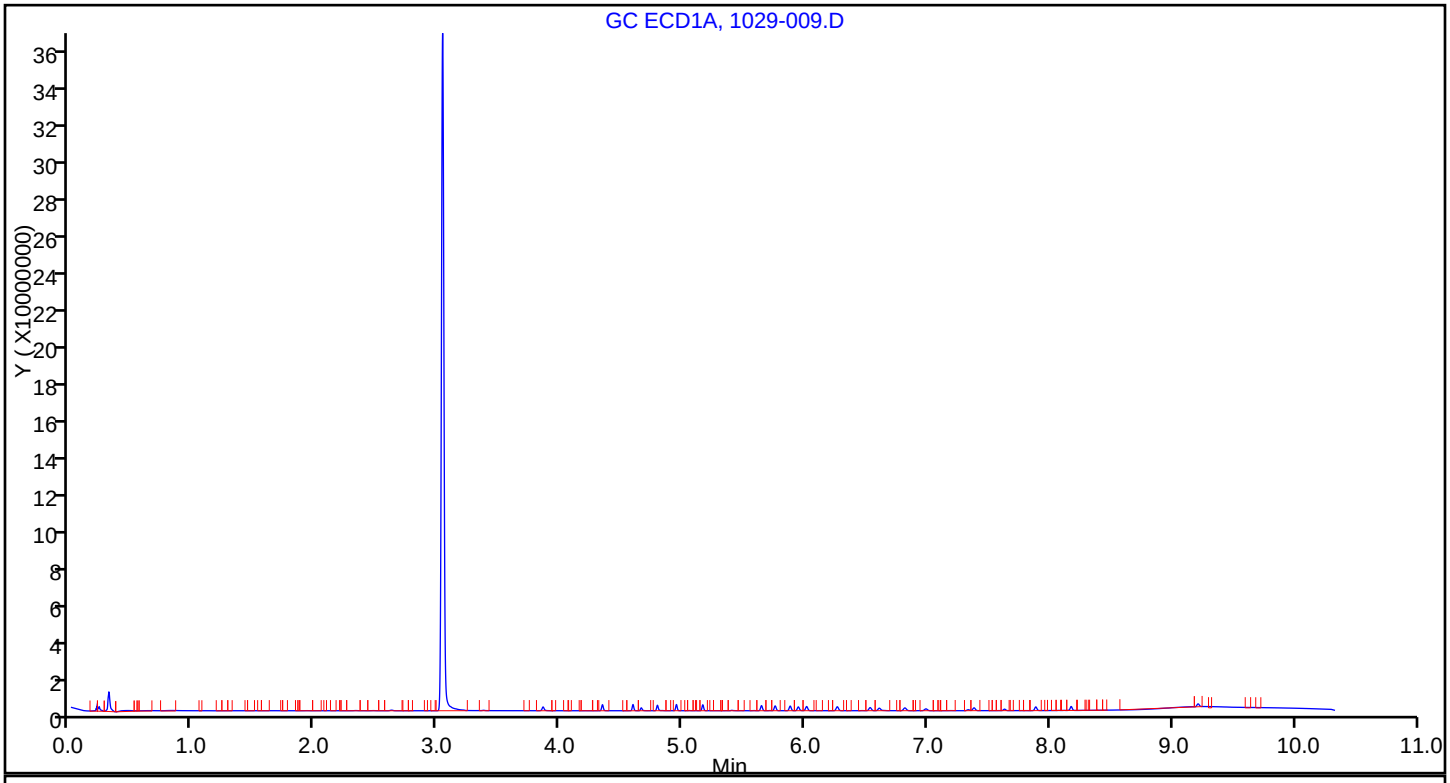
Lims ID: STD001 PEST L1

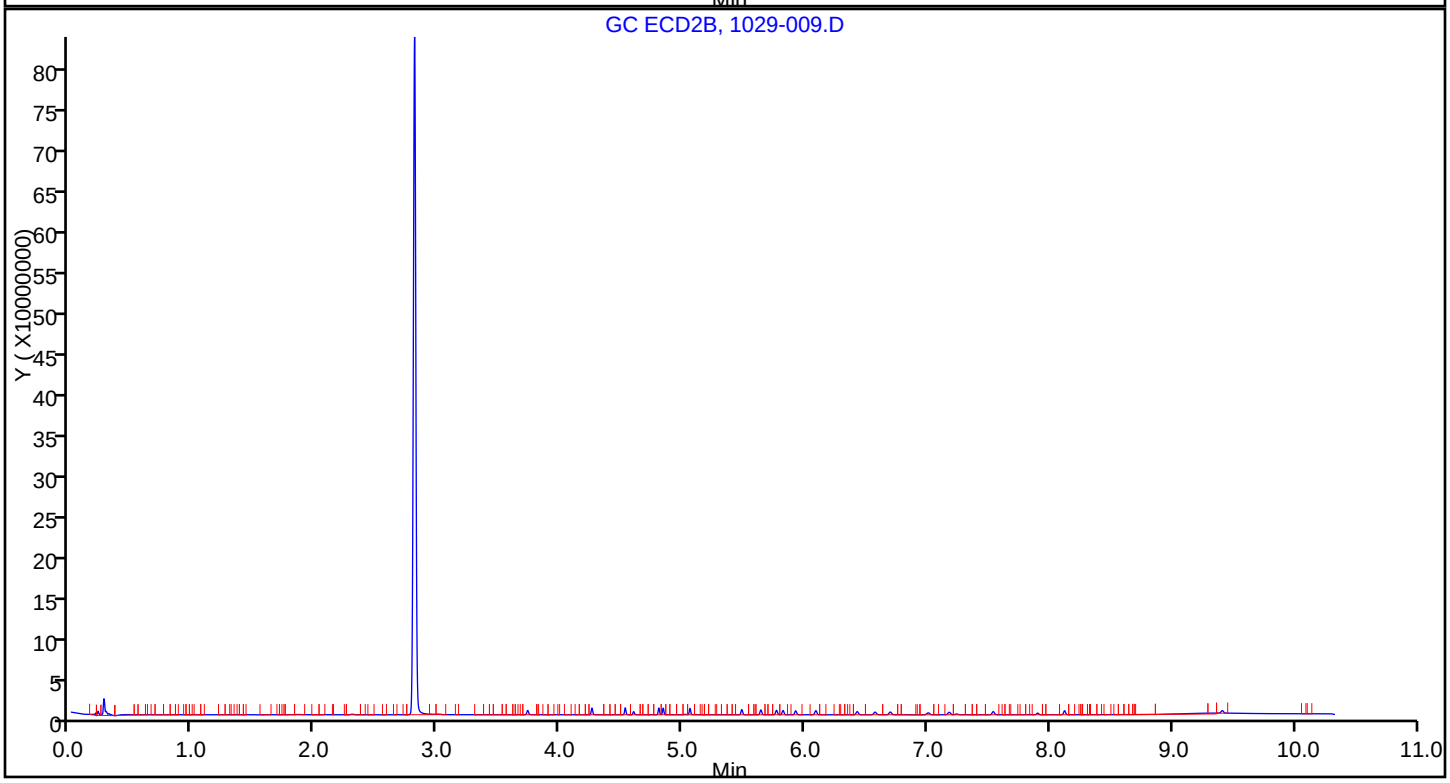
Client ID:

Operator ID: SMH ALS Bottle#: 7 Worklist Smp#: 9

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

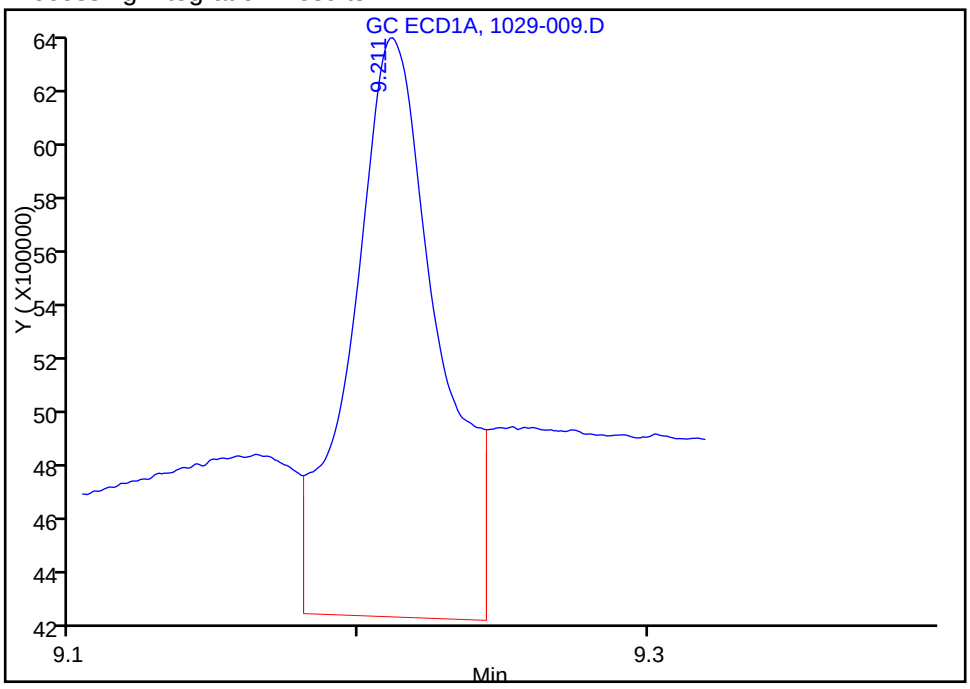
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-009.D				
Injection Date:	29-Oct-2016 14:16:40	Instrument ID:	GC75		
Lims ID:	STD001 PEST L1				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	7	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

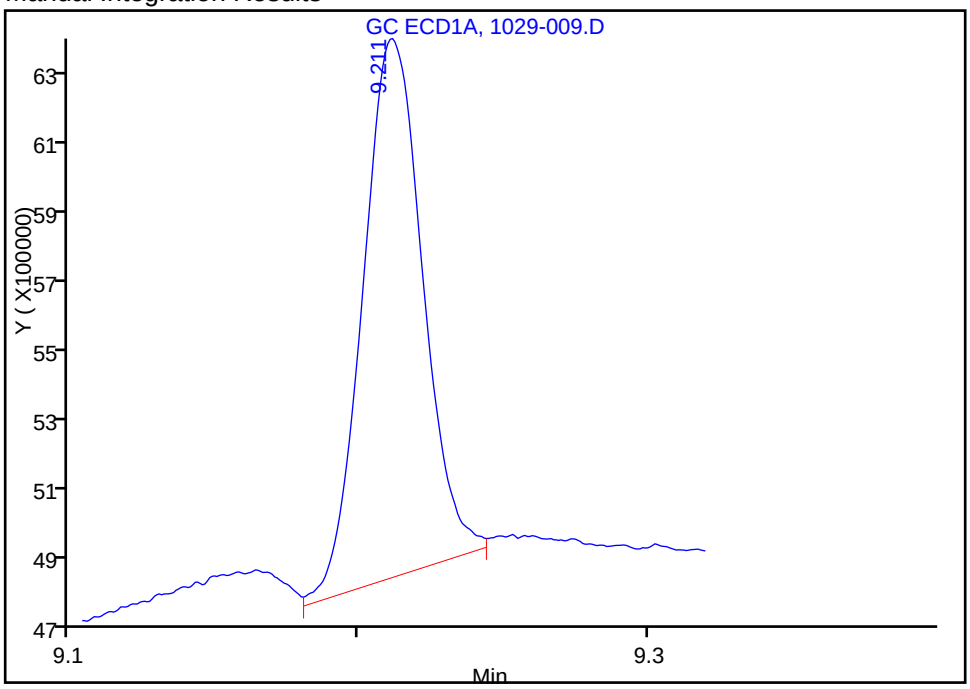
Processing Integration Results

RT: 9.21
Area: 4350434
Amount: 1.613118
Amount Units: ug/l



Manual Integration Results

RT: 9.21
Area: 2199155
Amount: 1.117217
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:27:44
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-010.D
Lims ID: STD002 PEST L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 29-Oct-2016 14:32:22 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L2
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:35:36 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:29:10

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.038	-0.004	531923784	200.0	200.0	
2	2.808	2.809	-0.001	1187312372	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.859	-0.003	4932870	2.00	2.04	
2	3.733	3.733	0.000	10479625	2.00	2.01	
						RPD = 1.31	
11 alpha-BHC							
1	4.342	4.344	-0.002	6306387	2.00	1.77	
2	4.258	4.258	0.000	14056293	2.00	1.79	
						RPD = 1.16	
2 gamma-BHC (Lindane)							
1	4.591	4.594	-0.003	6261729	2.00	1.86	
2	4.530	4.531	-0.001	13496205	2.00	1.83	
						RPD = 1.41	
6 beta-BHC							
1	4.659	4.661	-0.002	3055393	2.00	2.12	
2	4.599	4.599	0.000	6282871	2.00	2.08	
						RPD = 1.76	
18 delta-BHC							
1	4.790	4.793	-0.003	5576676	2.00	1.77	
2	4.805	4.805	0.000	13017544	2.00	1.80	
						RPD = 1.71	
19 Heptachlor							
1	4.946	4.949	-0.003	5871841	2.00	1.87	
2	4.840	4.841	-0.001	12785776	2.00	1.91	
						RPD = 2.13	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.164	-0.002	5938371	2.00	1.89	
2	5.060	5.059	0.001	12567018	2.00	1.89	
						RPD = 0.02	
26 Heptachlor epoxide							
1	5.641	5.644	-0.003	5775527	2.00	2.01	
2	5.482	5.483	-0.001	12017740	2.00	1.98	
						RPD = 1.21	
25 gamma-Chlordane							
1	5.753	5.756	-0.003	5753911	2.00	1.95	
2	5.638	5.639	-0.001	11789482	2.00	1.92	
						RPD = 1.41	
15 alpha-Chlordane							
1	5.875	5.878	-0.003	5741848	2.00	1.99	
2	5.765	5.766	-0.001	11078768	2.00	1.97	
						RPD = 0.61	
16 4,4'-DDE							
1	5.941	5.945	-0.004	5037274	2.00	1.89	
2	5.921	5.923	-0.002	10620176	2.00	1.85	
						RPD = 1.91	
7 Endosulfan I							
1	6.009	6.012	-0.003	5547664	2.00	2.02	
2	5.819	5.820	-0.001	11083783	2.00	1.99	
						RPD = 1.45	
29 Dieldrin							
1	6.260	6.263	-0.003	5648024	2.00	1.94	
2	6.087	6.088	-0.001	11937355	2.00	1.93	
						RPD = 0.37	
13 Endrin							
1	6.528	6.531	-0.003	4699210	2.00	1.95	
2	6.425	6.426	-0.001	10054095	2.00	1.97	
						RPD = 0.80	
12 4,4'-DDD							
1	6.604	6.606	-0.002	4570992	2.00	1.96	
2	6.570	6.572	-0.002	9830241	2.00	1.97	
						RPD = 0.75	
10 Endosulfan II							
1	6.812	6.816	-0.004	4389800	2.00	1.95	
2	6.695	6.696	-0.001	9306887	2.00	1.93	
						RPD = 0.62	
14 4,4'-DDT							M
1	6.984	6.988	-0.004	3320270	2.00	1.75	M
2	7.004	7.006	-0.002	8006209	2.00	1.83	
						RPD = 4.50	
27 Endrin aldehyde							
1	7.378	7.381	-0.003	4208633	2.00	2.06	
2	7.176	7.178	-0.002	8947583	2.00	2.07	
						RPD = 0.39	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.627	7.630	-0.003	2097399	2.00	1.98	
2	7.900	7.901	-0.001	5240097	2.00	2.22	
						RPD = 11.22	
30 Endosulfan sulfate							
1	7.883	7.886	-0.003	4901064	2.00	2.12	
2	7.536	7.537	-0.001	9978445	2.00	2.03	
						RPD = 4.09	
1 Endrin ketone							
1	8.172	8.174	-0.002	5210667	2.00	2.08	
2	8.120	8.121	-0.001	10721299	2.00	2.03	
						RPD = 2.56	
$ 23 DCB Decachlorobiphenyl							M
1	9.210	9.211	-0.001	4183392	2.00	2.10	M
2	9.408	9.409	-0.001	8715646	2.00	2.12	M
						RPD = 1.20	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL2_00012 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:35:38 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-010.D

Injection Date: 29-Oct-2016 14:32:22 Instrument ID: GC75

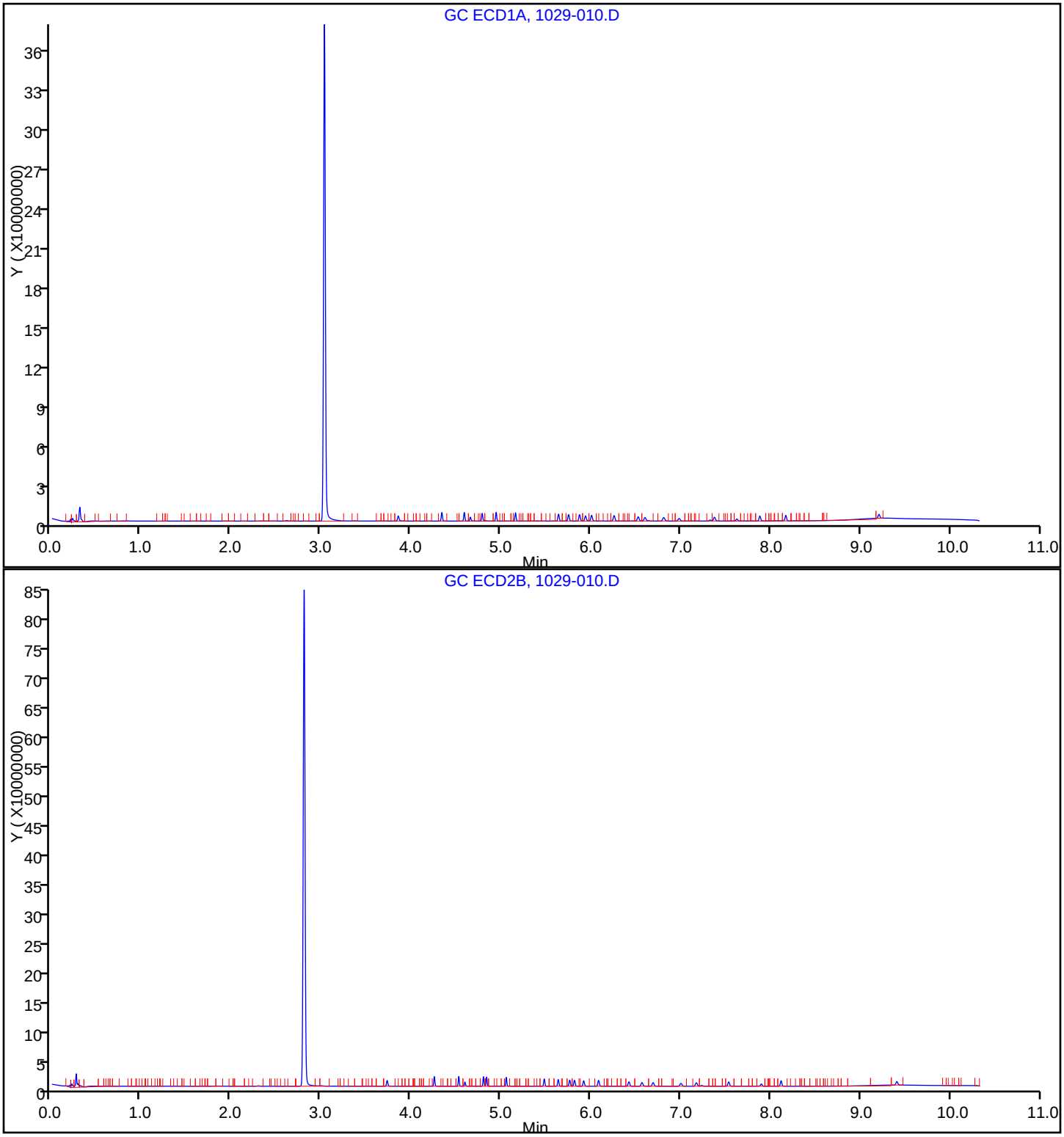
Lims ID: STD002 PEST L2

Client ID:

Operator ID: SMH ALS Bottle#: 8 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

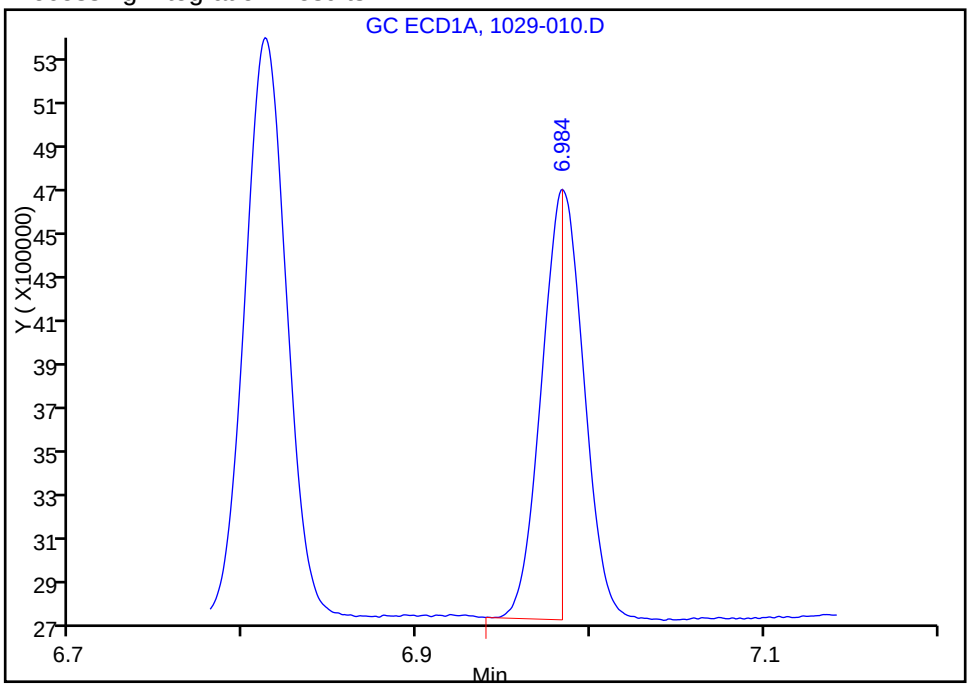
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-010.D
Injection Date: 29-Oct-2016 14:32:22 Instrument ID: GC75
Lims ID: STD002 PEST L2
Client ID:
Operator ID: SMH ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD1A

14 4,4'-DDT, CAS: 50-29-3

Signal: 1

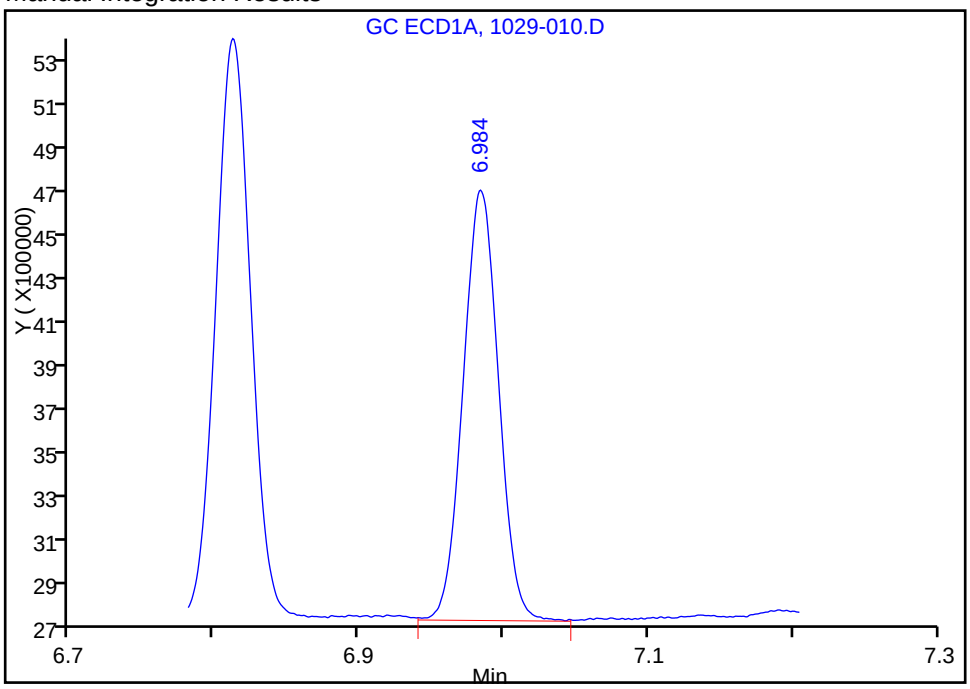
Processing Integration Results

RT: 6.98
Area: 1601256
Amount: 0.902250
Amount Units: ug/l



Manual Integration Results

RT: 6.98
Area: 3320270
Amount: 1.749792
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:29:10
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

TestAmerica Sacramento

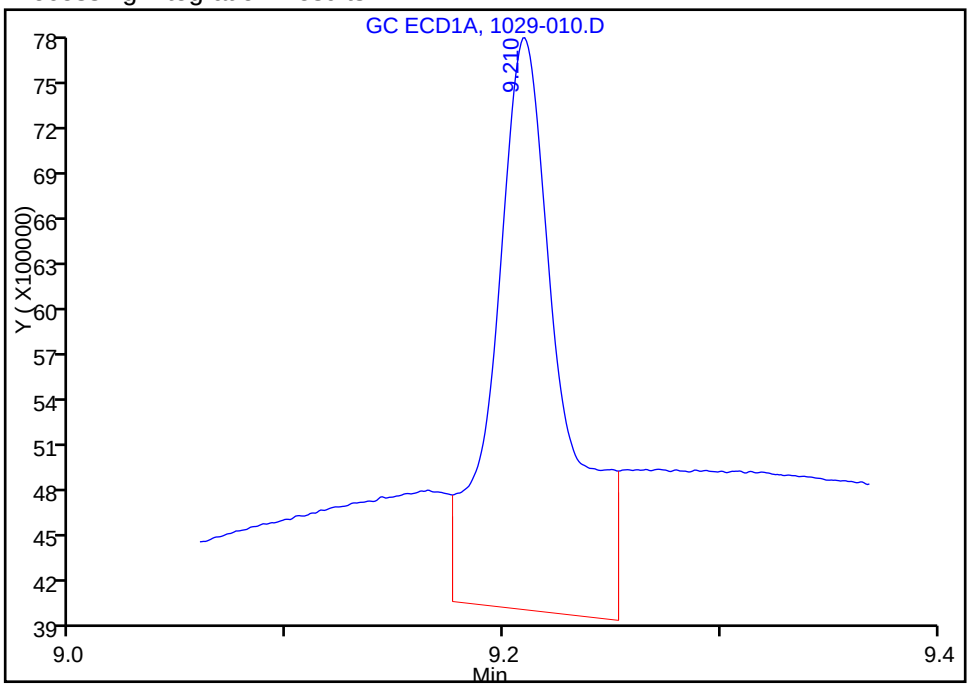
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-010.D
Injection Date: 29-Oct-2016 14:32:22 Instrument ID: GC75
Lims ID: STD002 PEST L2
Client ID:
Operator ID: SMH ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD1A

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

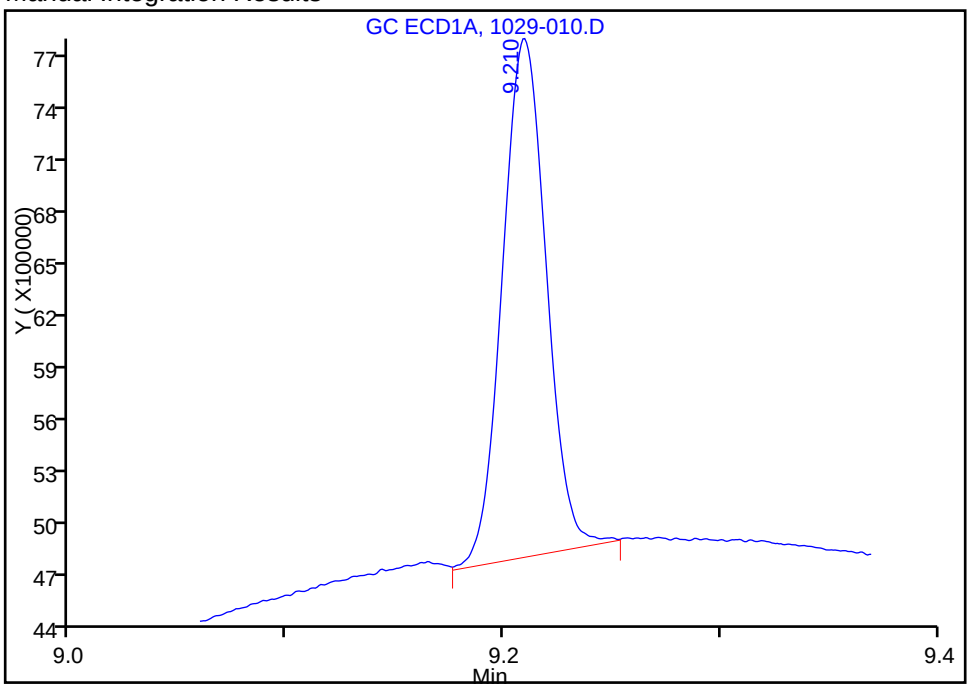
Processing Integration Results

RT: 9.21
Area: 8014693
Amount: 3.307756
Amount Units: ug/l



Manual Integration Results

RT: 9.21
Area: 4183392
Amount: 2.095941
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:29:10
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-011.D
Lims ID: STD003 PEST L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 29-Oct-2016 14:48:03 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L3
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:35:43 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:29:36

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.038	-0.004	526075901	200.0	200.0	
2	2.808	2.809	-0.001	1160635088	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.859	-0.003	11582569	5.00	4.83	
2	3.733	3.733	0.000	24875696	5.00	4.88	
						RPD = 0.95	
11 alpha-BHC							
1	4.342	4.344	-0.002	16246978	5.00	4.61	
2	4.258	4.258	0.000	35636050	5.00	4.64	
						RPD = 0.72	
2 gamma-BHC (Lindane)							
1	4.592	4.594	-0.002	15564968	5.00	4.67	
2	4.530	4.531	-0.001	34033851	5.00	4.72	
						RPD = 1.20	
6 beta-BHC							
1	4.658	4.661	-0.003	7033647	5.00	4.94	
2	4.598	4.599	-0.001	14678578	5.00	4.98	
						RPD = 0.88	
18 delta-BHC							
1	4.790	4.793	-0.003	14145021	5.00	4.53	
2	4.804	4.805	-0.001	33092039	5.00	4.67	
						RPD = 3.10	
19 Heptachlor							
1	4.946	4.949	-0.003	14667971	5.00	4.72	
2	4.840	4.841	-0.001	31784706	5.00	4.86	
						RPD = 2.81	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.164	-0.002	14718557	5.00	4.74	
2	5.059	5.059	0.000	31053582	5.00	4.79	
						RPD = 0.88	
26 Heptachlor epoxide							
1	5.640	5.644	-0.004	13722394	5.00	4.83	
2	5.482	5.483	-0.001	29205657	5.00	4.93	
						RPD = 2.21	
25 gamma-Chlordane							
1	5.753	5.756	-0.003	13776021	5.00	4.72	
2	5.638	5.639	-0.001	28587006	5.00	4.77	
						RPD = 1.03	
15 alpha-Chlordane							
1	5.875	5.878	-0.003	13638939	5.00	4.77	
2	5.765	5.766	-0.001	26588236	5.00	4.85	
						RPD = 1.59	
16 4,4'-DDE							
1	5.941	5.945	-0.004	12155657	5.00	4.61	
2	5.921	5.923	-0.002	26632790	5.00	4.75	
						RPD = 3.10	
7 Endosulfan I							
1	6.009	6.012	-0.003	13073596	5.00	4.82	
2	5.818	5.820	-0.002	26846856	5.00	4.94	
						RPD = 2.46	
29 Dieldrin							
1	6.259	6.263	-0.004	13640260	5.00	4.74	
2	6.086	6.088	-0.002	29345123	5.00	4.86	
						RPD = 2.57	
13 Endrin							
1	6.528	6.531	-0.003	11289724	5.00	4.74	
2	6.425	6.426	-0.001	24406841	5.00	4.89	
						RPD = 3.01	
12 4,4'-DDD							
1	6.603	6.606	-0.003	10948702	5.00	4.75	
2	6.569	6.572	-0.003	23564980	5.00	4.84	
						RPD = 1.99	
10 Endosulfan II							
1	6.811	6.816	-0.005	10001532	5.00	4.48	
2	6.693	6.696	-0.003	21702248	5.00	4.61	
						RPD = 2.87	
14 4,4'-DDT							
1	6.983	6.988	-0.005	8398824	5.00	4.48	
2	7.003	7.006	-0.003	19953632	5.00	4.67	
						RPD = 4.18	
27 Endrin aldehyde							
1	7.376	7.381	-0.005	9837367	5.00	4.86	
2	7.177	7.178	-0.001	21035495	5.00	4.97	
						RPD = 2.13	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.626	7.630	-0.004	5104039	5.00	4.88	
2	7.899	7.901	-0.002	11832299	5.00	5.12	
						RPD = 4.92	
30 Endosulfan sulfate							
1	7.883	7.886	-0.003	11193696	5.00	4.88	
2	7.536	7.537	-0.001	23816797	5.00	4.96	
						RPD = 1.49	
1 Endrin ketone							
1	8.172	8.174	-0.002	12139891	5.00	4.90	
2	8.119	8.121	-0.002	25759794	5.00	4.98	
						RPD = 1.68	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.211	-0.003	9796944	5.00	4.96	M
2	9.408	9.409	-0.001	20421104	5.00	5.08	M
						RPD = 2.41	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL3_00012 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:35:46 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-011.D

Injection Date: 29-Oct-2016 14:48:03 Instrument ID: GC75

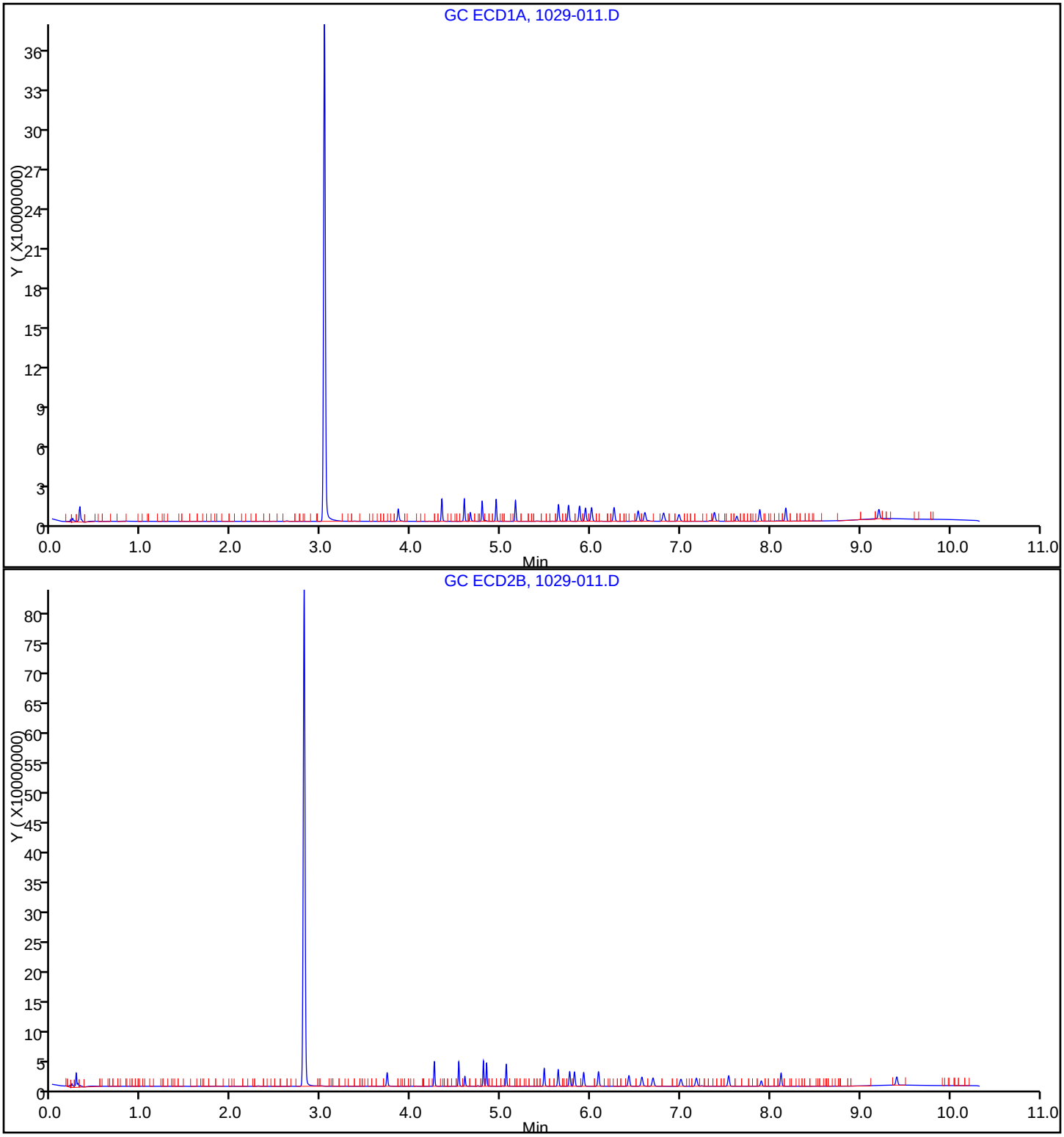
Lims ID: STD003 PEST L3

Client ID:

Operator ID: SMH ALS Bottle#: 9 Worklist Smp#: 11

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

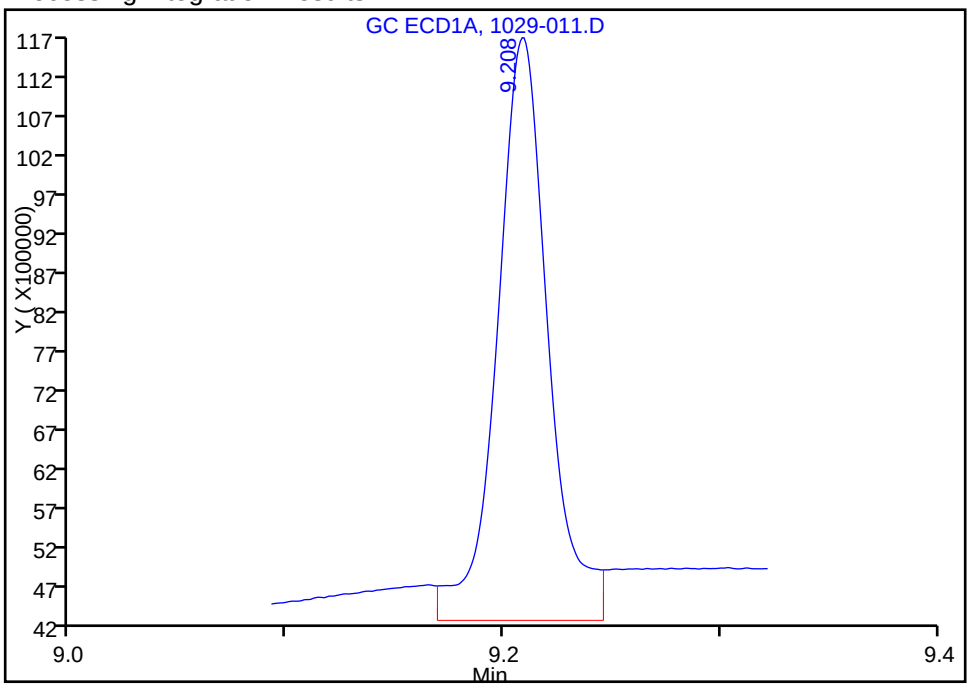
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-011.D
Injection Date: 29-Oct-2016 14:48:03 Instrument ID: GC75
Lims ID: STD003 PEST L3
Client ID:
Operator ID: SMH ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD1A

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

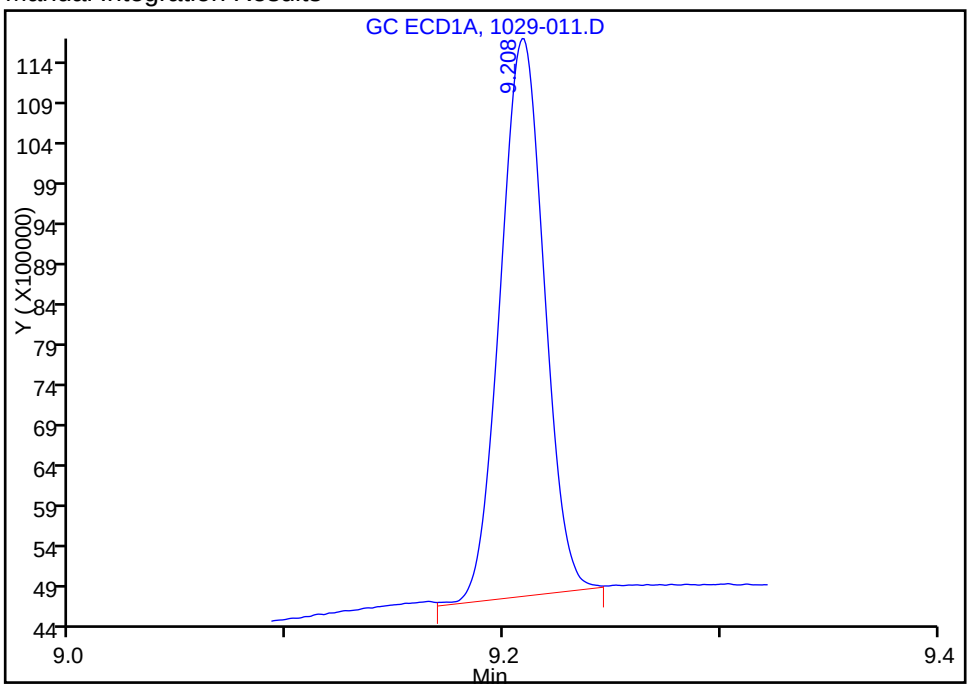
Processing Integration Results

RT: 9.21
Area: 12153186
Amount: 5.717246
Amount Units: ug/l



Manual Integration Results

RT: 9.21
Area: 9796944
Amount: 4.962974
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:29:36
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-012.D
Lims ID: STD004 PEST L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 29-Oct-2016 15:03:45 ALS Bottle#: 10 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L4
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:35:58 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:30:05

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.038	-0.003	526015007	200.0	200.0	
2	2.808	2.809	-0.001	1181192441	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.859	-0.003	22870728	10.0	9.54	
2	3.733	3.733	0.000	49849071	10.0	9.60	
						RPD = 0.66	
11 alpha-BHC							
1	4.341	4.344	-0.003	34483604	10.0	9.78	
2	4.258	4.258	0.000	75280389	10.0	9.63	
						RPD = 1.52	
2 gamma-BHC (Lindane)							
1	4.591	4.594	-0.003	31877544	10.0	9.56	
2	4.531	4.531	0.000	70640460	10.0	9.63	
						RPD = 0.77	
6 beta-BHC							
1	4.659	4.661	-0.002	13495952	10.0	9.48	
2	4.598	4.599	-0.001	28821190	10.0	9.61	
						RPD = 1.42	
18 delta-BHC							
1	4.791	4.793	-0.002	29866008	10.0	9.57	
2	4.805	4.805	0.000	69148436	10.0	9.60	
						RPD = 0.29	
19 Heptachlor							
1	4.946	4.949	-0.003	30297584	10.0	9.75	
2	4.841	4.841	0.000	65013103	10.0	9.76	
						RPD = 0.07	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.164	-0.002	30360504	10.0	9.79	
2	5.060	5.059	0.001	63945984	10.0	9.68	
						RPD = 1.05	
26 Heptachlor epoxide							
1	5.641	5.644	-0.003	27624958	10.0	9.72	
2	5.483	5.483	0.000	58551896	10.0	9.72	
						RPD = 0.03	
25 gamma-Chlordane							
1	5.753	5.756	-0.003	28007386	10.0	9.59	
2	5.638	5.639	-0.001	58241855	10.0	9.54	
						RPD = 0.53	
15 alpha-Chlordane							
1	5.876	5.878	-0.002	27440781	10.0	9.60	
2	5.766	5.766	0.000	53874261	10.0	9.65	
						RPD = 0.53	
16 4,4'-DDE							
1	5.941	5.945	-0.004	25345829	10.0	9.61	
2	5.922	5.923	-0.001	55138772	10.0	9.67	
						RPD = 0.62	
7 Endosulfan I							
1	6.010	6.012	-0.002	26261695	10.0	9.68	
2	5.819	5.820	-0.001	54218945	10.0	9.80	
						RPD = 1.23	
29 Dieldrin							
1	6.260	6.263	-0.003	27608240	10.0	9.59	
2	6.087	6.088	-0.001	59740438	10.0	9.73	
						RPD = 1.38	
13 Endrin							
1	6.529	6.531	-0.002	22597948	10.0	9.49	
2	6.426	6.426	0.000	49407395	10.0	9.72	
						RPD = 2.37	
12 4,4'-DDD							
1	6.603	6.606	-0.003	21992316	10.0	9.53	
2	6.571	6.572	-0.001	47578109	10.0	9.60	
						RPD = 0.74	
10 Endosulfan II							
1	6.811	6.816	-0.005	20492100	10.0	9.18	
2	6.695	6.696	-0.001	45255306	10.0	9.45	
						RPD = 2.86	
14 4,4'-DDT							
1	6.984	6.988	-0.004	17367895	10.0	9.26	
2	7.006	7.006	0.000	41699036	10.0	9.58	
						RPD = 3.47	
27 Endrin aldehyde							
1	7.377	7.381	-0.004	19519516	10.0	9.65	
2	7.177	7.178	-0.001	41918372	10.0	9.73	
						RPD = 0.79	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.626	7.630	-0.004	10000235	10.0	9.56	
2	7.900	7.901	-0.001	22677591	10.0	9.65	
						RPD = 0.95	
30 Endosulfan sulfate							
1	7.882	7.886	-0.004	21998172	10.0	9.60	
2	7.537	7.537	0.000	47245076	10.0	9.66	
						RPD = 0.65	
1 Endrin ketone							
1	8.172	8.174	-0.002	24342829	10.0	9.82	
2	8.120	8.121	-0.001	51529036	10.0	9.79	
						RPD = 0.33	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.211	-0.003	19122824	10.0	9.69	M
2	9.409	9.409	0.000	38920170	10.0	9.52	M
						RPD = 1.74	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL4_00012 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:36:02 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-012.D

Injection Date: 29-Oct-2016 15:03:45 Instrument ID: GC75

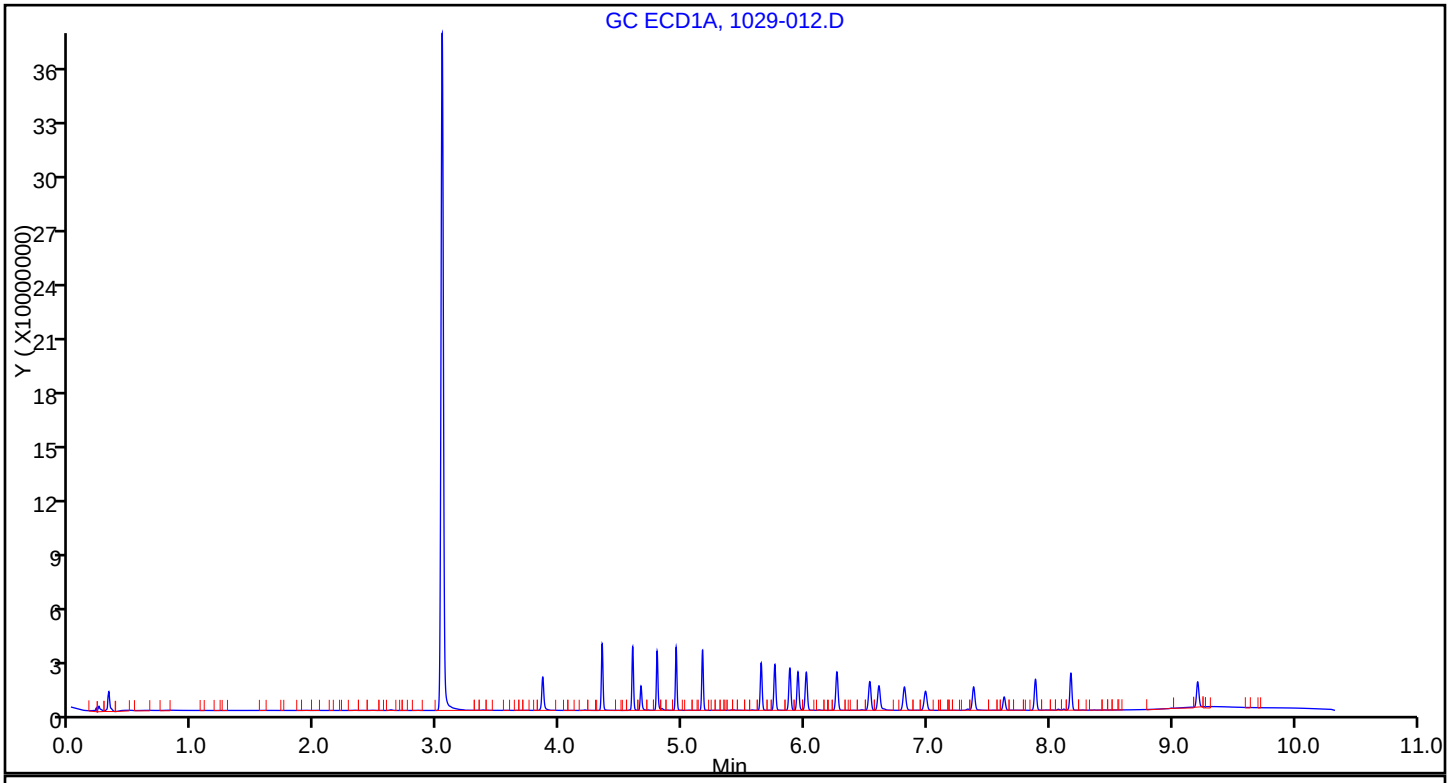
Lims ID: STD004 PEST L4

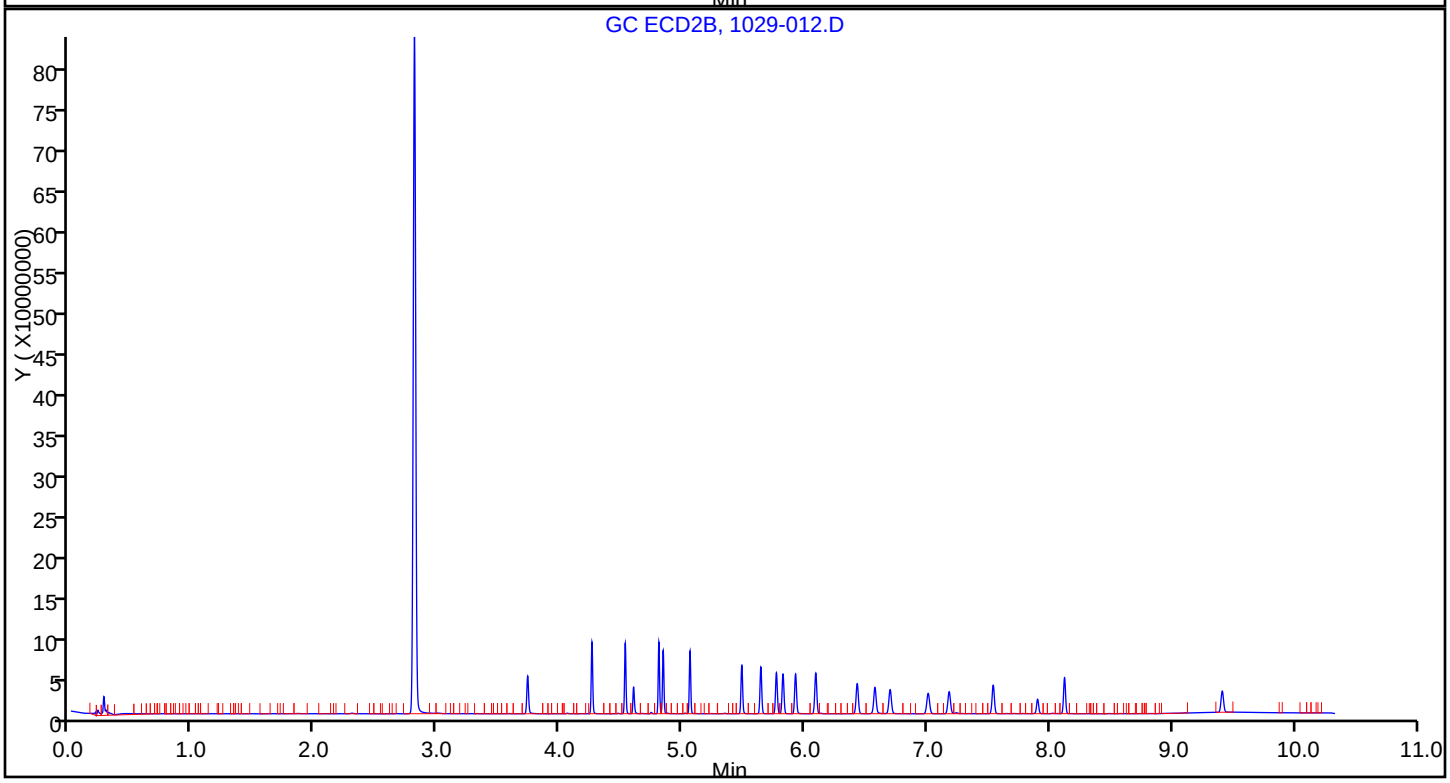
Client ID:

Operator ID: SMH ALS Bottle#: 10 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

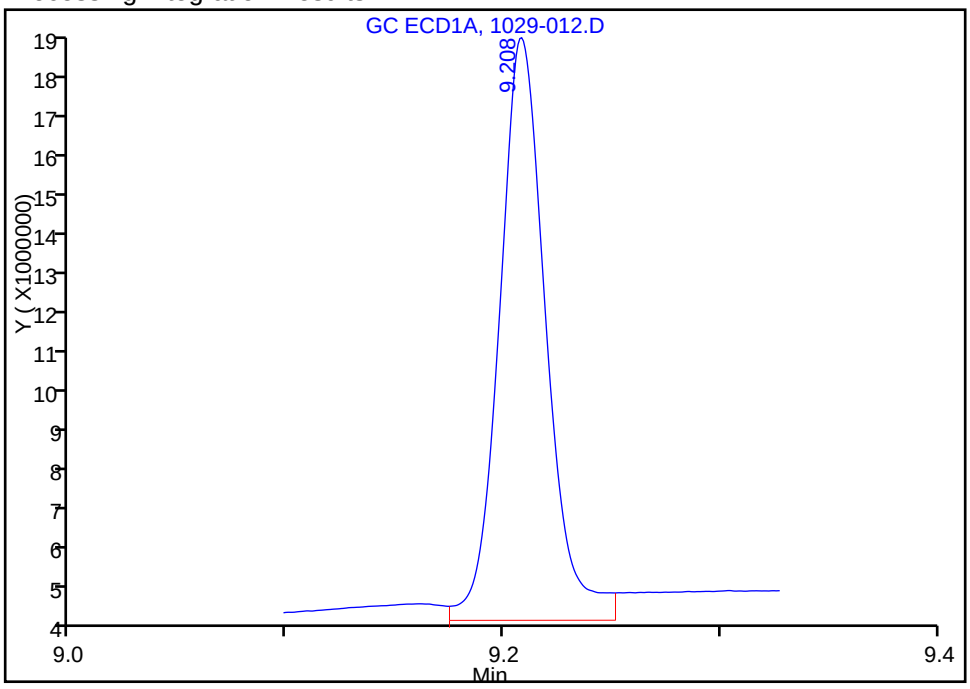
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-012.D
Injection Date: 29-Oct-2016 15:03:45 Instrument ID: GC75
Lims ID: STD004 PEST L4
Client ID:
Operator ID: SMH ALS Bottle#: 10 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD1A

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

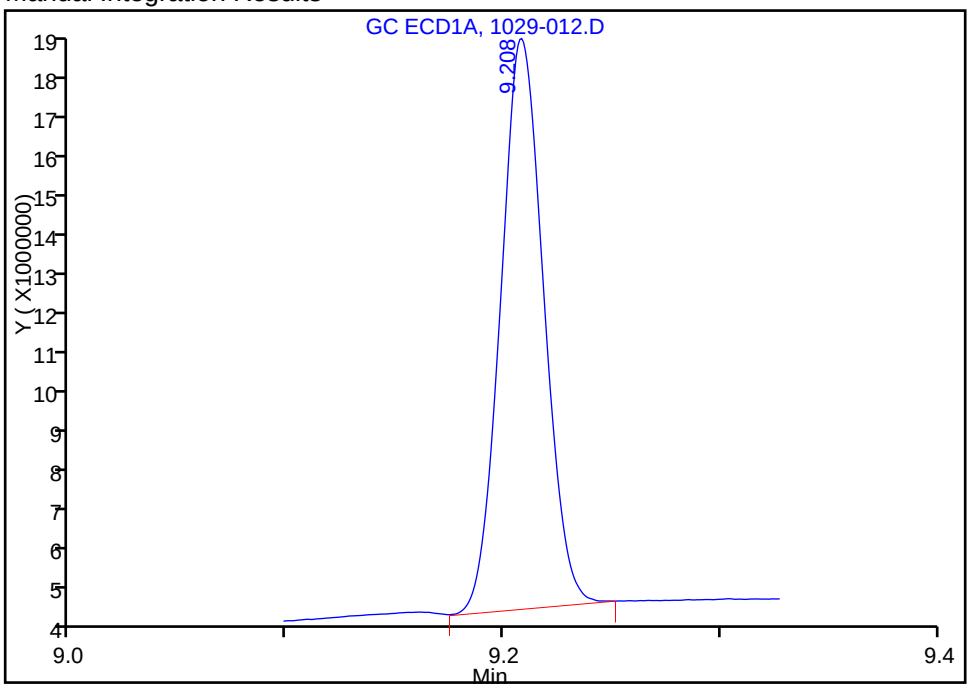
Processing Integration Results

RT: 9.21
Area: 21394955
Amount: 10.395252
Amount Units: ug/l



Manual Integration Results

RT: 9.21
Area: 19122824
Amount: 9.688437
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:30:05
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-013.D
Lims ID: STD005 PEST L5
Client ID:
Sample Type: ICRT Calib Level: 5
Inject. Date: 29-Oct-2016 15:19:25 ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:36:16 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:31:12

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.035	0.000	535337469	200.0	200.0	
2	2.808	2.808	0.000	1197147245	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	45828665	20.0	18.8	
2	3.733	3.733	0.000	99119320	20.0	18.8	
						RPD = 0.30	
11 alpha-BHC							
1	4.342	4.342	0.000	72532871	20.0	20.2	
2	4.258	4.258	0.000	158531025	20.0	20.0	
						RPD = 0.98	
2 gamma-BHC (Lindane)							
1	4.591	4.591	0.000	67133427	20.0	19.8	
2	4.530	4.530	0.000	146199246	20.0	19.7	
						RPD = 0.56	
6 beta-BHC							
1	4.659	4.659	0.000	26398029	20.0	18.2	
2	4.598	4.598	0.000	56183418	20.0	18.5	
						RPD = 1.50	
18 delta-BHC							
1	4.790	4.790	0.000	65152645	20.0	20.5	
2	4.805	4.805	0.000	145345981	20.0	19.9	
						RPD = 3.01	
19 Heptachlor							
1	4.946	4.946	0.000	62795802	20.0	19.9	
2	4.840	4.840	0.000	132439706	20.0	19.6	
						RPD = 1.25	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.162	0.000	62122208	20.0	19.7	
2	5.060	5.060	0.000	130448841	20.0	19.5	
						RPD = 0.94	
26 Heptachlor epoxide							
1	5.640	5.640	0.000	55693100	20.0	19.2	
2	5.482	5.482	0.000	117708468	20.0	19.3	
						RPD = 0.16	
25 gamma-Chlordane							
1	5.752	5.752	0.000	57310969	20.0	19.3	
2	5.638	5.638	0.000	120409705	20.0	19.5	
						RPD = 0.92	
15 alpha-Chlordane							
1	5.875	5.875	0.000	55664223	20.0	19.1	
2	5.765	5.765	0.000	108032399	20.0	19.1	
						RPD = 0.21	
16 4,4'-DDE							
1	5.941	5.941	0.000	53174243	20.0	19.8	
2	5.921	5.921	0.000	114025774	20.0	19.7	
						RPD = 0.40	
7 Endosulfan I							
1	6.009	6.009	0.000	52611595	20.0	19.1	
2	5.819	5.819	0.000	107837745	20.0	19.2	
						RPD = 0.93	
29 Dieldrin							
1	6.260	6.260	0.000	57320456	20.0	19.6	
2	6.087	6.087	0.000	122030459	20.0	19.6	
						RPD = 0.17	
13 Endrin							
1	6.528	6.528	0.000	47291556	20.0	19.5	
2	6.425	6.425	0.000	99888410	20.0	19.4	
						RPD = 0.67	
12 4,4'-DDD							
1	6.603	6.603	0.000	45608518	20.0	19.4	
2	6.570	6.570	0.000	96403447	20.0	19.2	
						RPD = 1.17	
10 Endosulfan II							
1	6.811	6.811	0.000	45795745	20.0	20.2	
2	6.694	6.694	0.000	98272366	20.0	20.2	
						RPD = 0.40	
14 4,4'-DDT							
1	6.984	6.984	0.000	38200010	20.0	20.0	
2	7.005	7.005	0.000	86959410	20.0	19.7	
						RPD = 1.44	
27 Endrin aldehyde							
1	7.376	7.376	0.000	39056582	20.0	19.0	
2	7.176	7.176	0.000	82690283	20.0	18.9	
						RPD = 0.21	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.627	7.627	0.000	20766481	20.0	19.5	
2	7.900	7.900	0.000	45025492	20.0	18.9	
						RPD = 3.12	
30 Endosulfan sulfate							
1	7.882	7.882	0.000	43265455	20.0	18.6	
2	7.536	7.536	0.000	94005543	20.0	19.0	
						RPD = 2.23	
1 Endrin ketone							
1	8.172	8.172	0.000	48512936	20.0	19.2	
2	8.119	8.119	0.000	102383053	20.0	19.2	
						RPD = 0.21	
$ 23 DCB Decachlorobiphenyl							M
1	9.209	9.209	0.000	37598611	20.0	18.7	M
2	9.408	9.408	0.000	77817606	20.0	18.8	M
						RPD = 0.35	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

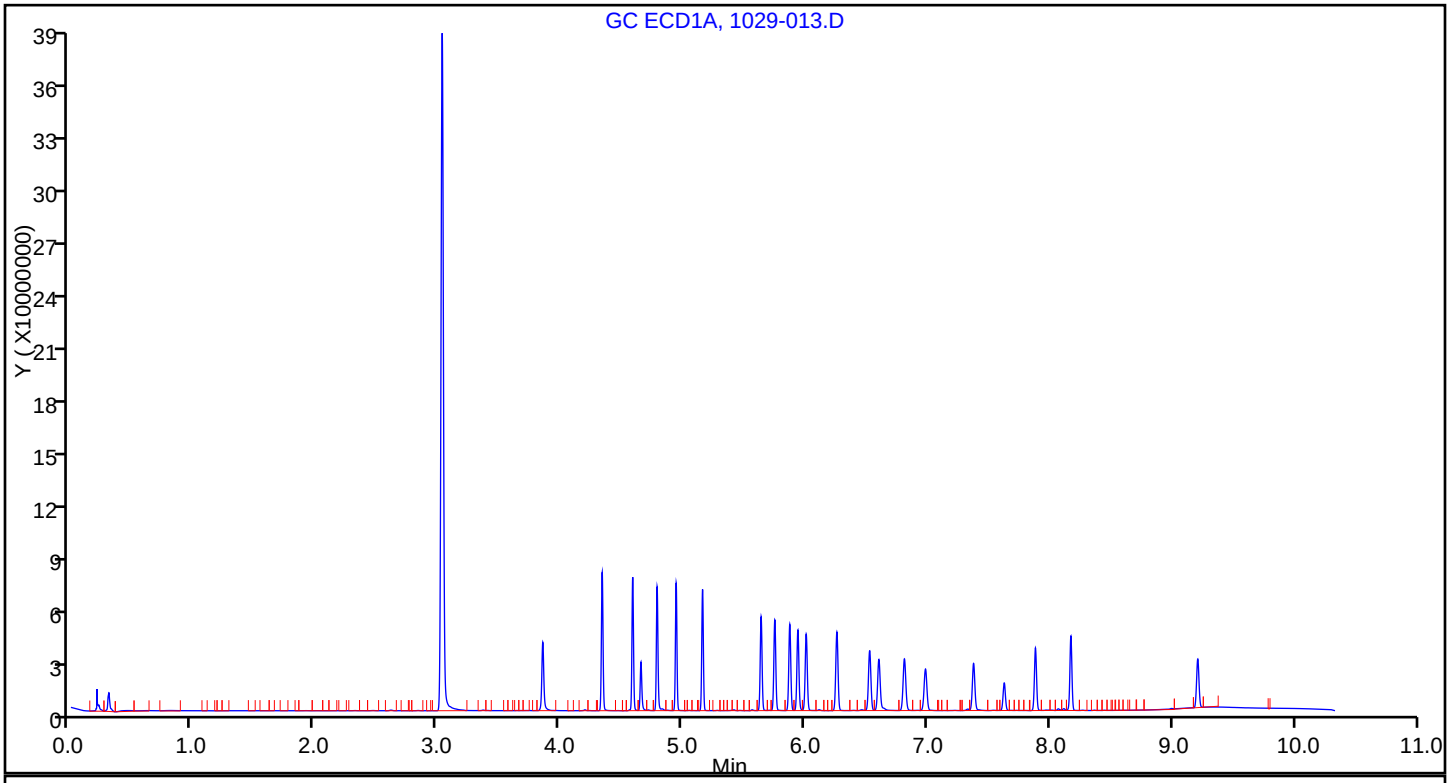
GCPESTL5_00012 Amount Added: 1.00 Units: mL

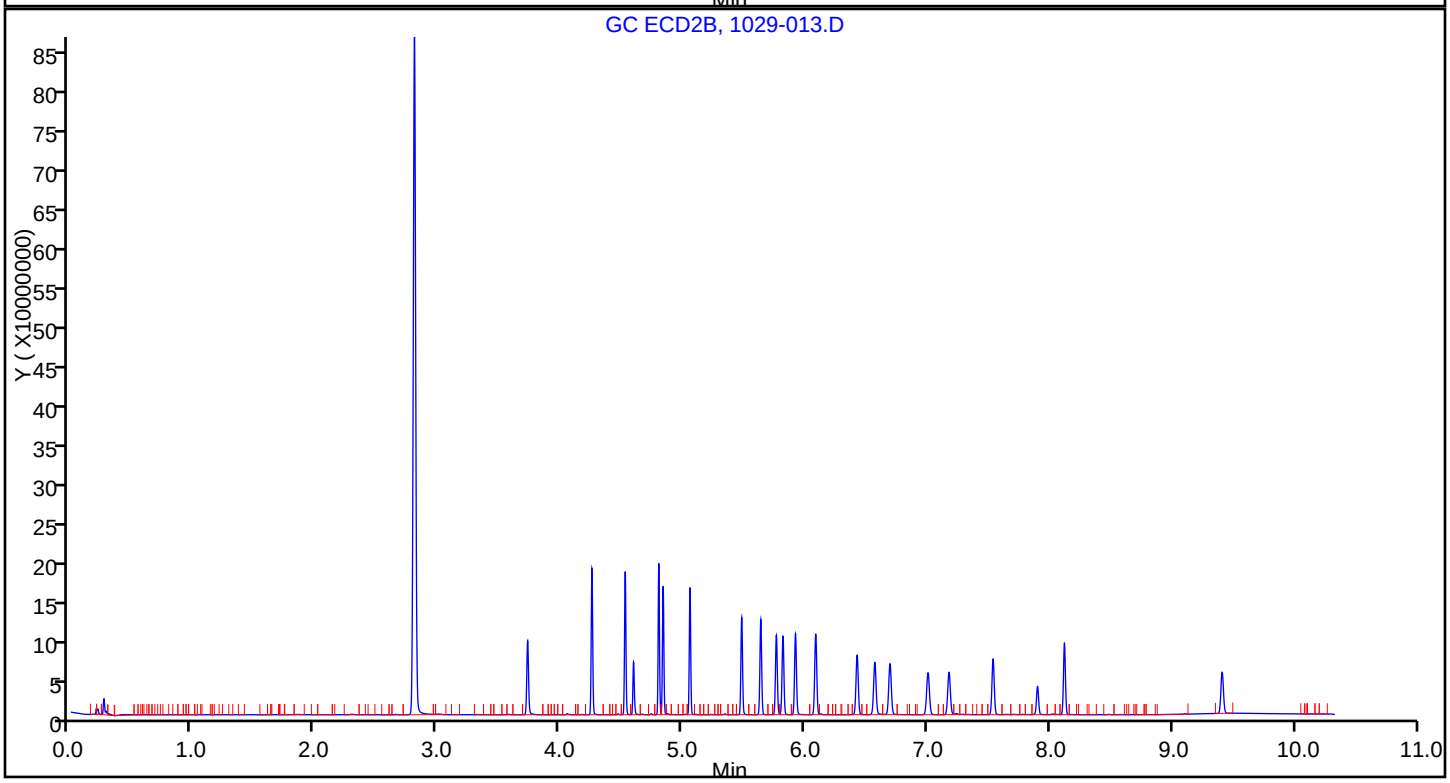
Report Date: 31-Oct-2016 08:36:17 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-013.D

Injection Date:	29-Oct-2016 15:19:25	Instrument ID:	GC75		
Lims ID:	STD005 PEST L5				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	11	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

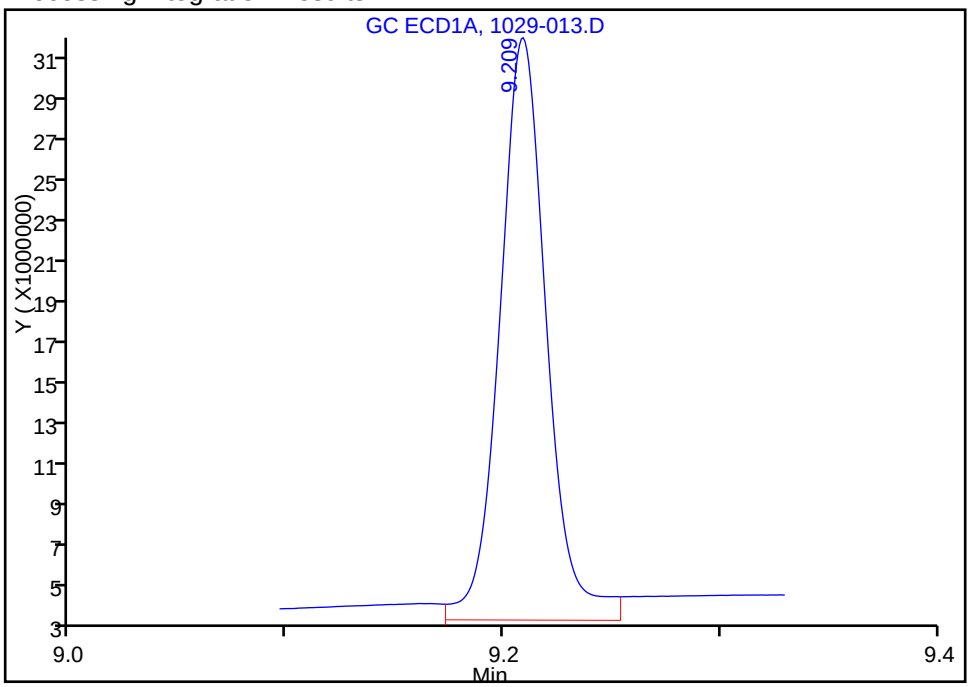
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-013.D
Injection Date: 29-Oct-2016 15:19:25 Instrument ID: GC75
Lims ID: STD005 PEST L5
Client ID:
Operator ID: SMH ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD1A

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

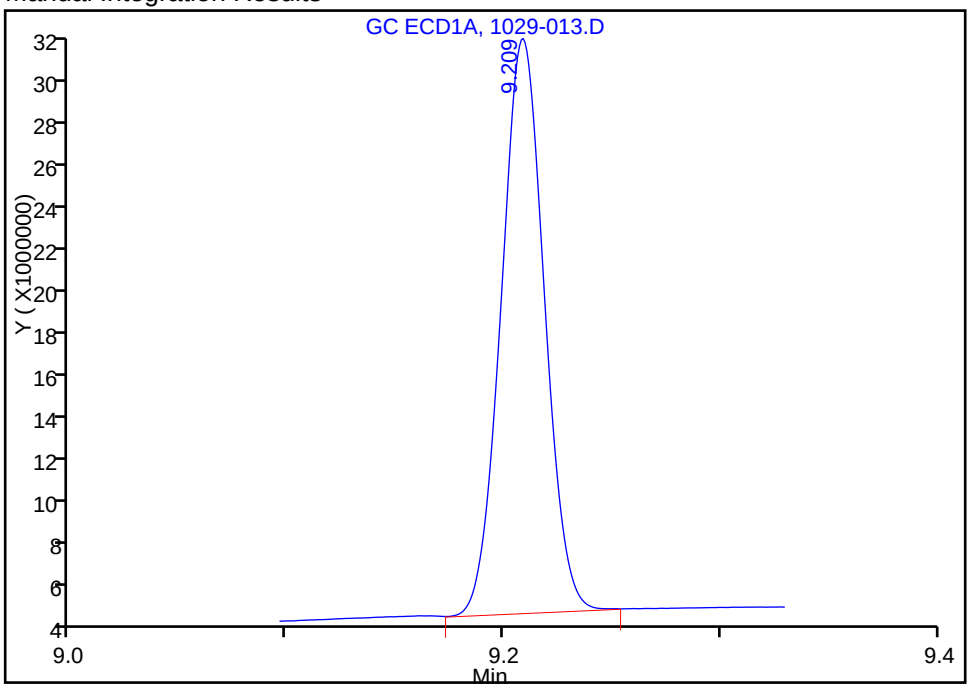
Processing Integration Results

RT: 9.21
Area: 42042339
Amount: 20.393174
Amount Units: ug/l



Manual Integration Results

RT: 9.21
Area: 37598611
Amount: 18.717333
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:31:12
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-014.D
Lims ID: STD006 PEST L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 29-Oct-2016 15:35:08 ALS Bottle#: 12 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-0036262-014
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:36:24 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:31:39

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.035	-0.001	522924803	200.0	200.0	
2	2.807	2.808	-0.001	1170669450	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	116849587	50.0	49.0	
2	3.733	3.733	0.000	257483646	50.0	50.1	
						RPD = 2.06	
11 alpha-BHC							
1	4.342	4.342	0.000	196594808	50.0	56.1	
2	4.258	4.258	0.000	433261824	50.0	55.9	
						RPD = 0.27	
2 gamma-BHC (Lindane)							
1	4.592	4.591	0.001	178343478	50.0	53.8	
2	4.530	4.530	0.000	396241896	50.0	54.5	
						RPD = 1.33	
6 beta-BHC							
1	4.659	4.659	0.000	66073273	50.0	46.7	
2	4.598	4.598	0.000	142980086	50.0	48.1	
						RPD = 3.05	
18 delta-BHC							
1	4.791	4.790	0.001	170726290	50.0	55.0	
2	4.804	4.805	-0.001	395707041	50.0	55.4	
						RPD = 0.70	
19 Heptachlor							
1	4.947	4.946	0.001	163125870	50.0	52.8	
2	4.840	4.840	0.000	350170801	50.0	53.0	
						RPD = 0.41	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.162	0.000	161512168	50.0	52.4	
2	5.059	5.060	-0.001	348834698	50.0	53.3	
						RPD = 1.76	
26 Heptachlor epoxide							
1	5.641	5.640	0.001	141929610	50.0	50.2	
2	5.482	5.482	0.000	302215213	50.0	50.6	
						RPD = 0.80	
25 gamma-Chlordane							
1	5.753	5.752	0.001	150203585	50.0	51.7	
2	5.638	5.638	0.000	321172703	50.0	53.1	
						RPD = 2.56	
15 alpha-Chlordane							
1	5.875	5.875	0.000	144167902	50.0	50.7	
2	5.765	5.765	0.000	290809887	50.0	52.6	
						RPD = 3.54	
16 4,4'-DDE							
1	5.941	5.941	0.000	140747870	50.0	53.7	
2	5.922	5.921	0.001	305902451	50.0	54.1	
						RPD = 0.83	
7 Endosulfan I							
1	6.009	6.009	0.000	134527265	50.0	49.9	
2	5.819	5.819	0.000	279256806	50.0	50.9	
						RPD = 2.08	
29 Dieldrin							
1	6.259	6.260	-0.001	148766628	50.0	52.0	
2	6.087	6.087	0.000	319150177	50.0	52.4	
						RPD = 0.83	
13 Endrin							
1	6.529	6.528	0.001	123446049	50.0	52.2	
2	6.425	6.425	0.000	264173870	50.0	52.4	
						RPD = 0.53	
12 4,4'-DDD							
1	6.603	6.603	0.000	117790142	50.0	51.4	
2	6.570	6.570	0.000	250519900	50.0	51.0	
						RPD = 0.66	
10 Endosulfan II							
1	6.812	6.811	0.001	112403552	50.0	50.7	
2	6.694	6.694	0.000	238991600	50.0	50.3	
						RPD = 0.63	
14 4,4'-DDT							
1	6.984	6.984	0.000	107013536	50.0	57.4	
2	7.004	7.005	-0.001	237517383	50.0	55.1	
						RPD = 4.08	
27 Endrin aldehyde							
1	7.377	7.376	0.001	97646117	50.0	48.6	
2	7.176	7.176	0.000	208765977	50.0	48.9	
						RPD = 0.66	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.627	7.627	0.000	53481063	50.0	51.4	
2	7.899	7.900	-0.001	110249688	50.0	47.3	
						RPD = 8.28	
30 Endosulfan sulfate							
1	7.883	7.882	0.001	109226992	50.0	47.9	
2	7.536	7.536	0.000	240695208	50.0	49.7	
						RPD = 3.53	
1 Endrin ketone							
1	8.173	8.172	0.001	120968296	50.0	49.1	
2	8.119	8.119	0.000	259482411	50.0	49.7	
						RPD = 1.31	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.209	-0.001	93273503	50.0	47.5	M
2	9.408	9.408	0.000	196162702	50.0	48.4	M
						RPD = 1.84	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL6_00013 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:36:26 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-014.D

Injection Date: 29-Oct-2016 15:35:08 Instrument ID: GC75

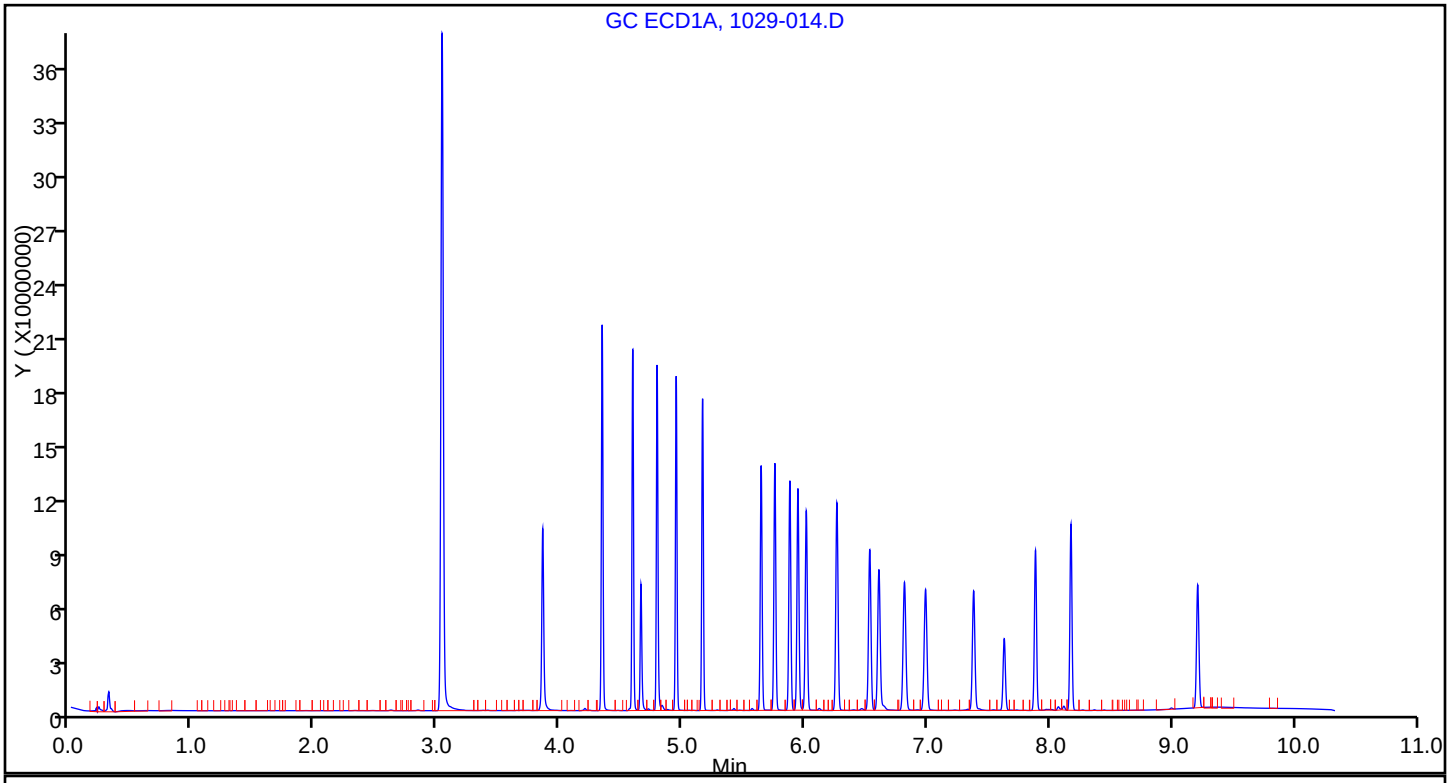
Lims ID: STD006 PEST L6

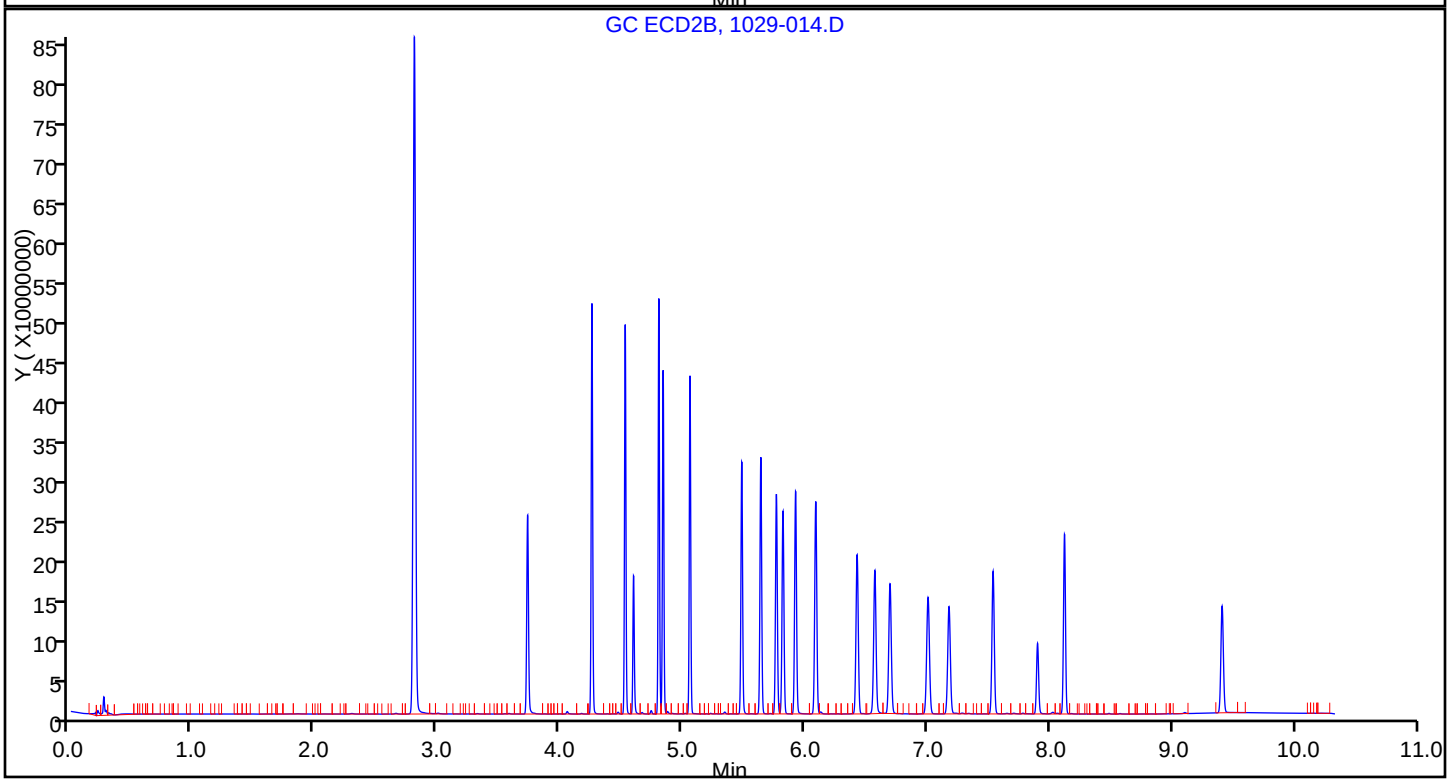
Client ID:

Operator ID: SMH ALS Bottle#: 12 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

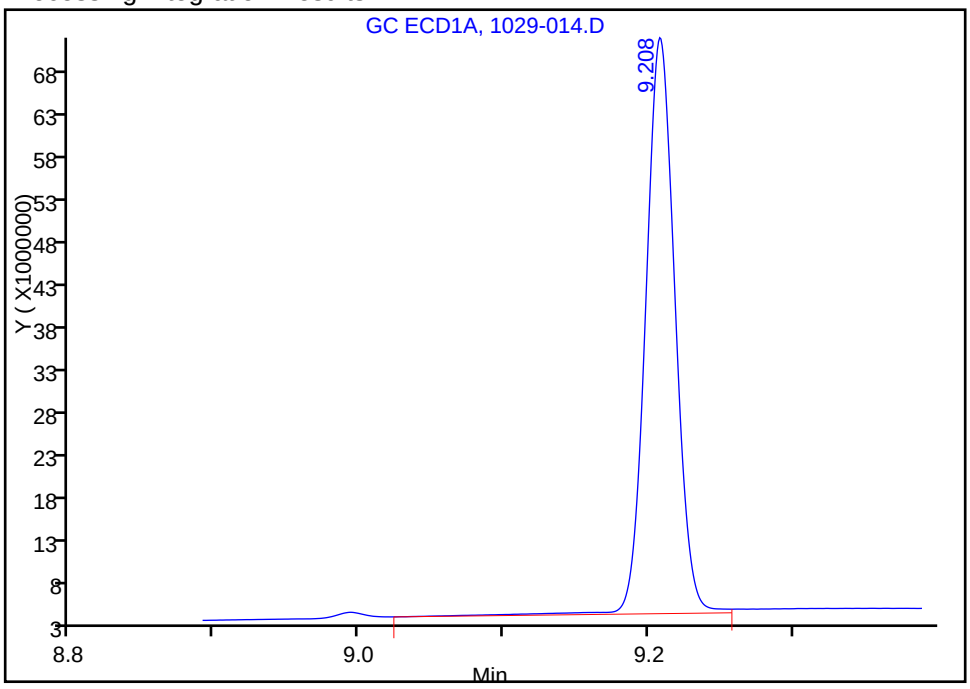
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-014.D
Injection Date: 29-Oct-2016 15:35:08 Instrument ID: GC75
Lims ID: STD006 PEST L6
Client ID:
Operator ID: SMH ALS Bottle#: 12 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD1A

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

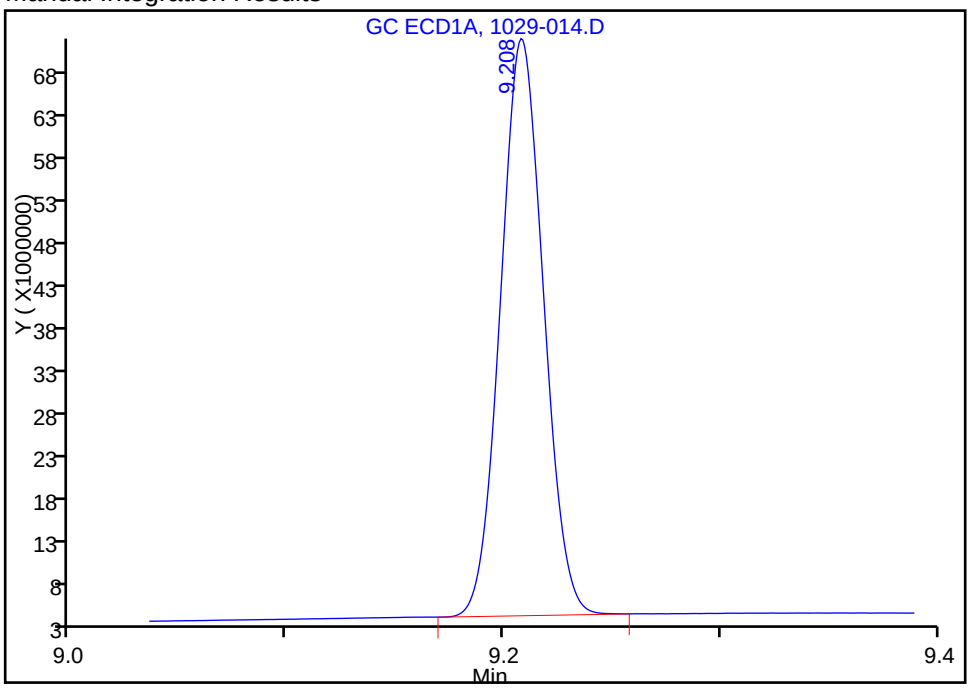
Processing Integration Results

RT: 9.21
Area: 95986234
Amount: 48.409865
Amount Units: ug/l



Manual Integration Results

RT: 9.21
Area: 93273503
Amount: 47.535586
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:31:39
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D
Lims ID: STD007 PEST L7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 29-Oct-2016 15:50:50 ALS Bottle#: 13 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-0036262-015
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:36:31 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:33:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.035	0.001	520005491	200.0	200.0	
2	2.808	2.808	0.001	1182954755	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.857	3.856	0.001	246546848	100.0	104.0	
2	3.733	3.733	0.000	538403207	100.0	103.6	
						RPD = 0.45	
11 alpha-BHC							
1	4.343	4.342	0.001	411807304	100.0	118.1	
2	4.258	4.258	0.000	925462604	100.0	118.2	
						RPD = 0.08	
2 gamma-BHC (Lindane)							
1	4.592	4.591	0.001	381242272	100.0	115.7	
2	4.531	4.530	0.001	856343375	100.0	116.6	
						RPD = 0.82	
6 beta-BHC							
1	4.659	4.659	0.000	137749828	100.0	97.8	
2	4.598	4.598	0.000	296810839	100.0	98.8	
						RPD = 1.02	
18 delta-BHC							
1	4.791	4.790	0.001	359044709	100.0	116.4	
2	4.805	4.805	0.000	852495346	100.0	118.1	
						RPD = 1.51	
19 Heptachlor							
1	4.947	4.946	0.001	345123231	100.0	112.4	
2	4.840	4.840	0.000	710791806	100.0	106.5	
						RPD = 5.34	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.162	0.000	340049282	100.0	110.9	
2	5.060	5.060	0.000	723567586	100.0	109.4	
						RPD = 1.33	
26 Heptachlor epoxide							
1	5.641	5.640	0.001	289154710	100.0	102.9	
2	5.483	5.482	0.001	612480840	100.0	101.5	
						RPD = 1.33	
25 gamma-Chlordane							
1	5.753	5.752	0.001	316078369	100.0	109.5	
2	5.638	5.638	0.000	662886894	100.0	108.4	
						RPD = 0.98	
15 alpha-Chlordane							
1	5.875	5.875	0.000	301681856	100.0	106.8	
2	5.765	5.765	0.000	571767939	100.0	102.3	
						RPD = 4.29	
16 4,4'-DDE							
1	5.941	5.941	0.000	294256733	100.0	112.9	
2	5.922	5.921	0.001	650342694	100.0	113.9	
						RPD = 0.91	
7 Endosulfan I							
1	6.009	6.009	0.000	273853676	100.0	102.1	
2	5.819	5.819	0.000	558505416	100.0	100.8	
						RPD = 1.29	
29 Dieldrin							
1	6.260	6.260	0.000	308007045	100.0	108.3	
2	6.088	6.087	0.001	656446934	100.0	106.7	
						RPD = 1.43	
13 Endrin							
1	6.528	6.528	0.000	254601814	100.0	108.2	
2	6.426	6.425	0.001	519980818	100.0	102.1	
						RPD = 5.74	
12 4,4'-DDD							
1	6.603	6.603	0.000	247836686	100.0	108.7	
2	6.570	6.570	0.000	531764792	100.0	107.2	
						RPD = 1.38	
10 Endosulfan II							
1	6.812	6.811	0.001	238444451	100.0	108.1	
2	6.693	6.694	-0.001	507364664	100.0	105.8	
						RPD = 2.16	
14 4,4'-DDT							
1	6.985	6.984	0.001	235094443	100.0	126.7	
2	7.004	7.005	-0.001	514064249	100.0	118.0	
						RPD = 7.17	
27 Endrin aldehyde							
1	7.377	7.376	0.001	200013594	100.0	100.0	
2	7.176	7.176	0.000	418739887	100.0	97.0	
						RPD = 3.05	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.627	7.627	0.000	108798461	100.0	105.2	
2	7.899	7.900	-0.001	217550410	100.0	92.4	
						RPD = 12.92	
30 Endosulfan sulfate							
1	7.882	7.882	0.000	225606957	100.0	99.6	
2	7.536	7.536	0.000	498065808	100.0	101.7	
						RPD = 2.11	
1 Endrin ketone							
1	8.173	8.172	0.001	248704995	100.0	101.5	
2	8.120	8.119	0.001	529317204	100.0	100.4	
						RPD = 1.08	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.209	-0.001	192546466	100.0	98.7	M
2	9.409	9.408	0.001	394758829	100.0	96.4	M
						RPD = 2.31	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL7_00013 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:36:33 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Injection Date: 29-Oct-2016 15:50:50 Instrument ID: GC75

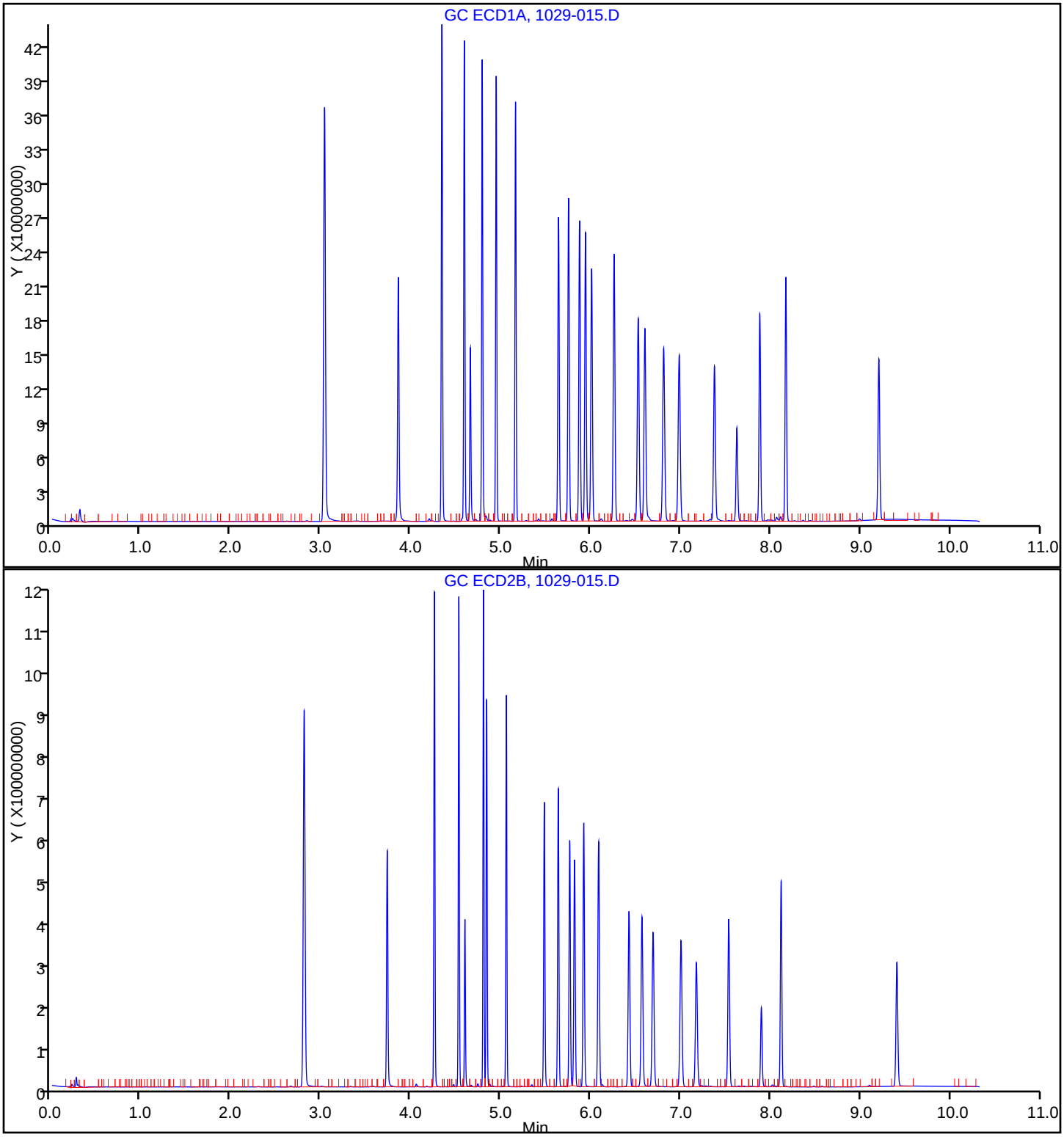
Lims ID: STD007 PEST L7

Client ID:

Operator ID: SMH ALS Bottle#: 13 Worklist Smp#: 15

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

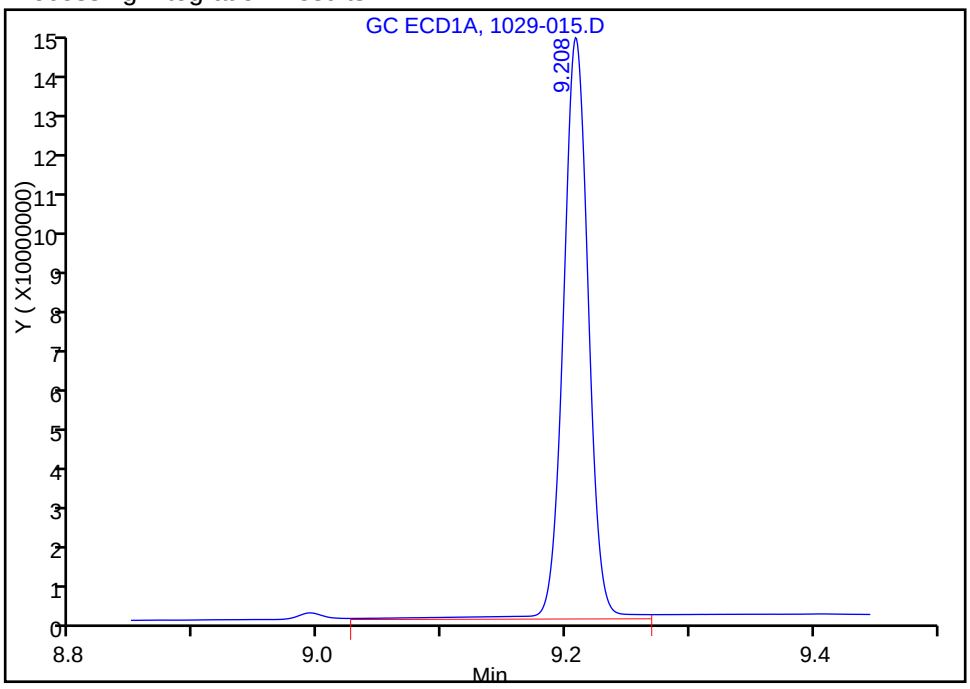
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D
Injection Date: 29-Oct-2016 15:50:50 Instrument ID: GC75
Lims ID: STD007 PEST L7
Client ID:
Operator ID: SMH ALS Bottle#: 13 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD1A

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

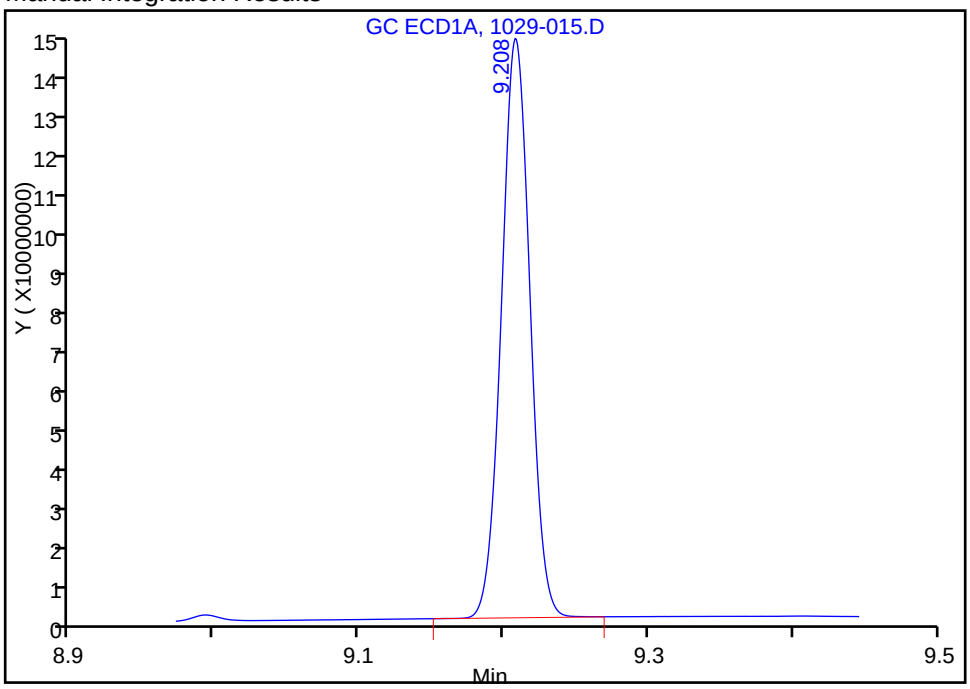
Processing Integration Results

RT: 9.21
Area: 201490711
Amount: 102.5917
Amount Units: ug/l



Manual Integration Results

RT: 9.21
Area: 192546466
Amount: 98.679612
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:33:33
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 135054

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP II ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/29/2016 14:16 Calibration End Date: 10/29/2016 15:50 Calibration ID: 26307

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 320-135054/9	1029-009.D
Level 2	STD002 320-135054/10	1029-010.D
Level 3	STD003 320-135054/11	1029-011.D
Level 4	STD004 320-135054/12	1029-012.D
Level 5	STD005 320-135054/13	1029-013.D
Level 6	STD006 320-135054/14	1029-014.D
Level 7	STD007 320-135054/15	1029-015.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
alpha-BHC	1.2089 1.4804	1.1839 1.5647	1.2282	1.2747	1.3242	Ave		1.3236				11.0		20.0			
gamma-BHC (Lindane)	1.1628 1.3539	1.1367 1.4478	1.1729	1.1961	1.2212	Ave		1.2416				9.3		20.0			
beta-BHC	0.5711 0.4885	0.5292 0.5018	0.5059	0.4880	0.4693	Ave		0.5077				6.6		20.0			
delta-BHC	1.1254 1.3521	1.0964 1.4413	1.1405	1.1708	1.2141	Ave		1.2201				10.6		20.0			
Heptachlor	1.1192 1.1965	1.0769 1.2017	1.0954	1.1008	1.1063	Ave		1.1281				4.4		20.0			
Aldrin	1.1111 1.1919	1.0584 1.2233	1.0702	1.0827	1.0897	Ave		1.1182				5.7		20.0			
Heptachlor epoxide	1.0794 1.0326	1.0122 1.0355	1.0065	0.9914	0.9832	Ave		1.0201				3.2		20.0			
gamma-Chlordane	1.0475 1.0974	0.9930 1.1207	0.9852	0.9862	1.0058	Ave		1.0337				5.4		20.0			
alpha-Chlordane	0.9917 0.9937	0.9331 0.9667	0.9163	0.9122	0.9024	Ave		0.9452				4.1		20.0			
Endosulfan I	0.9814 0.9542	0.9335 0.9443	0.9252	0.9180	0.9008	Ave		0.9368				2.8		20.0			
4,4'-DDE	0.9155 1.0452	0.8945 1.0995	0.9179	0.9336	0.9525	Ave		0.9655				7.9		20.0			
Dieldrin	1.0314 1.0905	1.0054 1.1098	1.0113	1.0115	1.0193	Ave		1.0399				4.1		20.0			
Endrin	0.8848 0.9026	0.8468 0.8791	0.8412	0.8366	0.8344	Ave		0.8608				3.2		20.0			
4,4'-DDD	0.8654 0.8560	0.8279 0.8990	0.8121	0.8056	0.8053	Ave		0.8388				4.3		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 135054

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP II ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/29/2016 14:16 Calibration End Date: 10/29/2016 15:50 Calibration ID: 26307

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Endosulfan II	0.8831 0.8166	0.7839 0.8578	0.7479	0.7663	0.8209	Ave		0.8109				6.0		20.0			
4,4'-DDT	0.6826 0.8116	0.6743 0.8691	0.6877	0.7060	0.7264	Ave		0.7368				10.1		20.0			
Endrin aldehyde	0.8074 0.7133	0.7536 0.7080	0.7250	0.7098	0.6907	Ave		0.7297				5.4		20.0			
Endosulfan sulfate	0.8840 0.8224	0.8404 0.8421	0.8208	0.8000	0.7852	Ave		0.8278				3.9		20.0			
Methoxychlor	0.4318 0.3767	0.4413 0.3678	0.4078	0.3840	0.3761	Ave		0.3979				7.4		20.0			
Endrin ketone	0.9412 0.8866	0.9030 0.8949	0.8878	0.8725	0.8552	Ave		0.8916				3.0		20.0			
Tetrachloro-m-xylene	0.9495 0.8798	0.8826 0.9103	0.8573	0.8440	0.8280	Ave		0.8788				4.7		20.0			
DCB Decachlorobiphenyl	0.7603 0.6703	0.7341 0.6674	0.7038	0.6590	0.6500	Ave		0.6921				6.0		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 135054

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP II ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/29/2016 14:16 Calibration End Date: 10/29/2016 15:50 Calibration ID: 26307

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 320-135054/9	1029-009.D
Level 2	STD002 320-135054/10	1029-010.D
Level 3	STD003 320-135054/11	1029-011.D
Level 4	STD004 320-135054/12	1029-012.D
Level 5	STD005 320-135054/13	1029-013.D
Level 6	STD006 320-135054/14	1029-014.D
Level 7	STD007 320-135054/15	1029-015.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
alpha-BHC	BNB	Ave	7121136 433261824	14056293 925462604	35636050	75280389	158531025	1.00 50.0	2.00 100	5.00	10.0	20.0
gamma-BHC (Lindane)	BNB	Ave	6849328 396241896	13496205 856343375	34033851	70640460	146199246	1.00 50.0	2.00 100	5.00	10.0	20.0
beta-BHC	BNB	Ave	3363937 142980086	6282871 296810839	14678578	28821190	56183418	1.00 50.0	2.00 100	5.00	10.0	20.0
delta-BHC	BNB	Ave	6629349 395707041	13017544 852495346	33092039	69148436	145345981	1.00 50.0	2.00 100	5.00	10.0	20.0
Heptachlor	BNB	Ave	6592468 350170801	12785776 710791806	31784706	65013103	132439706	1.00 50.0	2.00 100	5.00	10.0	20.0
Aldrin	BNB	Ave	6545186 348834698	12567018 723567586	31053582	63945984	130448841	1.00 50.0	2.00 100	5.00	10.0	20.0
Heptachlor epoxide	BNB	Ave	6358031 302215213	12017740 612480840	29205657	58551896	117708468	1.00 50.0	2.00 100	5.00	10.0	20.0
gamma-Chlordane	BNB	Ave	6170230 321172703	11789482 662886894	28587006	58241855	120409705	1.00 50.0	2.00 100	5.00	10.0	20.0
alpha-Chlordane	BNB	Ave	5841898 290809887	11078768 571767939	26588236	53874261	108032399	1.00 50.0	2.00 100	5.00	10.0	20.0
Endosulfan I	BNB	Ave	5780969 279256806	11083783 558505416	26846856	54218945	107837745	1.00 50.0	2.00 100	5.00	10.0	20.0
4,4'-DDE	BNB	Ave	5392659 305902451	10620176 650342694	26632790	55138772	114025774	1.00 50.0	2.00 100	5.00	10.0	20.0
Dieldrin	BNB	Ave	6075522 319150177	11937355 656446934	29345123	59740438	122030459	1.00 50.0	2.00 100	5.00	10.0	20.0
Endrin	BNB	Ave	5212176 264173870	10054095 519980818	24406841	49407395	99888410	1.00 50.0	2.00 100	5.00	10.0	20.0
4,4'-DDD	BNB	Ave	5097897 250519900	9830241 531764792	23564980	47578109	96403447	1.00 50.0	2.00 100	5.00	10.0	20.0
Endosulfan II	BNB	Ave	5202134 238991600	9306887 507364664	21702248	45255306	98272366	1.00 50.0	2.00 100	5.00	10.0	20.0

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1 Analy Batch No.: 135054

SDG No.:

Instrument ID: GC75 GC Column: STX-CLP II ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/29/2016 14:16 Calibration End Date: 10/29/2016 15:50 Calibration ID: 26307

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
4,4'-DDT	BNB	Ave	4020675 237517383	8006209 514064249	19953632	41699036	86959410	1.00 50.0	2.00 100	5.00	10.0	20.0
Endrin aldehyde	BNB	Ave	4756294 208765977	8947583 418739887	21035495	41918372	82690283	1.00 50.0	2.00 100	5.00	10.0	20.0
Endosulfan sulfate	BNB	Ave	5207253 240695208	9978445 498065808	23816797	47245076	94005543	1.00 50.0	2.00 100	5.00	10.0	20.0
Methoxychlor	BNB	Ave	2543360 110249688	5240097 217550410	11832299	22677591	45025492	1.00 50.0	2.00 100	5.00	10.0	20.0
Endrin ketone	BNB	Ave	5544135 259482411	10721299 529317204	25759794	51529036	102383053	1.00 50.0	2.00 100	5.00	10.0	20.0
Tetrachloro-m-xylene	BNB	Ave	5593204 257483646	10479625 538403207	24875696	49849071	99119320	1.00 50.0	2.00 100	5.00	10.0	20.0
DCB Decachlorobiphenyl	BNB	Ave	4478743 196162702	8715646 394758829	20421104	38920170	77817606	1.00 50.0	2.00 100	5.00	10.0	20.0

Curve Type Legend:
Ave = Average ISTD

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-009.D
Lims ID: STD001 PEST L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 29-Oct-2016 14:16:40 ALS Bottle#: 7 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L1
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:35:24 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:27:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.038	3.038	0.000	524587861	200.0	200.0	
2	2.809	2.809	0.000	1178120422	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.859	3.859	0.000	2632579	1.00	1.10	
2	3.733	3.733	0.000	5593204	1.00	1.08	
						RPD = 1.91	
11 alpha-BHC							
1	4.344	4.344	0.000	3178729	1.00	0.9038	
2	4.258	4.258	0.000	7121136	1.00	0.9134	
						RPD = 1.06	
2 gamma-BHC (Lindane)							
1	4.594	4.594	0.000	3194384	1.00	0.9606	
2	4.531	4.531	0.000	6849328	1.00	0.9365	
						RPD = 2.54	
6 beta-BHC							
1	4.661	4.661	0.000	1677691	1.00	1.18	
2	4.599	4.599	0.000	3363937	1.00	1.12	
						RPD = 4.89	
18 delta-BHC							
1	4.793	4.793	0.000	3000860	1.00	0.9640	
2	4.805	4.805	0.000	6629349	1.00	0.9224	
						RPD = 4.41	
19 Heptachlor							
1	4.949	4.949	0.000	3015965	1.00	0.9734	
2	4.841	4.841	0.000	6592468	1.00	0.99	
						RPD = 1.90	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.164	5.164	0.000	3053375	1.00	0.9868	
2	5.059	5.059	0.000	6545186	1.00	0.99	
						RPD = 0.69	
26 Heptachlor epoxide							
1	5.644	5.644	0.000	3016751	1.00	1.06	
2	5.483	5.483	0.000	6358031	1.00	1.06	
						RPD = 0.55	
25 gamma-Chlordane							
1	5.756	5.756	0.000	2998621	1.00	1.03	
2	5.639	5.639	0.000	6170230	1.00	1.01	
						RPD = 1.59	
15 alpha-Chlordane							
1	5.878	5.878	0.000	3003128	1.00	1.05	
2	5.766	5.766	0.000	5841898	1.00	1.05	
						RPD = 0.40	
16 4,4'-DDE							
1	5.945	5.945	0.000	2579472	1.00	0.9806	
2	5.923	5.923	0.000	5392659	1.00	0.9482	
						RPD = 3.37	
7 Endosulfan I							
1	6.012	6.012	0.000	2938324	1.00	1.09	
2	5.820	5.820	0.000	5780969	1.00	1.05	
						RPD = 3.60	
29 Dieldrin							
1	6.263	6.263	0.000	2931031	1.00	1.02	
2	6.088	6.088	0.000	6075522	1.00	0.99	
						RPD = 2.92	
13 Endrin							
1	6.531	6.531	0.000	2436629	1.00	1.03	
2	6.426	6.426	0.000	5212176	1.00	1.03	
						RPD = 0.17	
12 4,4'-DDD							
1	6.606	6.606	0.000	2375028	1.00	1.03	
2	6.572	6.572	0.000	5097897	1.00	1.03	
						RPD = 0.06	
10 Endosulfan II							
1	6.816	6.816	0.000	2471135	1.00	1.11	
2	6.696	6.696	0.000	5202134	1.00	1.09	
						RPD = 1.94	
14 4,4'-DDT							
1	6.988	6.988	0.000	1664756	1.00	0.8896	
2	7.006	7.006	0.000	4020675	1.00	0.9264	
						RPD = 4.05	
27 Endrin aldehyde							
1	7.381	7.381	0.000	2246338	1.00	1.11	
2	7.178	7.178	0.000	4756294	1.00	1.11	
						RPD = 0.63	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.630	7.630	0.000	1066152	1.00	1.02	
2	7.901	7.901	0.000	2543360	1.00	1.09	
						RPD = 6.00	
30 Endosulfan sulfate							
1	7.886	7.886	0.000	2566476	1.00	1.12	
2	7.537	7.537	0.000	5207253	1.00	1.07	
						RPD = 5.04	
1 Endrin ketone							
1	8.174	8.174	0.000	2578348	1.00	1.04	
2	8.121	8.121	0.000	5544135	1.00	1.06	
						RPD = 1.23	
$ 23 DCB Decachlorobiphenyl							M
1	9.211	9.211	0.000	2199155	1.00	1.12	M
2	9.409	9.409	0.000	4478743	1.00	1.10	M
						RPD = 1.69	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL1_00013 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:35:26 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-009.D

Injection Date: 29-Oct-2016 14:16:40 Instrument ID: GC75

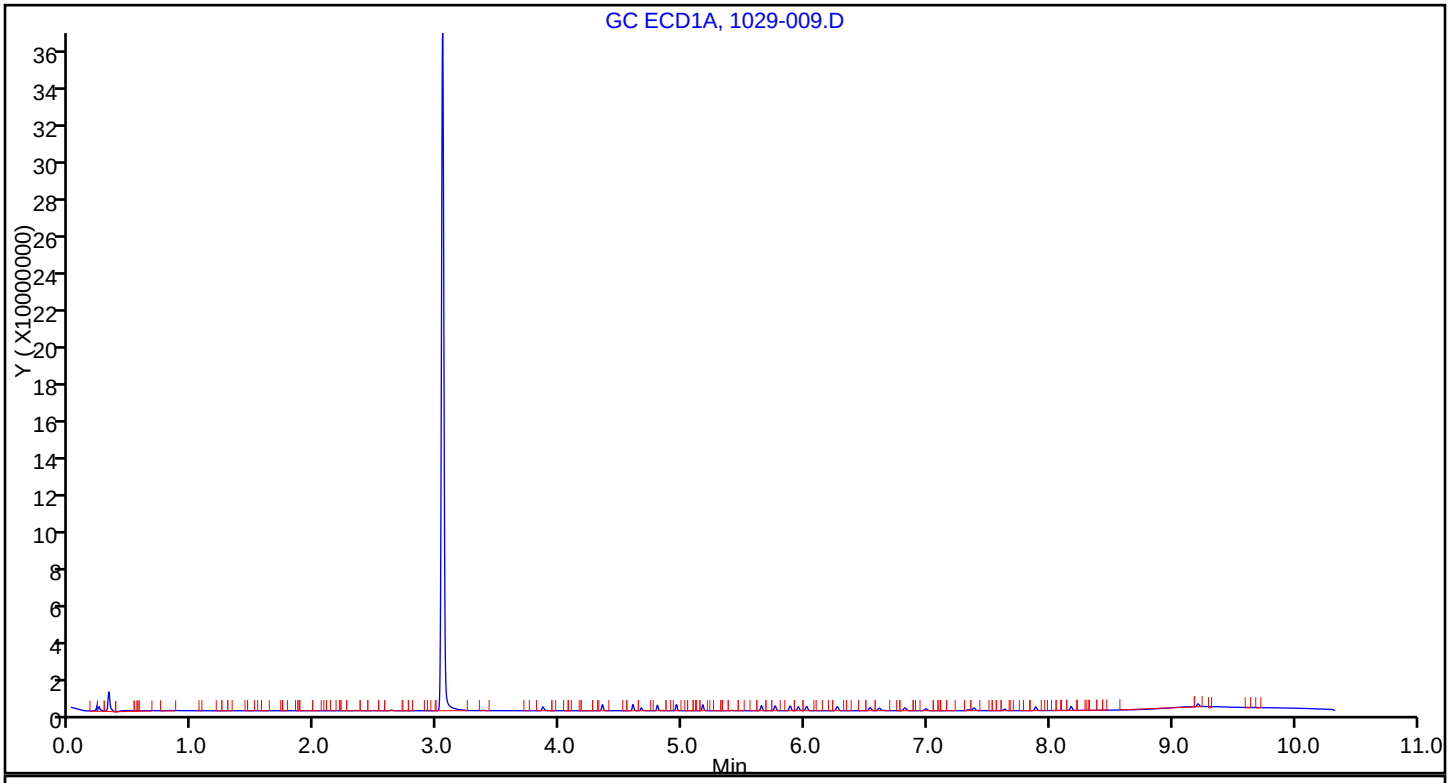
Lims ID: STD001 PEST L1

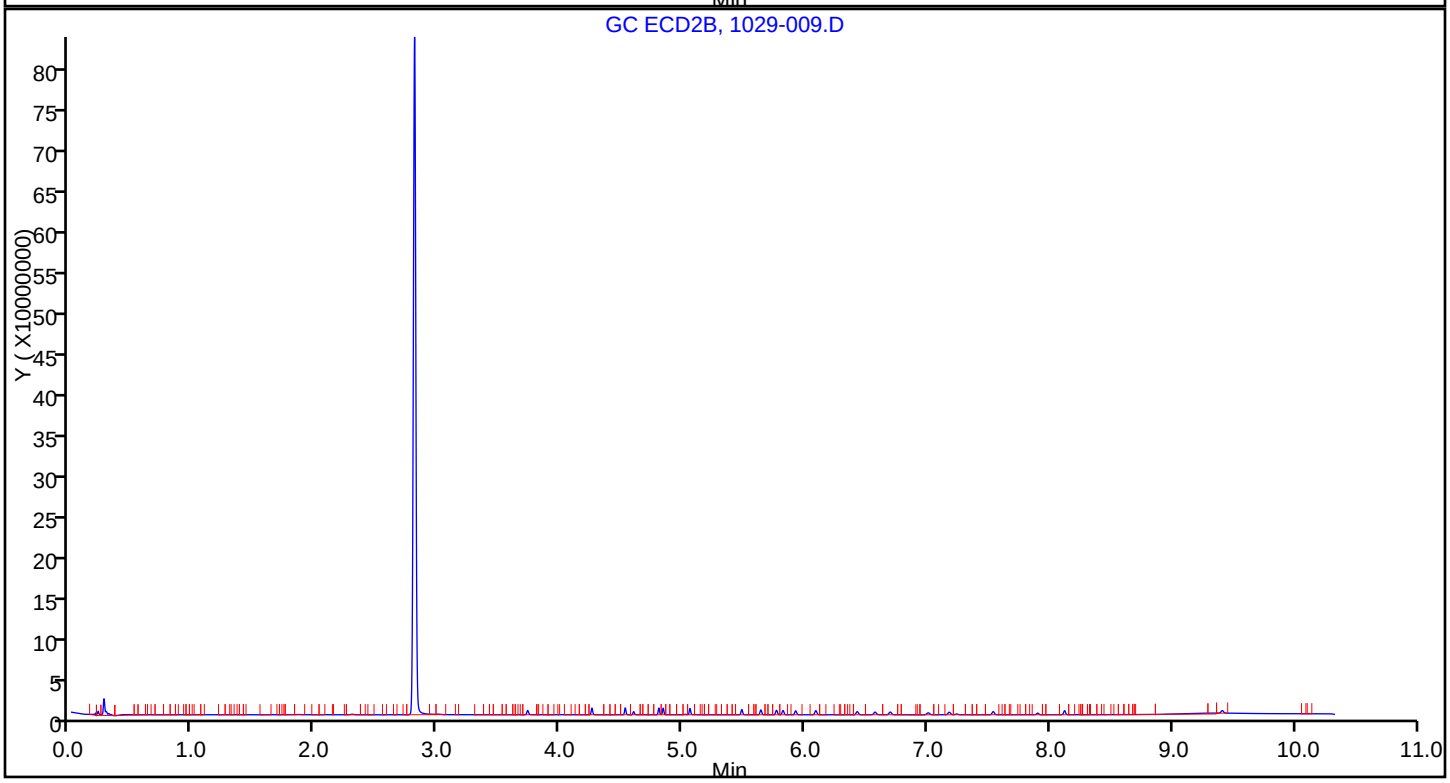
Client ID:

Operator ID: SMH ALS Bottle#: 7 Worklist Smp#: 9

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





TestAmerica Sacramento

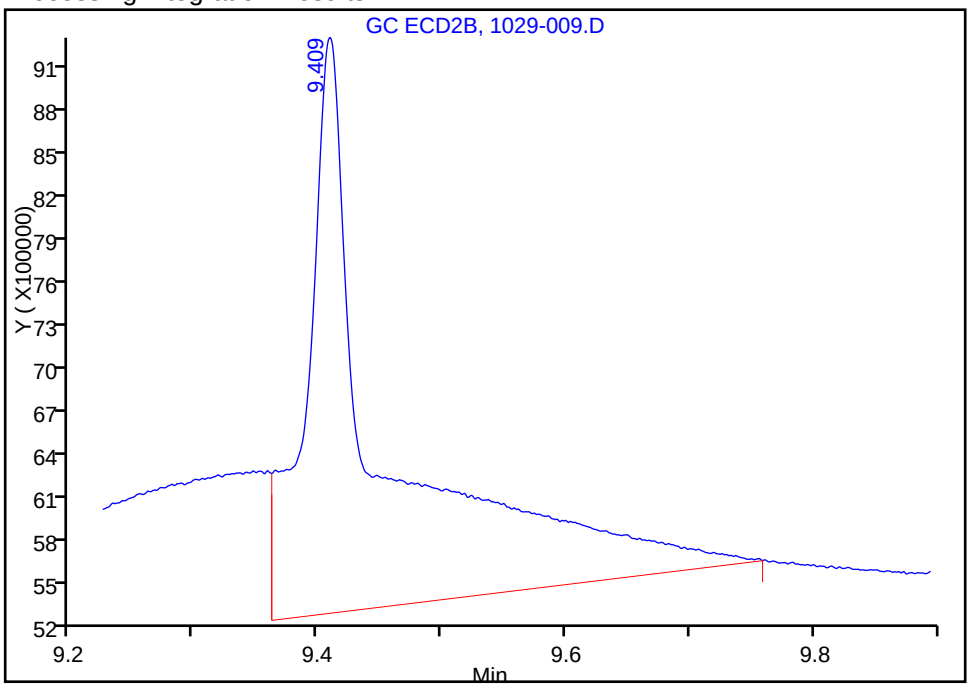
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-009.D
Injection Date: 29-Oct-2016 14:16:40 Instrument ID: GC75
Lims ID: STD001 PEST L1
Client ID:
Operator ID: SMH ALS Bottle#: 7 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

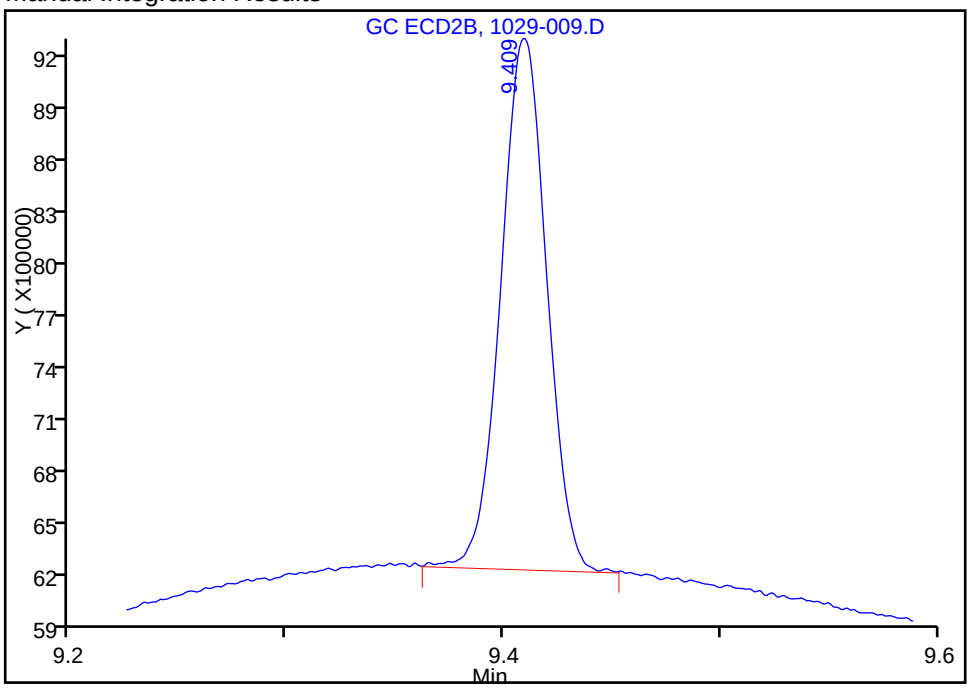
Processing Integration Results

RT: 9.41
Area: 17520621
Amount: 2.123717
Amount Units: ug/l



Manual Integration Results

RT: 9.41
Area: 4478743
Amount: 1.098531
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:27:44
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-010.D
Lims ID: STD002 PEST L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 29-Oct-2016 14:32:22 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L2
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:35:36 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:29:10

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.038	-0.004	531923784	200.0	200.0	
2	2.808	2.809	-0.001	1187312372	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.859	-0.003	4932870	2.00	2.04	
2	3.733	3.733	0.000	10479625	2.00	2.01	
						RPD = 1.31	
11 alpha-BHC							
1	4.342	4.344	-0.002	6306387	2.00	1.77	
2	4.258	4.258	0.000	14056293	2.00	1.79	
						RPD = 1.16	
2 gamma-BHC (Lindane)							
1	4.591	4.594	-0.003	6261729	2.00	1.86	
2	4.530	4.531	-0.001	13496205	2.00	1.83	
						RPD = 1.41	
6 beta-BHC							
1	4.659	4.661	-0.002	3055393	2.00	2.12	
2	4.599	4.599	0.000	6282871	2.00	2.08	
						RPD = 1.76	
18 delta-BHC							
1	4.790	4.793	-0.003	5576676	2.00	1.77	
2	4.805	4.805	0.000	13017544	2.00	1.80	
						RPD = 1.71	
19 Heptachlor							
1	4.946	4.949	-0.003	5871841	2.00	1.87	
2	4.840	4.841	-0.001	12785776	2.00	1.91	
						RPD = 2.13	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.164	-0.002	5938371	2.00	1.89	
2	5.060	5.059	0.001	12567018	2.00	1.89	
						RPD = 0.02	
26 Heptachlor epoxide							
1	5.641	5.644	-0.003	5775527	2.00	2.01	
2	5.482	5.483	-0.001	12017740	2.00	1.98	
						RPD = 1.21	
25 gamma-Chlordane							
1	5.753	5.756	-0.003	5753911	2.00	1.95	
2	5.638	5.639	-0.001	11789482	2.00	1.92	
						RPD = 1.41	
15 alpha-Chlordane							
1	5.875	5.878	-0.003	5741848	2.00	1.99	
2	5.765	5.766	-0.001	11078768	2.00	1.97	
						RPD = 0.61	
16 4,4'-DDE							
1	5.941	5.945	-0.004	5037274	2.00	1.89	
2	5.921	5.923	-0.002	10620176	2.00	1.85	
						RPD = 1.91	
7 Endosulfan I							
1	6.009	6.012	-0.003	5547664	2.00	2.02	
2	5.819	5.820	-0.001	11083783	2.00	1.99	
						RPD = 1.45	
29 Dieldrin							
1	6.260	6.263	-0.003	5648024	2.00	1.94	
2	6.087	6.088	-0.001	11937355	2.00	1.93	
						RPD = 0.37	
13 Endrin							
1	6.528	6.531	-0.003	4699210	2.00	1.95	
2	6.425	6.426	-0.001	10054095	2.00	1.97	
						RPD = 0.80	
12 4,4'-DDD							
1	6.604	6.606	-0.002	4570992	2.00	1.96	
2	6.570	6.572	-0.002	9830241	2.00	1.97	
						RPD = 0.75	
10 Endosulfan II							
1	6.812	6.816	-0.004	4389800	2.00	1.95	
2	6.695	6.696	-0.001	9306887	2.00	1.93	
						RPD = 0.62	
14 4,4'-DDT							M
1	6.984	6.988	-0.004	3320270	2.00	1.75	M
2	7.004	7.006	-0.002	8006209	2.00	1.83	
						RPD = 4.50	
27 Endrin aldehyde							
1	7.378	7.381	-0.003	4208633	2.00	2.06	
2	7.176	7.178	-0.002	8947583	2.00	2.07	
						RPD = 0.39	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.627	7.630	-0.003	2097399	2.00	1.98	
2	7.900	7.901	-0.001	5240097	2.00	2.22	
						RPD = 11.22	
30 Endosulfan sulfate							
1	7.883	7.886	-0.003	4901064	2.00	2.12	
2	7.536	7.537	-0.001	9978445	2.00	2.03	
						RPD = 4.09	
1 Endrin ketone							
1	8.172	8.174	-0.002	5210667	2.00	2.08	
2	8.120	8.121	-0.001	10721299	2.00	2.03	
						RPD = 2.56	
$ 23 DCB Decachlorobiphenyl							M
1	9.210	9.211	-0.001	4183392	2.00	2.10	M
2	9.408	9.409	-0.001	8715646	2.00	2.12	M
						RPD = 1.20	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL2_00012 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:35:38 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-010.D

Injection Date: 29-Oct-2016 14:32:22 Instrument ID: GC75

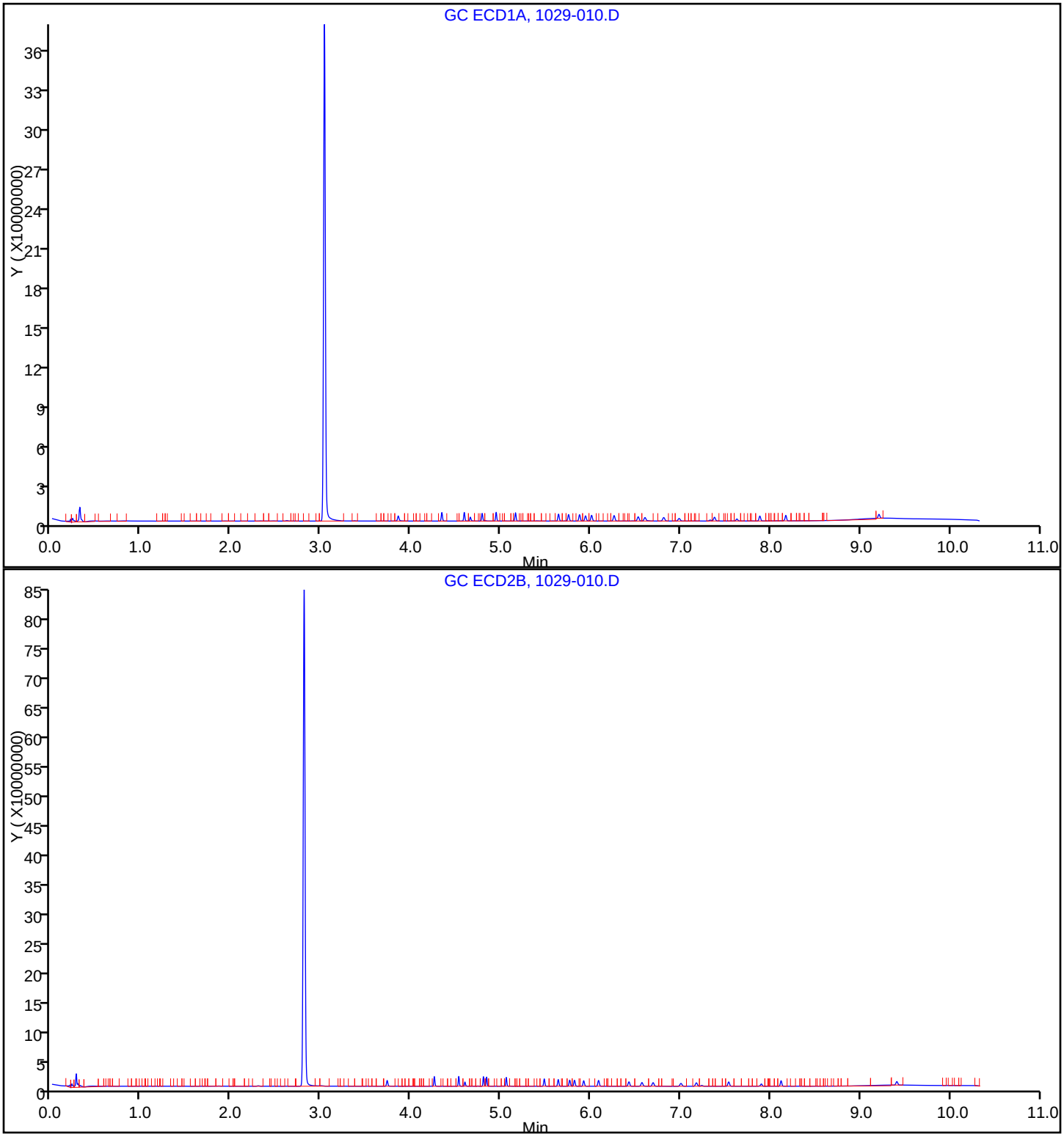
Lims ID: STD002 PEST L2

Client ID:

Operator ID: SMH ALS Bottle#: 8 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

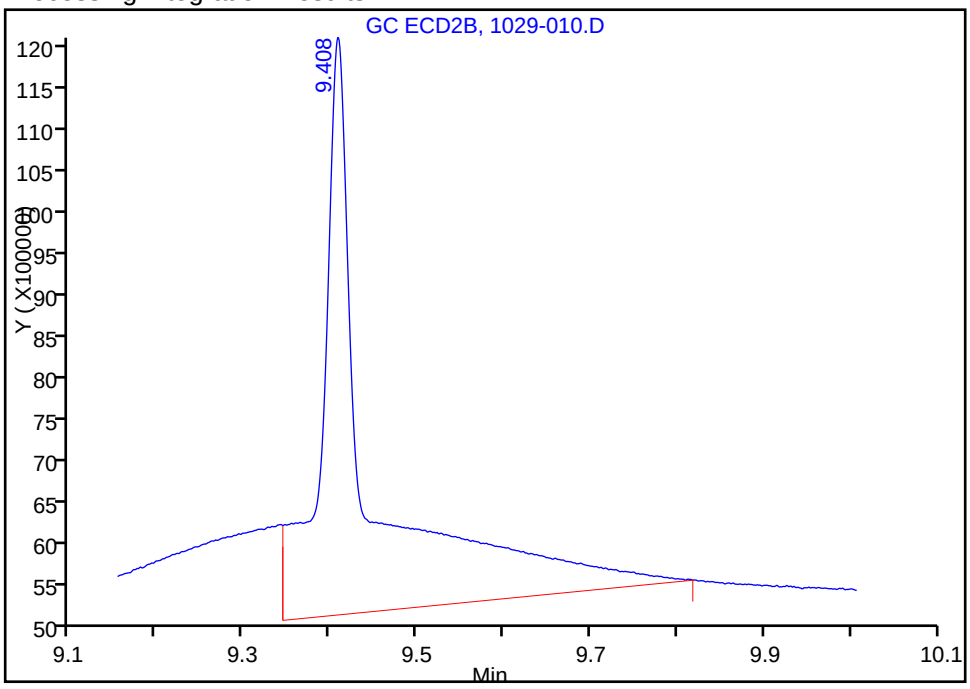
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-010.D
Injection Date: 29-Oct-2016 14:32:22 Instrument ID: GC75
Lims ID: STD002 PEST L2
Client ID:
Operator ID: SMH ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

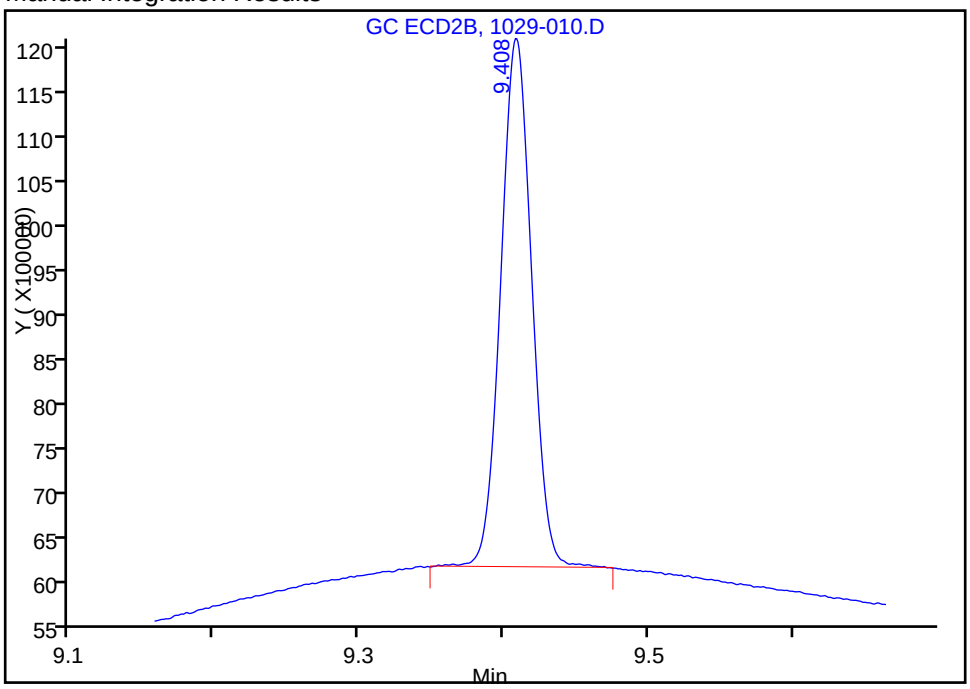
Processing Integration Results

RT: 9.41
Area: 26939240
Amount: 4.185266
Amount Units: ug/l



Manual Integration Results

RT: 9.41
Area: 8715646
Amount: 2.121195
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:29:10
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-011.D
Lims ID: STD003 PEST L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 29-Oct-2016 14:48:03 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L3
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:35:43 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:29:36

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.038	-0.004	526075901	200.0	200.0	
2	2.808	2.809	-0.001	1160635088	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.859	-0.003	11582569	5.00	4.83	
2	3.733	3.733	0.000	24875696	5.00	4.88	
						RPD = 0.95	
11 alpha-BHC							
1	4.342	4.344	-0.002	16246978	5.00	4.61	
2	4.258	4.258	0.000	35636050	5.00	4.64	
						RPD = 0.72	
2 gamma-BHC (Lindane)							
1	4.592	4.594	-0.002	15564968	5.00	4.67	
2	4.530	4.531	-0.001	34033851	5.00	4.72	
						RPD = 1.20	
6 beta-BHC							
1	4.658	4.661	-0.003	7033647	5.00	4.94	
2	4.598	4.599	-0.001	14678578	5.00	4.98	
						RPD = 0.88	
18 delta-BHC							
1	4.790	4.793	-0.003	14145021	5.00	4.53	
2	4.804	4.805	-0.001	33092039	5.00	4.67	
						RPD = 3.10	
19 Heptachlor							
1	4.946	4.949	-0.003	14667971	5.00	4.72	
2	4.840	4.841	-0.001	31784706	5.00	4.86	
						RPD = 2.81	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.164	-0.002	14718557	5.00	4.74	
2	5.059	5.059	0.000	31053582	5.00	4.79	
						RPD = 0.88	
26 Heptachlor epoxide							
1	5.640	5.644	-0.004	13722394	5.00	4.83	
2	5.482	5.483	-0.001	29205657	5.00	4.93	
						RPD = 2.21	
25 gamma-Chlordane							
1	5.753	5.756	-0.003	13776021	5.00	4.72	
2	5.638	5.639	-0.001	28587006	5.00	4.77	
						RPD = 1.03	
15 alpha-Chlordane							
1	5.875	5.878	-0.003	13638939	5.00	4.77	
2	5.765	5.766	-0.001	26588236	5.00	4.85	
						RPD = 1.59	
16 4,4'-DDE							
1	5.941	5.945	-0.004	12155657	5.00	4.61	
2	5.921	5.923	-0.002	26632790	5.00	4.75	
						RPD = 3.10	
7 Endosulfan I							
1	6.009	6.012	-0.003	13073596	5.00	4.82	
2	5.818	5.820	-0.002	26846856	5.00	4.94	
						RPD = 2.46	
29 Dieldrin							
1	6.259	6.263	-0.004	13640260	5.00	4.74	
2	6.086	6.088	-0.002	29345123	5.00	4.86	
						RPD = 2.57	
13 Endrin							
1	6.528	6.531	-0.003	11289724	5.00	4.74	
2	6.425	6.426	-0.001	24406841	5.00	4.89	
						RPD = 3.01	
12 4,4'-DDD							
1	6.603	6.606	-0.003	10948702	5.00	4.75	
2	6.569	6.572	-0.003	23564980	5.00	4.84	
						RPD = 1.99	
10 Endosulfan II							
1	6.811	6.816	-0.005	10001532	5.00	4.48	
2	6.693	6.696	-0.003	21702248	5.00	4.61	
						RPD = 2.87	
14 4,4'-DDT							
1	6.983	6.988	-0.005	8398824	5.00	4.48	
2	7.003	7.006	-0.003	19953632	5.00	4.67	
						RPD = 4.18	
27 Endrin aldehyde							
1	7.376	7.381	-0.005	9837367	5.00	4.86	
2	7.177	7.178	-0.001	21035495	5.00	4.97	
						RPD = 2.13	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.626	7.630	-0.004	5104039	5.00	4.88	
2	7.899	7.901	-0.002	11832299	5.00	5.12	
						RPD = 4.92	
30 Endosulfan sulfate							
1	7.883	7.886	-0.003	11193696	5.00	4.88	
2	7.536	7.537	-0.001	23816797	5.00	4.96	
						RPD = 1.49	
1 Endrin ketone							
1	8.172	8.174	-0.002	12139891	5.00	4.90	
2	8.119	8.121	-0.002	25759794	5.00	4.98	
						RPD = 1.68	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.211	-0.003	9796944	5.00	4.96	M
2	9.408	9.409	-0.001	20421104	5.00	5.08	M
						RPD = 2.41	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL3_00012 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:35:46 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-011.D

Injection Date: 29-Oct-2016 14:48:03 Instrument ID: GC75

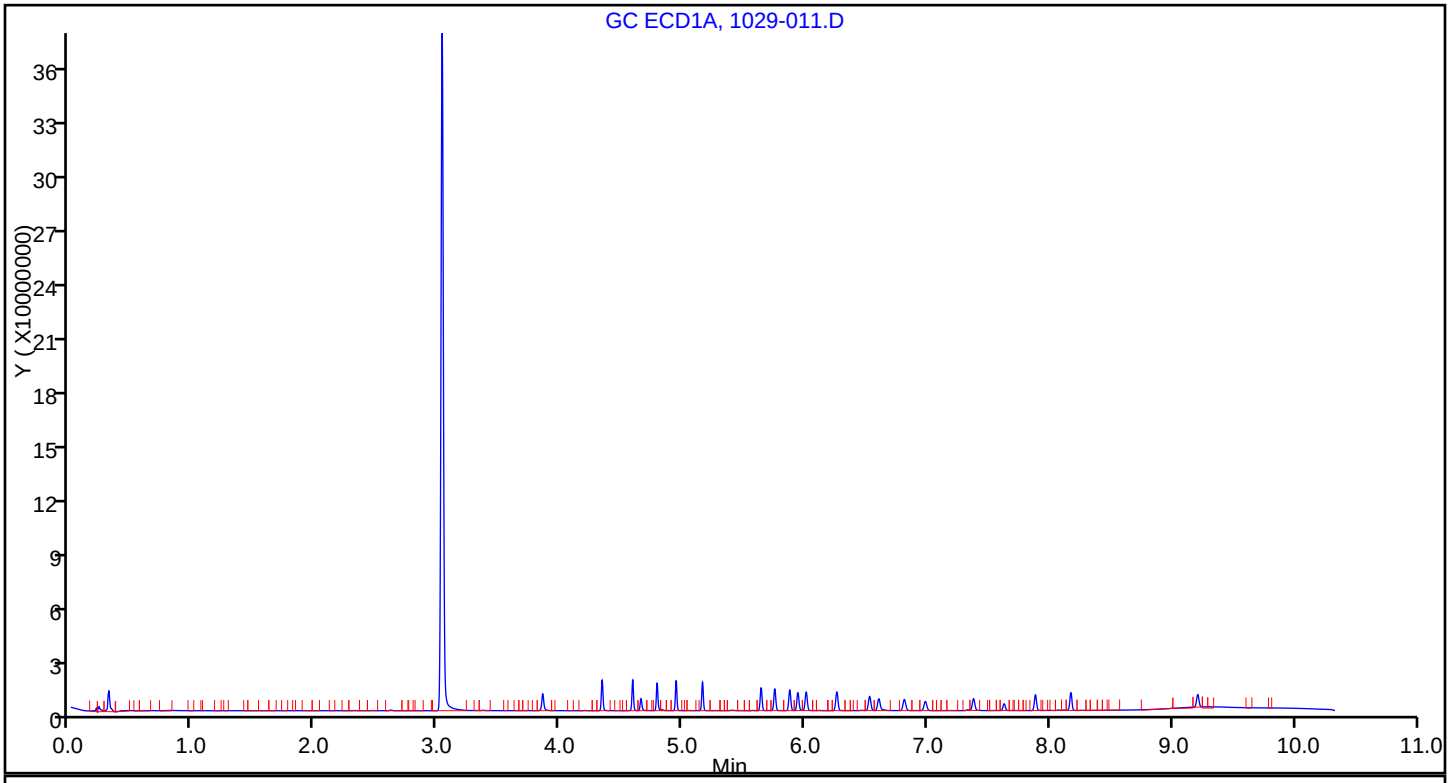
Lims ID: STD003 PEST L3

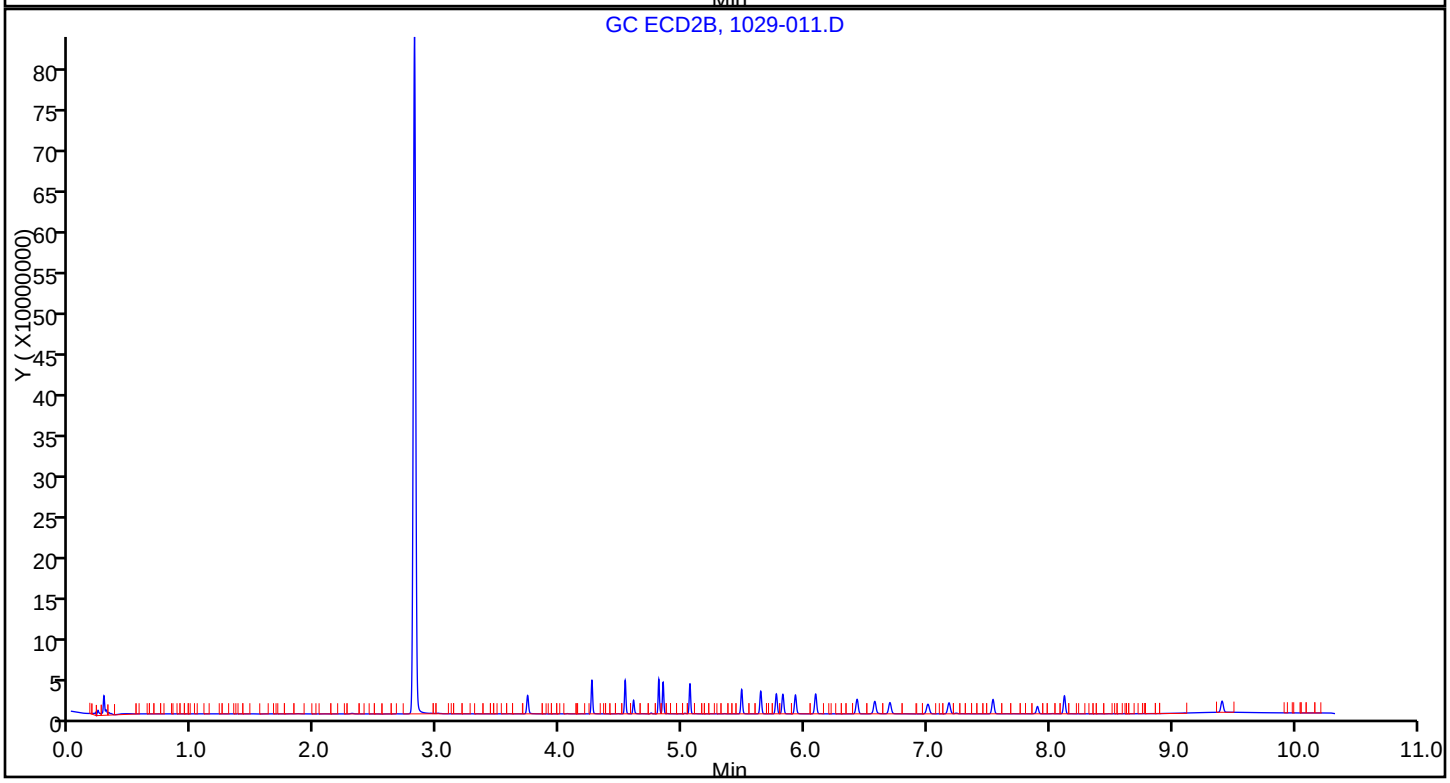
Client ID:

Operator ID: SMH ALS Bottle#: 9 Worklist Smp#: 11

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

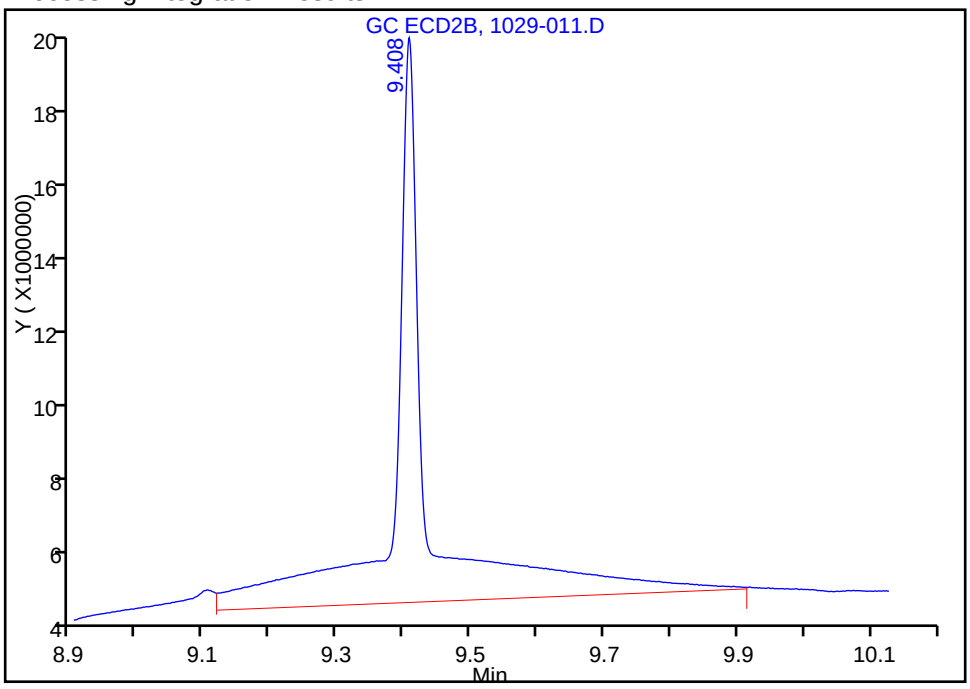
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-011.D
Injection Date: 29-Oct-2016 14:48:03 Instrument ID: GC75
Lims ID: STD003 PEST L3
Client ID:
Operator ID: SMH ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

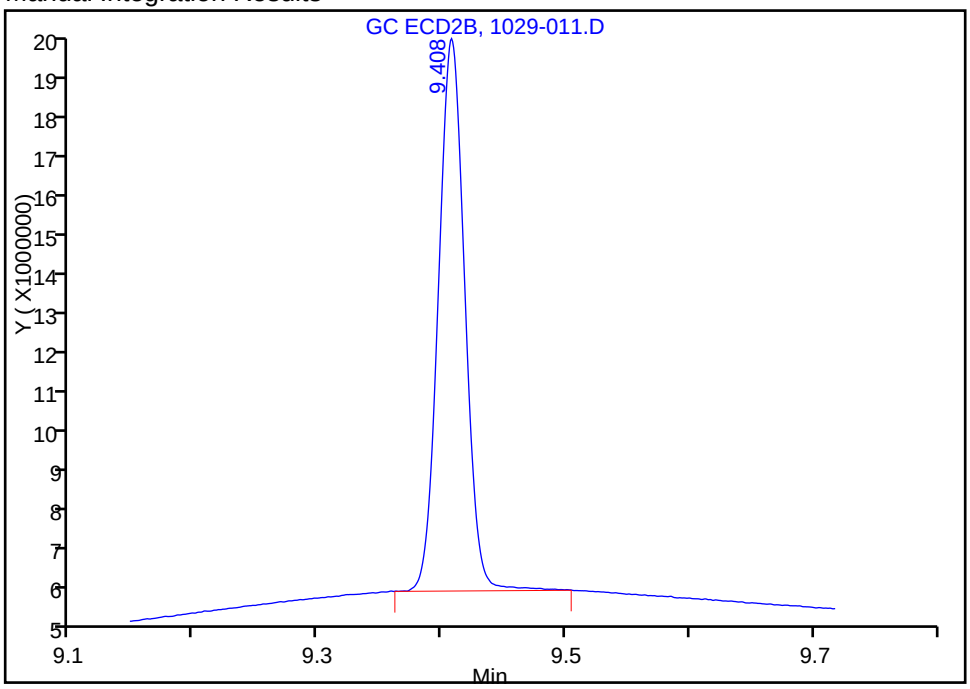
Processing Integration Results

RT: 9.41
Area: 53646977
Amount: 10.687449
Amount Units: ug/l



Manual Integration Results

RT: 9.41
Area: 20421104
Amount: 5.084281
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:29:36
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-012.D
Lims ID: STD004 PEST L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 29-Oct-2016 15:03:45 ALS Bottle#: 10 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L4
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:35:58 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:30:05

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.038	-0.003	526015007	200.0	200.0	
2	2.808	2.809	-0.001	1181192441	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.859	-0.003	22870728	10.0	9.54	
2	3.733	3.733	0.000	49849071	10.0	9.60	
						RPD = 0.66	
11 alpha-BHC							
1	4.341	4.344	-0.003	34483604	10.0	9.78	
2	4.258	4.258	0.000	75280389	10.0	9.63	
						RPD = 1.52	
2 gamma-BHC (Lindane)							
1	4.591	4.594	-0.003	31877544	10.0	9.56	
2	4.531	4.531	0.000	70640460	10.0	9.63	
						RPD = 0.77	
6 beta-BHC							
1	4.659	4.661	-0.002	13495952	10.0	9.48	
2	4.598	4.599	-0.001	28821190	10.0	9.61	
						RPD = 1.42	
18 delta-BHC							
1	4.791	4.793	-0.002	29866008	10.0	9.57	
2	4.805	4.805	0.000	69148436	10.0	9.60	
						RPD = 0.29	
19 Heptachlor							
1	4.946	4.949	-0.003	30297584	10.0	9.75	
2	4.841	4.841	0.000	65013103	10.0	9.76	
						RPD = 0.07	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.164	-0.002	30360504	10.0	9.79	
2	5.060	5.059	0.001	63945984	10.0	9.68	
						RPD = 1.05	
26 Heptachlor epoxide							
1	5.641	5.644	-0.003	27624958	10.0	9.72	
2	5.483	5.483	0.000	58551896	10.0	9.72	
						RPD = 0.03	
25 gamma-Chlordane							
1	5.753	5.756	-0.003	28007386	10.0	9.59	
2	5.638	5.639	-0.001	58241855	10.0	9.54	
						RPD = 0.53	
15 alpha-Chlordane							
1	5.876	5.878	-0.002	27440781	10.0	9.60	
2	5.766	5.766	0.000	53874261	10.0	9.65	
						RPD = 0.53	
16 4,4'-DDE							
1	5.941	5.945	-0.004	25345829	10.0	9.61	
2	5.922	5.923	-0.001	55138772	10.0	9.67	
						RPD = 0.62	
7 Endosulfan I							
1	6.010	6.012	-0.002	26261695	10.0	9.68	
2	5.819	5.820	-0.001	54218945	10.0	9.80	
						RPD = 1.23	
29 Dieldrin							
1	6.260	6.263	-0.003	27608240	10.0	9.59	
2	6.087	6.088	-0.001	59740438	10.0	9.73	
						RPD = 1.38	
13 Endrin							
1	6.529	6.531	-0.002	22597948	10.0	9.49	
2	6.426	6.426	0.000	49407395	10.0	9.72	
						RPD = 2.37	
12 4,4'-DDD							
1	6.603	6.606	-0.003	21992316	10.0	9.53	
2	6.571	6.572	-0.001	47578109	10.0	9.60	
						RPD = 0.74	
10 Endosulfan II							
1	6.811	6.816	-0.005	20492100	10.0	9.18	
2	6.695	6.696	-0.001	45255306	10.0	9.45	
						RPD = 2.86	
14 4,4'-DDT							
1	6.984	6.988	-0.004	17367895	10.0	9.26	
2	7.006	7.006	0.000	41699036	10.0	9.58	
						RPD = 3.47	
27 Endrin aldehyde							
1	7.377	7.381	-0.004	19519516	10.0	9.65	
2	7.177	7.178	-0.001	41918372	10.0	9.73	
						RPD = 0.79	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.626	7.630	-0.004	10000235	10.0	9.56	
2	7.900	7.901	-0.001	22677591	10.0	9.65	
						RPD = 0.95	
30 Endosulfan sulfate							
1	7.882	7.886	-0.004	21998172	10.0	9.60	
2	7.537	7.537	0.000	47245076	10.0	9.66	
						RPD = 0.65	
1 Endrin ketone							
1	8.172	8.174	-0.002	24342829	10.0	9.82	
2	8.120	8.121	-0.001	51529036	10.0	9.79	
						RPD = 0.33	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.211	-0.003	19122824	10.0	9.69	M
2	9.409	9.409	0.000	38920170	10.0	9.52	M
						RPD = 1.74	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL4_00012 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:36:03 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-012.D

Injection Date: 29-Oct-2016 15:03:45 Instrument ID: GC75

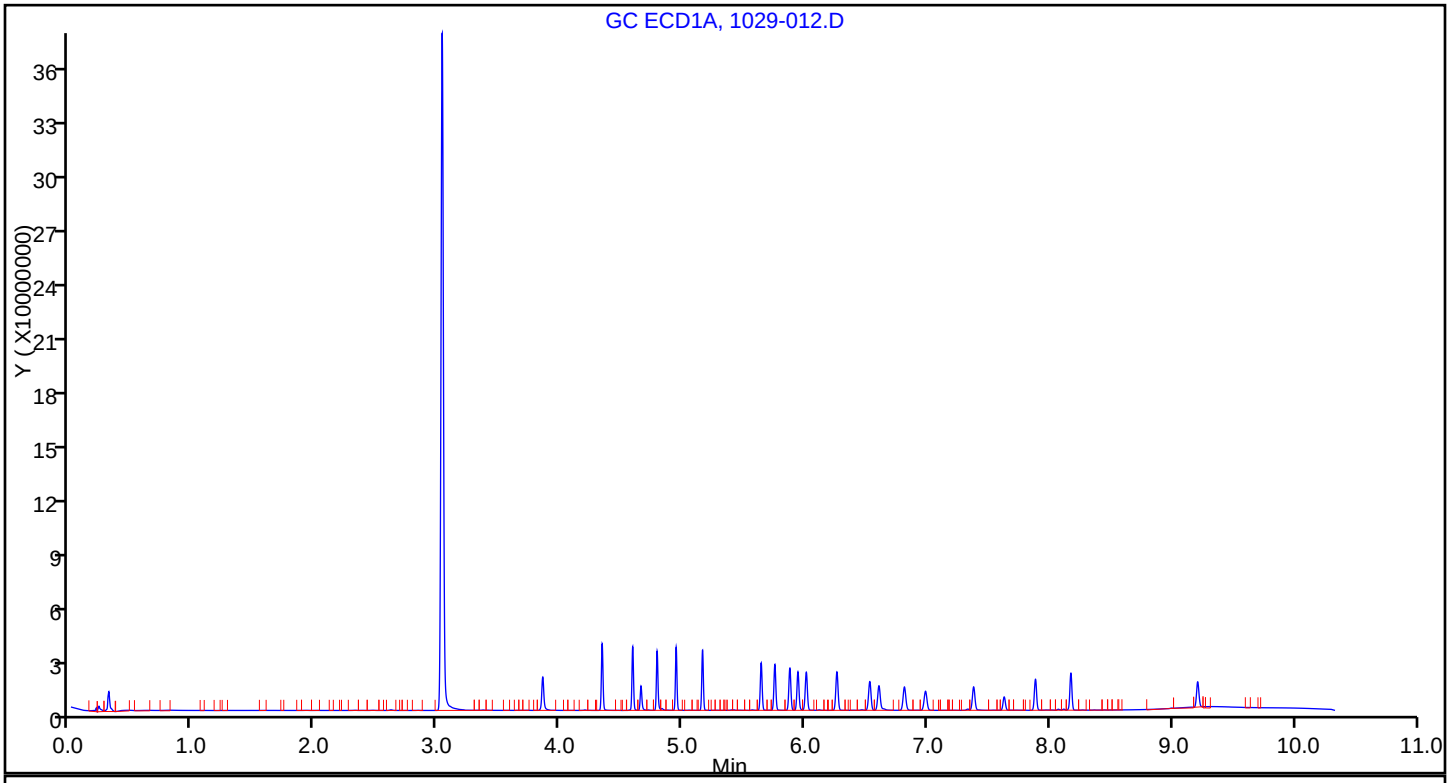
Lims ID: STD004 PEST L4

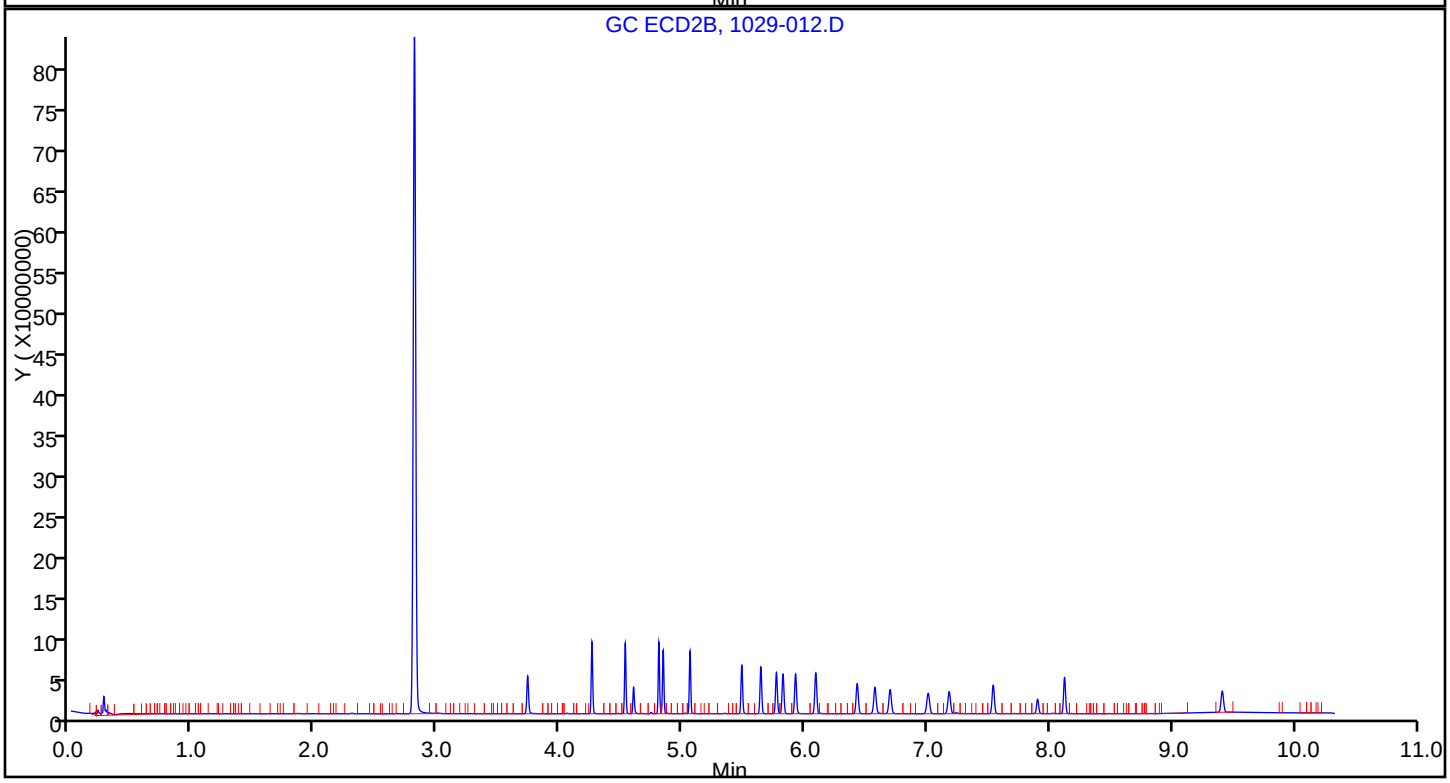
Client ID:

Operator ID: SMH ALS Bottle#: 10 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

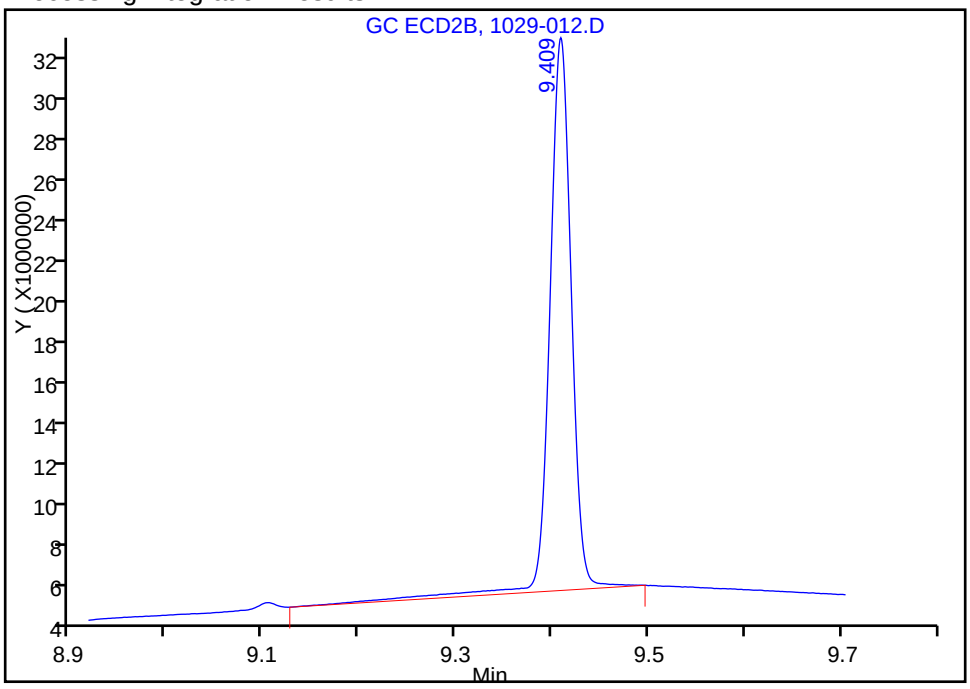
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-012.D
Injection Date: 29-Oct-2016 15:03:45 Instrument ID: GC75
Lims ID: STD004 PEST L4
Client ID:
Operator ID: SMH ALS Bottle#: 10 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

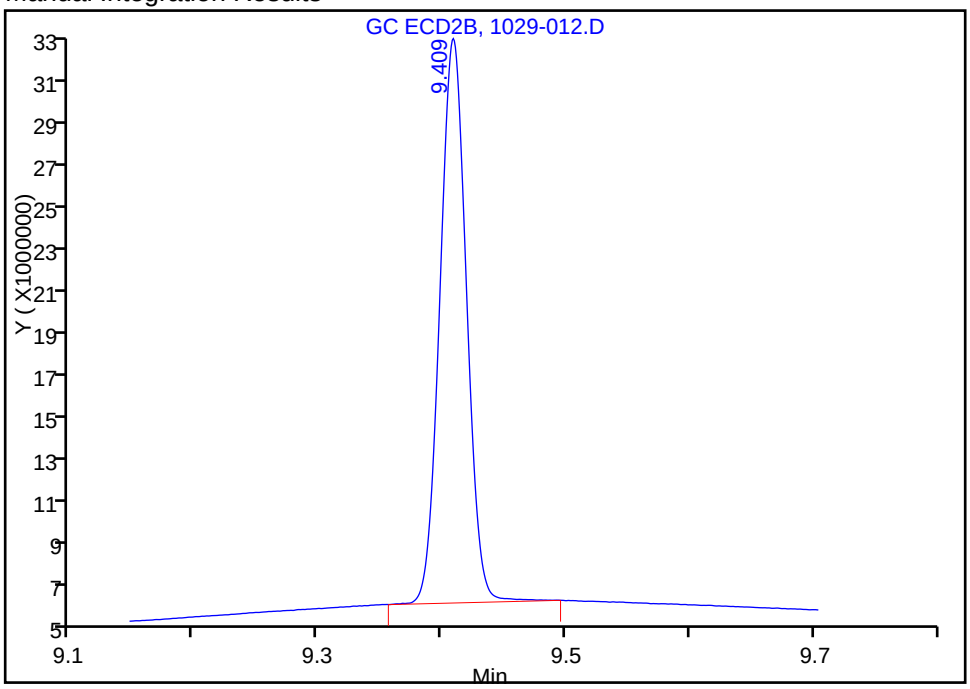
Processing Integration Results

RT: 9.41
Area: 41285149
Amount: 9.966463
Amount Units: ug/l



Manual Integration Results

RT: 9.41
Area: 38920170
Amount: 9.521384
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:30:05
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-013.D
Lims ID: STD005 PEST L5
Client ID:
Sample Type: ICRT Calib Level: 5
Inject. Date: 29-Oct-2016 15:19:25 ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEST L5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:36:16 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:31:12

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.035	0.000	535337469	200.0	200.0	
2	2.808	2.808	0.000	1197147245	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	45828665	20.0	18.8	
2	3.733	3.733	0.000	99119320	20.0	18.8	
						RPD = 0.30	
11 alpha-BHC							
1	4.342	4.342	0.000	72532871	20.0	20.2	
2	4.258	4.258	0.000	158531025	20.0	20.0	
						RPD = 0.98	
2 gamma-BHC (Lindane)							
1	4.591	4.591	0.000	67133427	20.0	19.8	
2	4.530	4.530	0.000	146199246	20.0	19.7	
						RPD = 0.56	
6 beta-BHC							
1	4.659	4.659	0.000	26398029	20.0	18.2	
2	4.598	4.598	0.000	56183418	20.0	18.5	
						RPD = 1.50	
18 delta-BHC							
1	4.790	4.790	0.000	65152645	20.0	20.5	
2	4.805	4.805	0.000	145345981	20.0	19.9	
						RPD = 3.01	
19 Heptachlor							
1	4.946	4.946	0.000	62795802	20.0	19.9	
2	4.840	4.840	0.000	132439706	20.0	19.6	
						RPD = 1.25	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.162	0.000	62122208	20.0	19.7	
2	5.060	5.060	0.000	130448841	20.0	19.5	
						RPD = 0.94	
26 Heptachlor epoxide							
1	5.640	5.640	0.000	55693100	20.0	19.2	
2	5.482	5.482	0.000	117708468	20.0	19.3	
						RPD = 0.16	
25 gamma-Chlordane							
1	5.752	5.752	0.000	57310969	20.0	19.3	
2	5.638	5.638	0.000	120409705	20.0	19.5	
						RPD = 0.92	
15 alpha-Chlordane							
1	5.875	5.875	0.000	55664223	20.0	19.1	
2	5.765	5.765	0.000	108032399	20.0	19.1	
						RPD = 0.21	
16 4,4'-DDE							
1	5.941	5.941	0.000	53174243	20.0	19.8	
2	5.921	5.921	0.000	114025774	20.0	19.7	
						RPD = 0.40	
7 Endosulfan I							
1	6.009	6.009	0.000	52611595	20.0	19.1	
2	5.819	5.819	0.000	107837745	20.0	19.2	
						RPD = 0.93	
29 Dieldrin							
1	6.260	6.260	0.000	57320456	20.0	19.6	
2	6.087	6.087	0.000	122030459	20.0	19.6	
						RPD = 0.17	
13 Endrin							
1	6.528	6.528	0.000	47291556	20.0	19.5	
2	6.425	6.425	0.000	99888410	20.0	19.4	
						RPD = 0.67	
12 4,4'-DDD							
1	6.603	6.603	0.000	45608518	20.0	19.4	
2	6.570	6.570	0.000	96403447	20.0	19.2	
						RPD = 1.17	
10 Endosulfan II							
1	6.811	6.811	0.000	45795745	20.0	20.2	
2	6.694	6.694	0.000	98272366	20.0	20.2	
						RPD = 0.40	
14 4,4'-DDT							
1	6.984	6.984	0.000	38200010	20.0	20.0	
2	7.005	7.005	0.000	86959410	20.0	19.7	
						RPD = 1.44	
27 Endrin aldehyde							
1	7.376	7.376	0.000	39056582	20.0	19.0	
2	7.176	7.176	0.000	82690283	20.0	18.9	
						RPD = 0.21	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.627	7.627	0.000	20766481	20.0	19.5	
2	7.900	7.900	0.000	45025492	20.0	18.9	
						RPD = 3.12	
30 Endosulfan sulfate							
1	7.882	7.882	0.000	43265455	20.0	18.6	
2	7.536	7.536	0.000	94005543	20.0	19.0	
						RPD = 2.23	
1 Endrin ketone							
1	8.172	8.172	0.000	48512936	20.0	19.2	
2	8.119	8.119	0.000	102383053	20.0	19.2	
						RPD = 0.21	
$ 23 DCB Decachlorobiphenyl							M
1	9.209	9.209	0.000	37598611	20.0	18.7	M
2	9.408	9.408	0.000	77817606	20.0	18.8	M
						RPD = 0.35	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL5_00012 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:36:18 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-013.D

Injection Date: 29-Oct-2016 15:19:25 Instrument ID: GC75

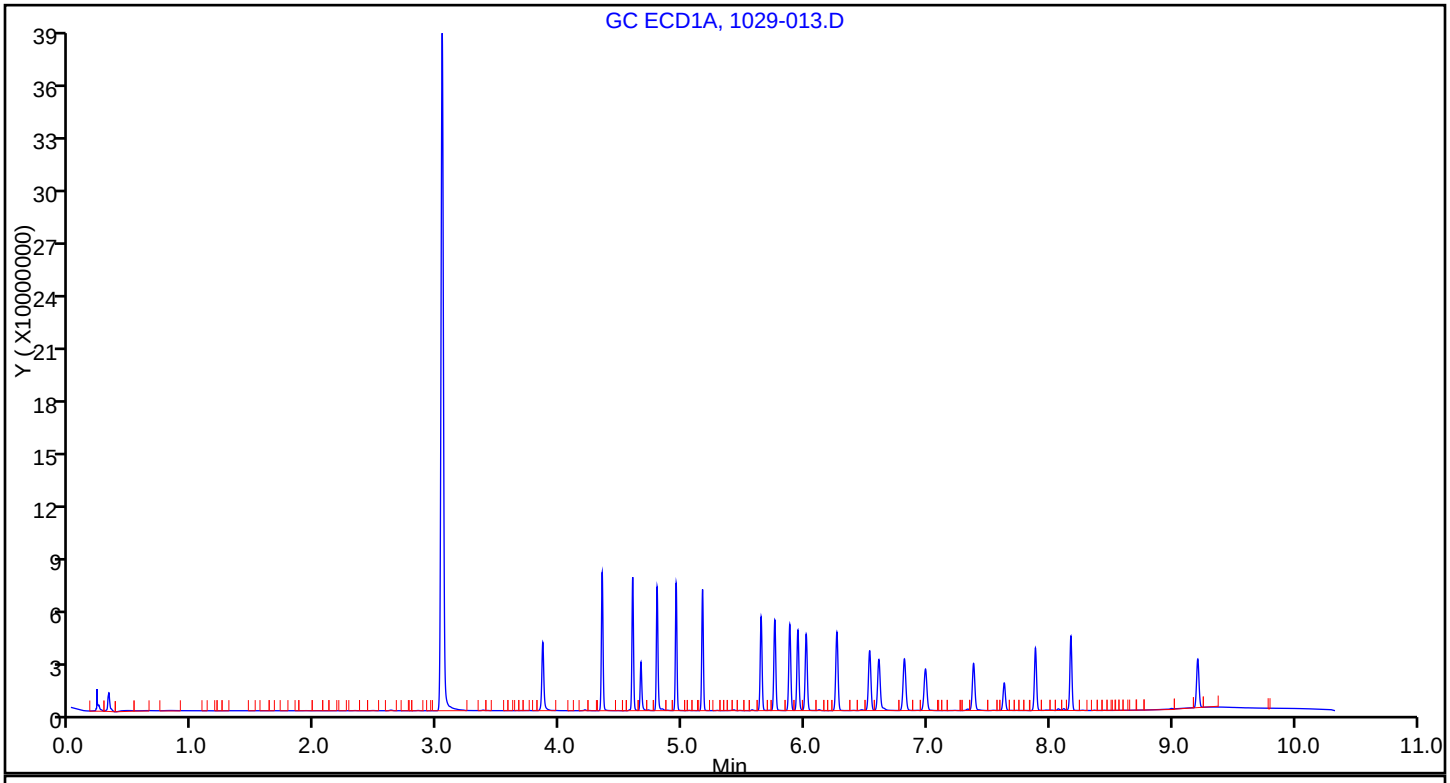
Lims ID: STD005 PEST L5

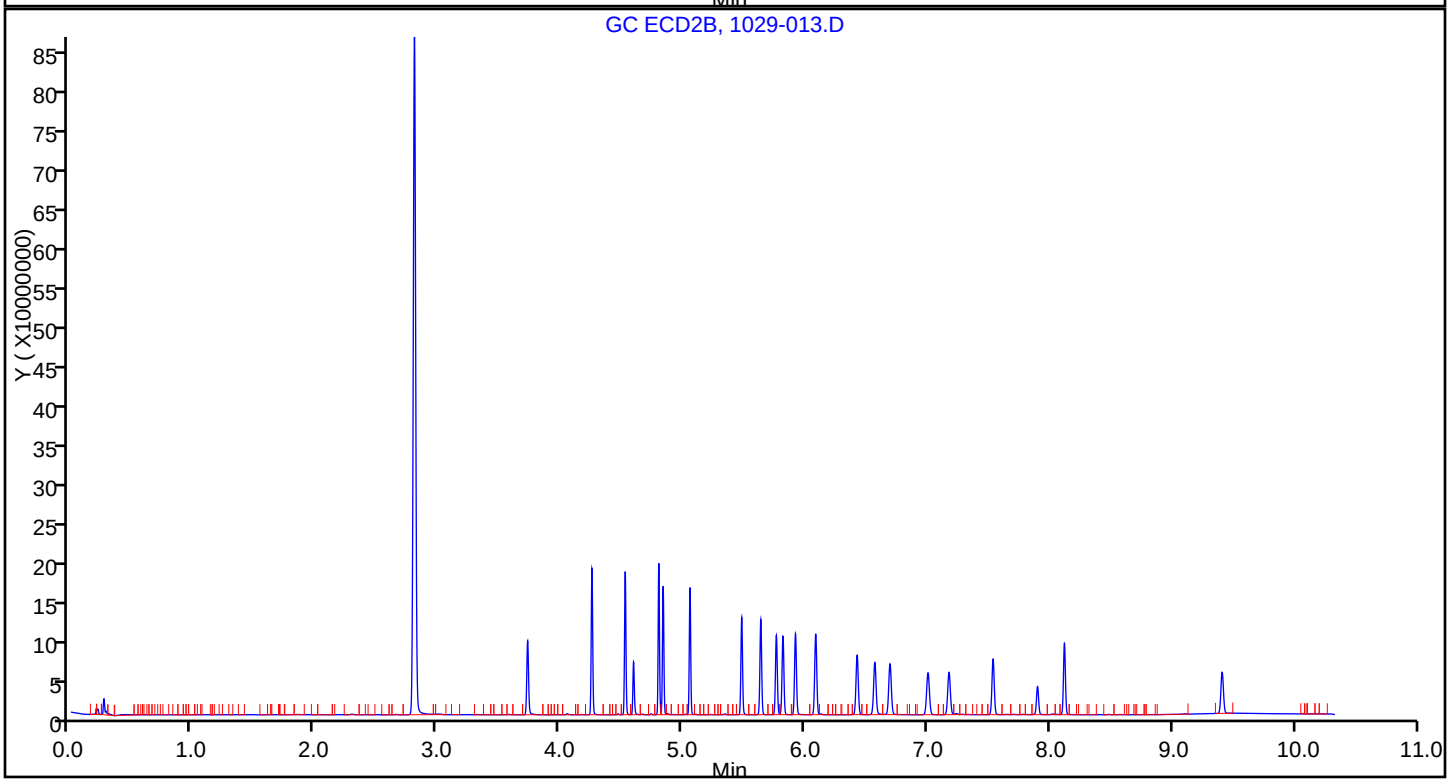
Client ID:

Operator ID: SMH ALS Bottle#: 11 Worklist Smp#: 13

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

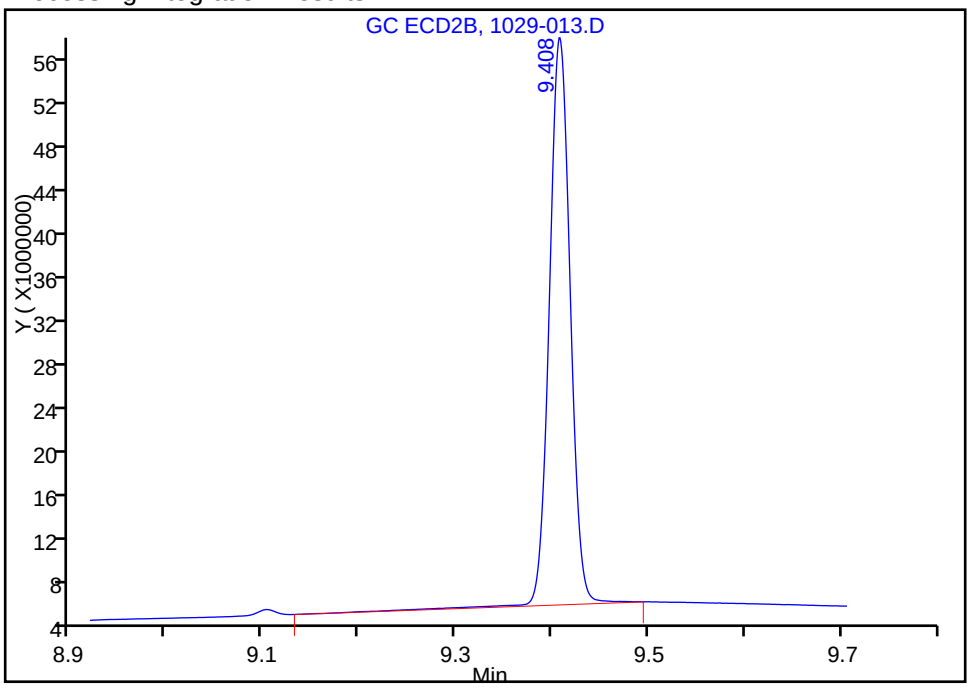
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-013.D
Injection Date: 29-Oct-2016 15:19:25 Instrument ID: GC75
Lims ID: STD005 PEST L5
Client ID:
Operator ID: SMH ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

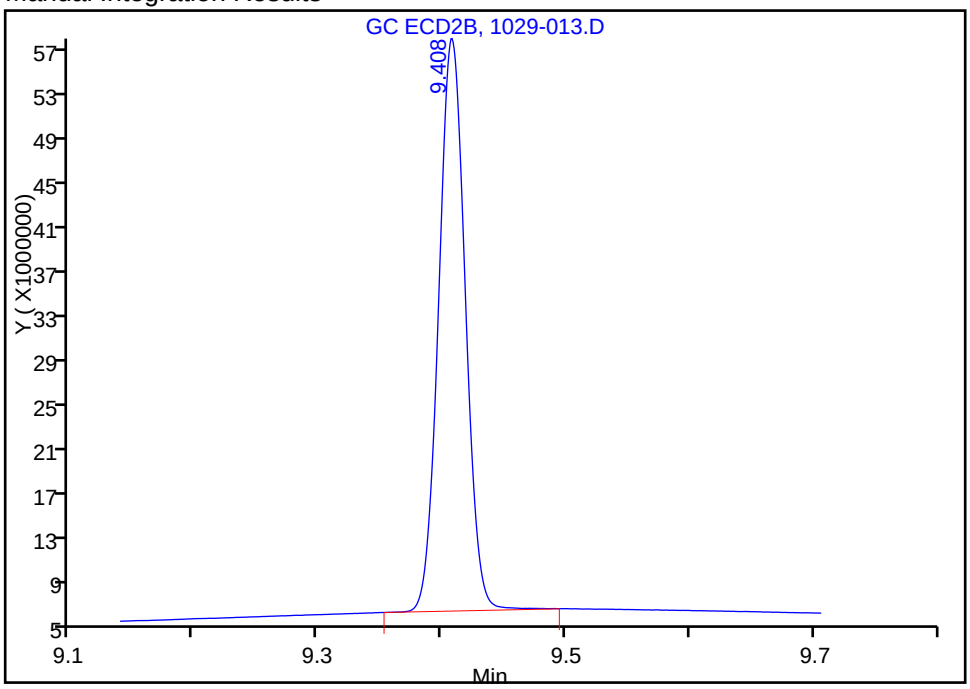
Processing Integration Results

RT: 9.41
Area: 79076227
Amount: 18.989907
Amount Units: ug/l



Manual Integration Results

RT: 9.41
Area: 77817606
Amount: 18.783490
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:31:12
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-014.D
Lims ID: STD006 PEST L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 29-Oct-2016 15:35:08 ALS Bottle#: 12 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-0036262-014
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:36:24 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:31:39

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.035	-0.001	522924803	200.0	200.0	
2	2.807	2.808	-0.001	1170669450	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	116849587	50.0	49.0	
2	3.733	3.733	0.000	257483646	50.0	50.1	
						RPD = 2.06	
11 alpha-BHC							
1	4.342	4.342	0.000	196594808	50.0	56.1	
2	4.258	4.258	0.000	433261824	50.0	55.9	
						RPD = 0.27	
2 gamma-BHC (Lindane)							
1	4.592	4.591	0.001	178343478	50.0	53.8	
2	4.530	4.530	0.000	396241896	50.0	54.5	
						RPD = 1.33	
6 beta-BHC							
1	4.659	4.659	0.000	66073273	50.0	46.7	
2	4.598	4.598	0.000	142980086	50.0	48.1	
						RPD = 3.05	
18 delta-BHC							
1	4.791	4.790	0.001	170726290	50.0	55.0	
2	4.804	4.805	-0.001	395707041	50.0	55.4	
						RPD = 0.70	
19 Heptachlor							
1	4.947	4.946	0.001	163125870	50.0	52.8	
2	4.840	4.840	0.000	350170801	50.0	53.0	
						RPD = 0.41	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.162	0.000	161512168	50.0	52.4	
2	5.059	5.060	-0.001	348834698	50.0	53.3	
						RPD = 1.76	
26 Heptachlor epoxide							
1	5.641	5.640	0.001	141929610	50.0	50.2	
2	5.482	5.482	0.000	302215213	50.0	50.6	
						RPD = 0.80	
25 gamma-Chlordane							
1	5.753	5.752	0.001	150203585	50.0	51.7	
2	5.638	5.638	0.000	321172703	50.0	53.1	
						RPD = 2.56	
15 alpha-Chlordane							
1	5.875	5.875	0.000	144167902	50.0	50.7	
2	5.765	5.765	0.000	290809887	50.0	52.6	
						RPD = 3.54	
16 4,4'-DDE							
1	5.941	5.941	0.000	140747870	50.0	53.7	
2	5.922	5.921	0.001	305902451	50.0	54.1	
						RPD = 0.83	
7 Endosulfan I							
1	6.009	6.009	0.000	134527265	50.0	49.9	
2	5.819	5.819	0.000	279256806	50.0	50.9	
						RPD = 2.08	
29 Dieldrin							
1	6.259	6.260	-0.001	148766628	50.0	52.0	
2	6.087	6.087	0.000	319150177	50.0	52.4	
						RPD = 0.83	
13 Endrin							
1	6.529	6.528	0.001	123446049	50.0	52.2	
2	6.425	6.425	0.000	264173870	50.0	52.4	
						RPD = 0.53	
12 4,4'-DDD							
1	6.603	6.603	0.000	117790142	50.0	51.4	
2	6.570	6.570	0.000	250519900	50.0	51.0	
						RPD = 0.66	
10 Endosulfan II							
1	6.812	6.811	0.001	112403552	50.0	50.7	
2	6.694	6.694	0.000	238991600	50.0	50.3	
						RPD = 0.63	
14 4,4'-DDT							
1	6.984	6.984	0.000	107013536	50.0	57.4	
2	7.004	7.005	-0.001	237517383	50.0	55.1	
						RPD = 4.08	
27 Endrin aldehyde							
1	7.377	7.376	0.001	97646117	50.0	48.6	
2	7.176	7.176	0.000	208765977	50.0	48.9	
						RPD = 0.66	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.627	7.627	0.000	53481063	50.0	51.4	
2	7.899	7.900	-0.001	110249688	50.0	47.3	
						RPD = 8.28	
30 Endosulfan sulfate							
1	7.883	7.882	0.001	109226992	50.0	47.9	
2	7.536	7.536	0.000	240695208	50.0	49.7	
						RPD = 3.53	
1 Endrin ketone							
1	8.173	8.172	0.001	120968296	50.0	49.1	
2	8.119	8.119	0.000	259482411	50.0	49.7	
						RPD = 1.31	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.209	-0.001	93273503	50.0	47.5	M
2	9.408	9.408	0.000	196162702	50.0	48.4	M
						RPD = 1.84	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTL6_00013 Amount Added: 1.00 Units: mL

Report Date: 31-Oct-2016 08:36:26 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-014.D

Injection Date: 29-Oct-2016 15:35:08 Instrument ID: GC75

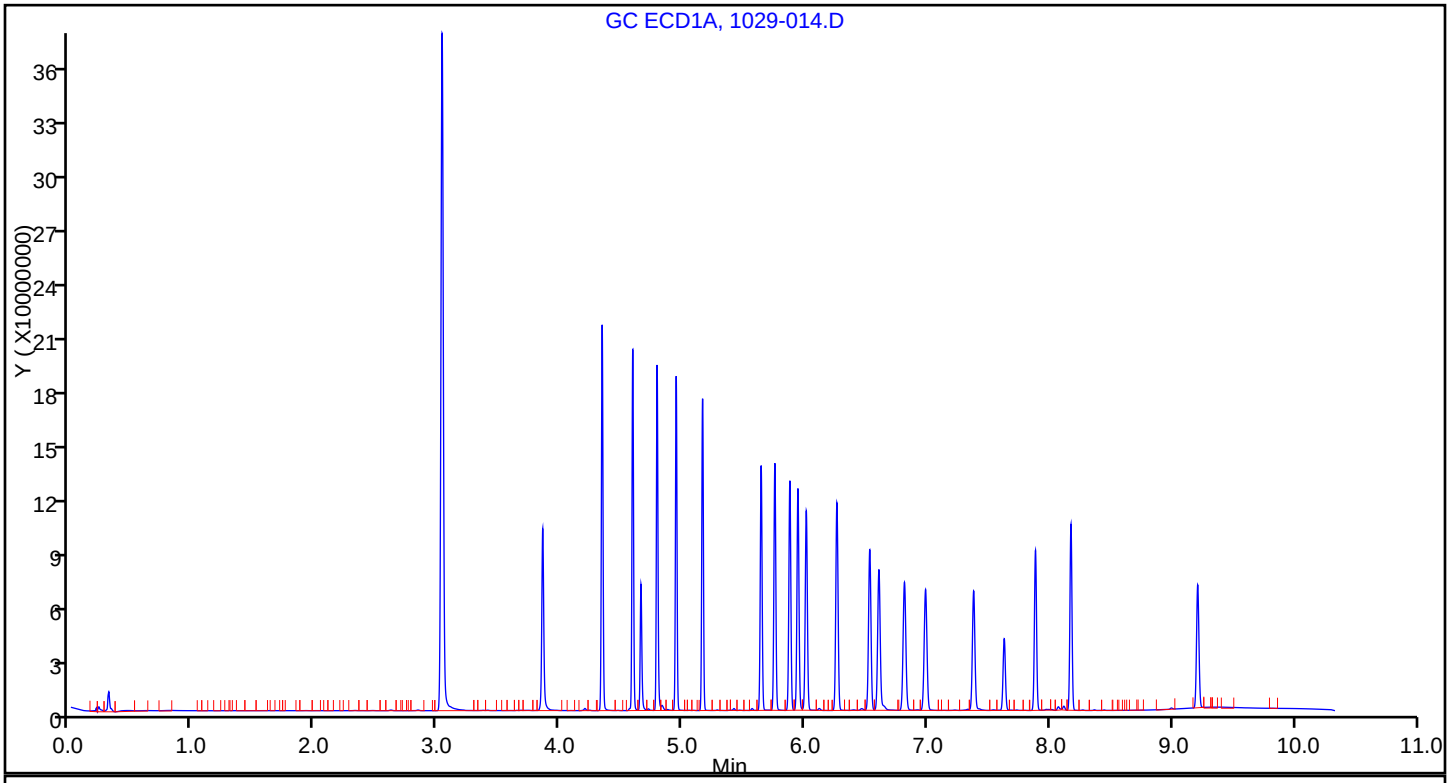
Lims ID: STD006 PEST L6

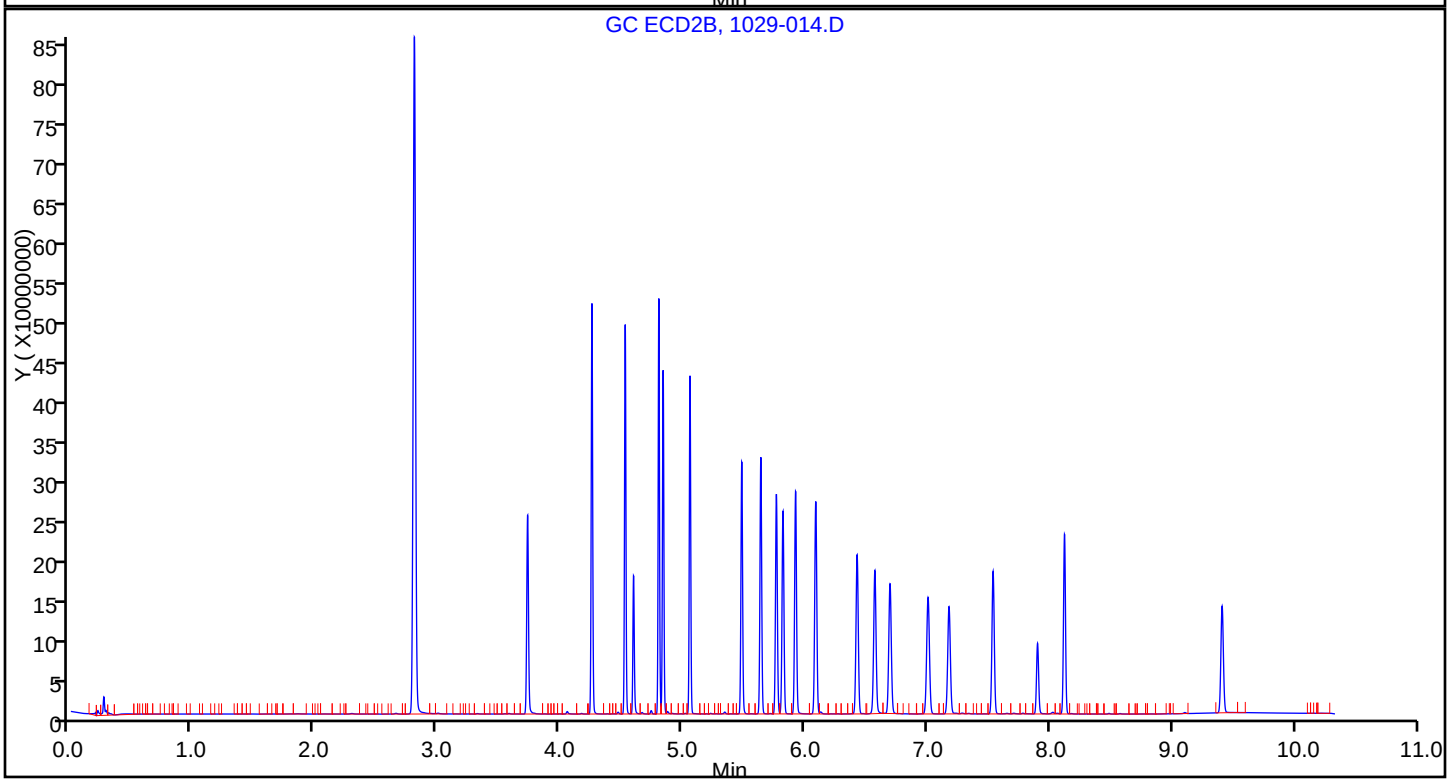
Client ID:

Operator ID: SMH ALS Bottle#: 12 Worklist Smp#: 14

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

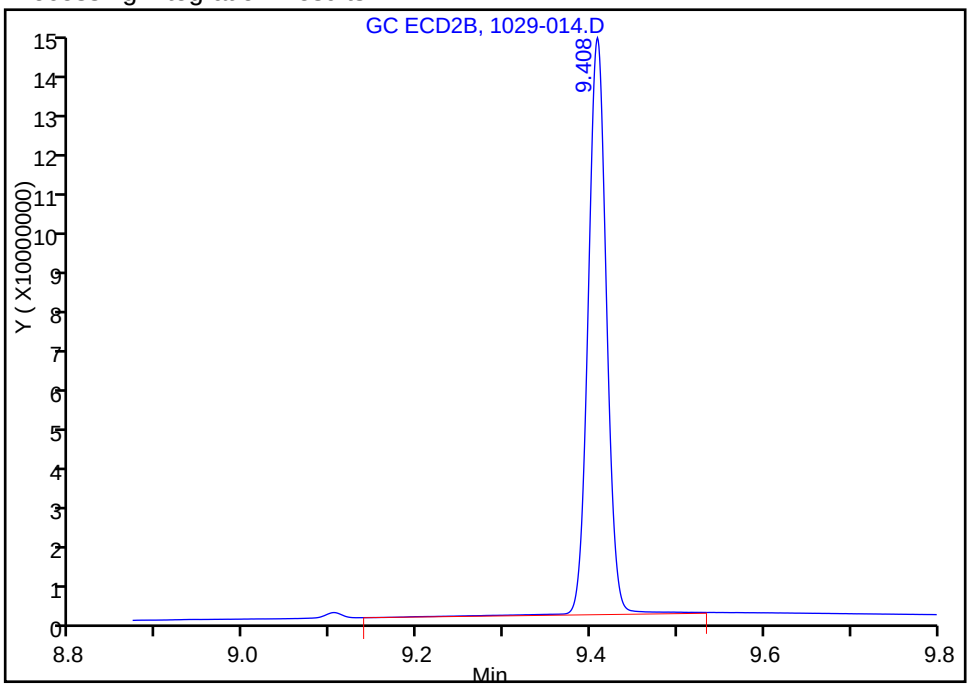
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-014.D
Injection Date: 29-Oct-2016 15:35:08 Instrument ID: GC75
Lims ID: STD006 PEST L6
Client ID:
Operator ID: SMH ALS Bottle#: 12 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

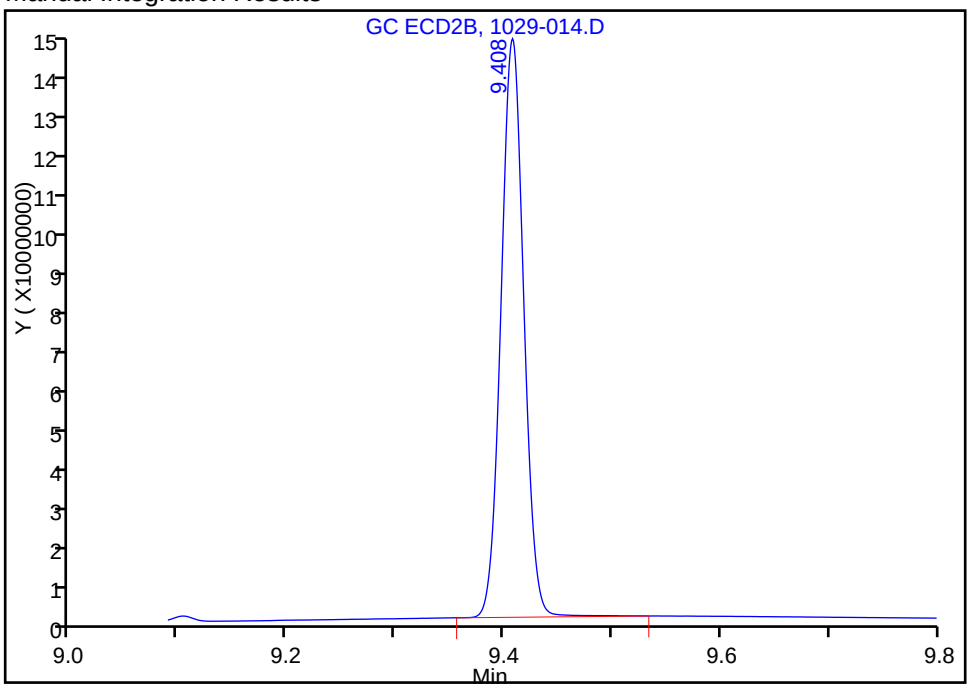
Processing Integration Results

RT: 9.41
Area: 199677608
Amount: 49.142606
Amount Units: ug/l



Manual Integration Results

RT: 9.41
Area: 196162702
Amount: 48.420376
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:31:39
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D
Lims ID: STD007 PEST L7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 29-Oct-2016 15:50:50 ALS Bottle#: 13 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-0036262-015
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:36:31 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 31-Oct-2016 08:33:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.035	3.035	0.001	520005491	200.0	200.0	
2	2.808	2.808	0.001	1182954755	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.857	3.856	0.001	246546848	100.0	104.0	
2	3.733	3.733	0.000	538403207	100.0	103.6	
						RPD = 0.45	
11 alpha-BHC							
1	4.343	4.342	0.001	411807304	100.0	118.1	
2	4.258	4.258	0.000	925462604	100.0	118.2	
						RPD = 0.08	
2 gamma-BHC (Lindane)							
1	4.592	4.591	0.001	381242272	100.0	115.7	
2	4.531	4.530	0.001	856343375	100.0	116.6	
						RPD = 0.82	
6 beta-BHC							
1	4.659	4.659	0.000	137749828	100.0	97.8	
2	4.598	4.598	0.000	296810839	100.0	98.8	
						RPD = 1.02	
18 delta-BHC							
1	4.791	4.790	0.001	359044709	100.0	116.4	
2	4.805	4.805	0.000	852495346	100.0	118.1	
						RPD = 1.51	
19 Heptachlor							
1	4.947	4.946	0.001	345123231	100.0	112.4	
2	4.840	4.840	0.000	710791806	100.0	106.5	
						RPD = 5.34	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.162	5.162	0.000	340049282	100.0	110.9	
2	5.060	5.060	0.000	723567586	100.0	109.4	
						RPD = 1.33	
26 Heptachlor epoxide							
1	5.641	5.640	0.001	289154710	100.0	102.9	
2	5.483	5.482	0.001	612480840	100.0	101.5	
						RPD = 1.33	
25 gamma-Chlordane							
1	5.753	5.752	0.001	316078369	100.0	109.5	
2	5.638	5.638	0.000	662886894	100.0	108.4	
						RPD = 0.98	
15 alpha-Chlordane							
1	5.875	5.875	0.000	301681856	100.0	106.8	
2	5.765	5.765	0.000	571767939	100.0	102.3	
						RPD = 4.29	
16 4,4'-DDE							
1	5.941	5.941	0.000	294256733	100.0	112.9	
2	5.922	5.921	0.001	650342694	100.0	113.9	
						RPD = 0.91	
7 Endosulfan I							
1	6.009	6.009	0.000	273853676	100.0	102.1	
2	5.819	5.819	0.000	558505416	100.0	100.8	
						RPD = 1.29	
29 Dieldrin							
1	6.260	6.260	0.000	308007045	100.0	108.3	
2	6.088	6.087	0.001	656446934	100.0	106.7	
						RPD = 1.43	
13 Endrin							
1	6.528	6.528	0.000	254601814	100.0	108.2	
2	6.426	6.425	0.001	519980818	100.0	102.1	
						RPD = 5.74	
12 4,4'-DDD							
1	6.603	6.603	0.000	247836686	100.0	108.7	
2	6.570	6.570	0.000	531764792	100.0	107.2	
						RPD = 1.38	
10 Endosulfan II							
1	6.812	6.811	0.001	238444451	100.0	108.1	
2	6.693	6.694	-0.001	507364664	100.0	105.8	
						RPD = 2.16	
14 4,4'-DDT							
1	6.985	6.984	0.001	235094443	100.0	126.7	
2	7.004	7.005	-0.001	514064249	100.0	118.0	
						RPD = 7.17	
27 Endrin aldehyde							
1	7.377	7.376	0.001	200013594	100.0	100.0	
2	7.176	7.176	0.000	418739887	100.0	97.0	
						RPD = 3.05	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.627	7.627	0.000	108798461	100.0	105.2	
2	7.899	7.900	-0.001	217550410	100.0	92.4	
						RPD = 12.92	
30 Endosulfan sulfate							
1	7.882	7.882	0.000	225606957	100.0	99.6	
2	7.536	7.536	0.000	498065808	100.0	101.7	
						RPD = 2.11	
1 Endrin ketone							
1	8.173	8.172	0.001	248704995	100.0	101.5	
2	8.120	8.119	0.001	529317204	100.0	100.4	
						RPD = 1.08	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.209	-0.001	192546466	100.0	98.7	M
2	9.409	9.408	0.001	394758829	100.0	96.4	M
						RPD = 2.31	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

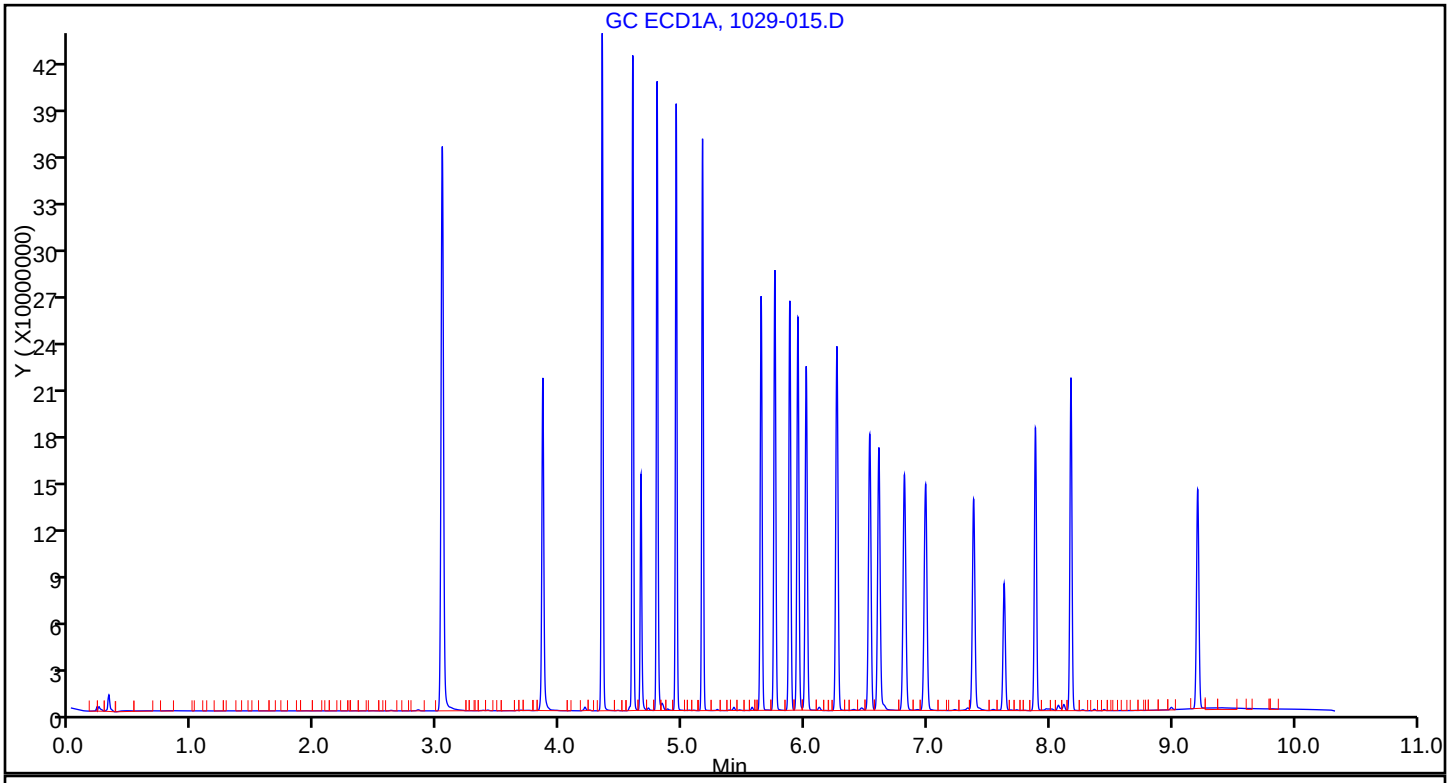
GCPESTL7_00013 Amount Added: 1.00 Units: mL

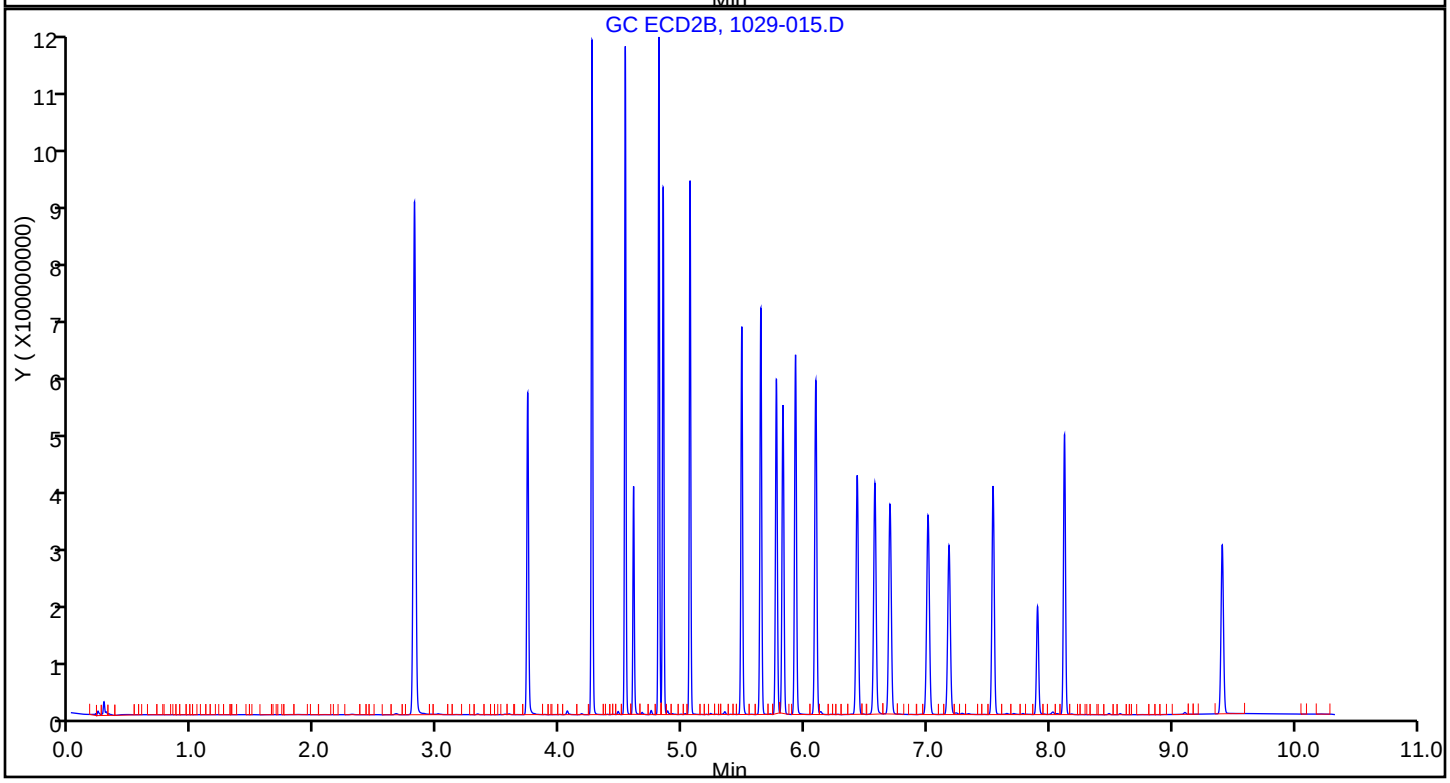
Report Date: 31-Oct-2016 08:36:34 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Injection Date:	29-Oct-2016 15:50:50	Instrument ID:	GC75		
Lims ID:	STD007 PEST L7				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	13	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

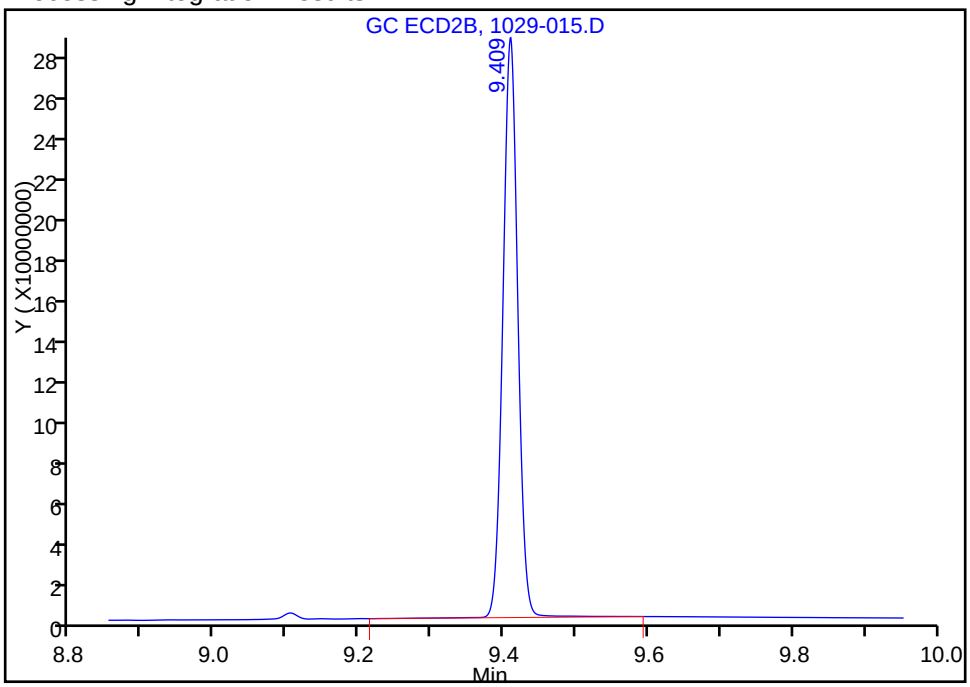
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D
Injection Date: 29-Oct-2016 15:50:50 Instrument ID: GC75
Lims ID: STD007 PEST L7
Client ID:
Operator ID: SMH ALS Bottle#: 13 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

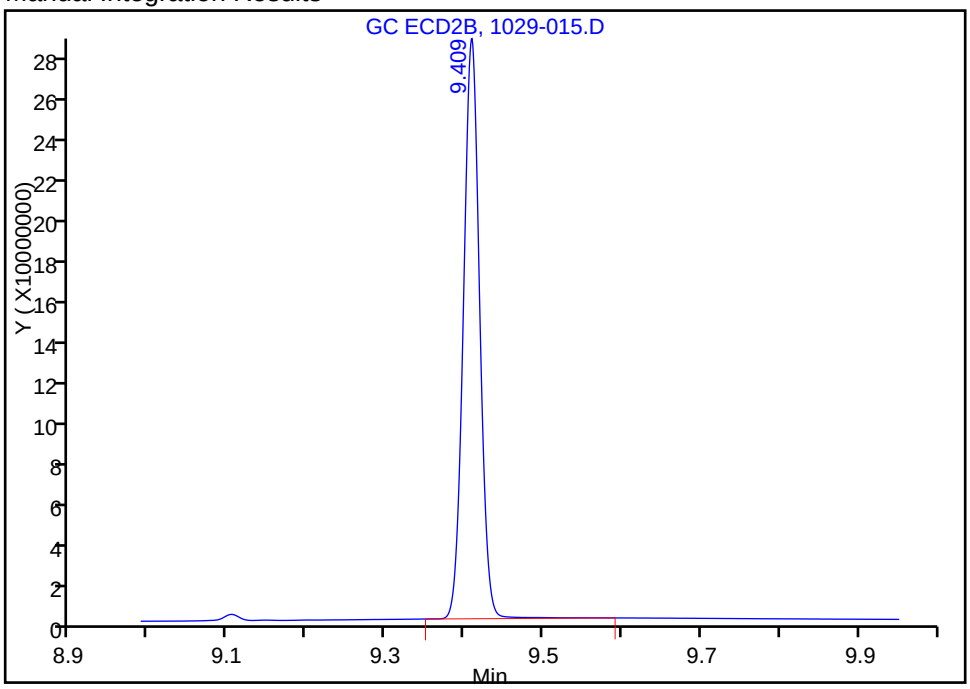
Processing Integration Results

RT: 9.41
Area: 396132810
Amount: 96.718712
Amount Units: ug/l



Manual Integration Results

RT: 9.41
Area: 394758829
Amount: 96.429457
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:33:33
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (1): PEM 320-135054/3 Instrument ID (1): GC75

GC Column (1): STX-CLP I ID: 0.32(mm) Date Analyzed (1): 10/29/2016 10:39

ANALYTE	RT	RESOLUTION (%)
Tetrachloro-m-xylene	3.86	100.0
4,4'-DDE	5.95	100.0
Endrin	6.53	100.0
4,4'-DDD	6.65	100.0
4,4'-DDT	6.99	100.0
Endrin aldehyde	7.38	100.0
Endrin ketone	8.18	100.0

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (2): PEM 320-135054/3 Instrument ID (2): GC75

GC Column (2): STX-CLP II ID: 0.32(mm) Date Analyzed (2): 10/29/2016 10:39

ANALYTE	RT	RESOLUTION (%)
Tetrachloro-m-xylene	3.73	100.0
4,4'-DDE	5.92	100.0
Endrin	6.43	100.0
4,4'-DDD	6.58	100.0
4,4'-DDT	7.01	100.0
Endrin aldehyde	7.18	100.0
Endrin ketone	8.12	100.0

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (1): PEM 320-135416/2 Instrument ID (1): GC75

GC Column (1): STX-CLP I ID: 0.32(mm) Date Analyzed (1): 11/01/2016 10:02

ANALYTE	RT	RESOLUTION (%)
Tetrachloro-m-xylene	3.85	100.0
4,4'-DDE	5.94	100.0
Endrin	6.52	100.0
4,4'-DDD	6.64	100.0
4,4'-DDT	6.98	100.0
Endrin aldehyde	7.37	100.0
Endrin ketone	8.17	100.0

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID (2): PEM 320-135416/2 Instrument ID (2): GC75

GC Column (2): STX-CLP II ID: 0.32(mm) Date Analyzed (2): 11/01/2016 10:02

ANALYTE	RT	RESOLUTION (%)
Tetrachloro-m-xylene	3.73	100.0
4,4'-DDE	5.91	100.0
Endrin	6.42	100.0
4,4'-DDD	6.57	100.0
4,4'-DDT	6.99	100.0
Endrin aldehyde	7.17	100.0
Endrin ketone	8.11	100.0

FORM VII
PESTICIDES PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: PEM 320-135054/3 Calibration Date: 10/29/2016 10:39

Instrument ID: GC75 Calib Start Date: 10/27/2016 14:43

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/27/2016 16:17

Lab File ID: 1029-003.D Conc. Units: ug/L

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
Endrin	6.53	219421250	1.06	15	
Endrin aldehyde	7.38	260012			
Endrin ketone	8.18	2086767			

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
4,4'-DDT	6.99	170122308	2.15	15	
4,4'-DDD	6.65	3229039			
4,4'-DDE	5.95	513248			

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-003.D
Lims ID: PEM
Client ID:
Sample Type: PEM
Inject. Date: 29-Oct-2016 10:39:58 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEM
Operator ID: SMH Instrument ID: GC75
Sublist:

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:36:31 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 29-Oct-2016 11:11:10

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 3 Tetrachloro-m-xylene							
1	3.859	3.856	0.003	48300839	NR	NR	
2	3.731	3.733	-0.002	87655916	NR	NR	
						RPD = NaN	
16 4,4'-DDE							
1	5.946	5.941	0.005	513248		NR	
2	5.922	5.921	0.001	955062		NR	
						RPD = NaN	
13 Endrin							
1	6.532	6.528	0.004	219421250	NR	NR	
2	6.426	6.425	0.001	431816306	NR	NR	
						RPD = NaN	
12 4,4'-DDD							
1	6.646	6.603	0.043	3229039		NR	a
2	6.576	6.570	0.006	3585630		NR	a
						RPD = NaN	
14 4,4'-DDT							
1	6.989	6.984	0.005	170122308	NR	NR	
2	7.005	7.005	0.000	335875504	NR	NR	
						RPD = NaN	
27 Endrin aldehyde							
1	7.377	7.376	0.001	260012		NR	
2	7.177	7.176	0.001	551161		NR	
						RPD = NaN	
1 Endrin ketone							
1	8.175	8.172	0.003	2086767		NR	
2	8.119	8.119	0.000	3700665		NR	
						RPD = NaN	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 23 DCB Decachlorobiphenyl							
1	9.212	9.209	0.003	29880695	NR	NR	
2	9.409	9.408	0.001	63778575	NR	NR	
						RPD =	NaN

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

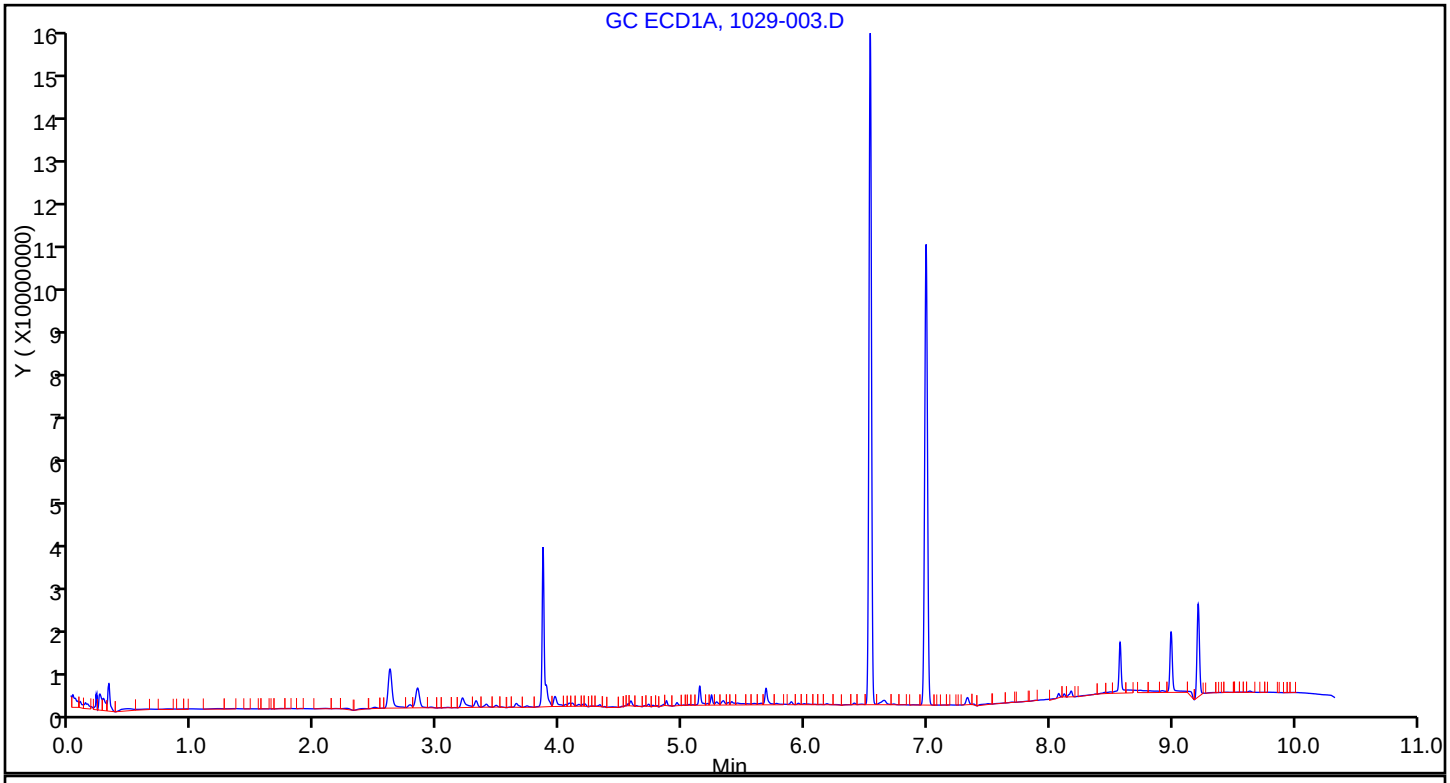
GCPESTPEM_00006 Amount Added: 1.00 Units: mL

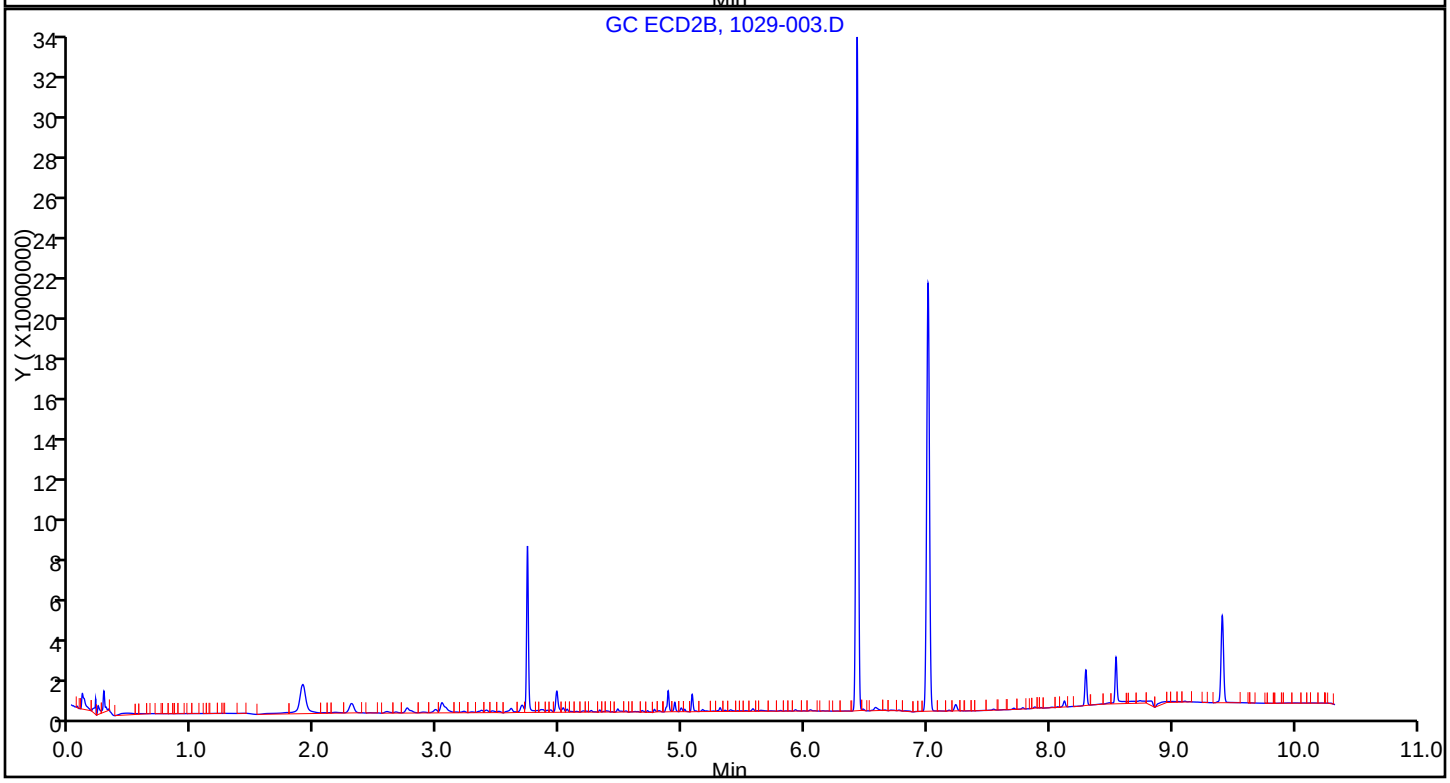
Report Date: 31-Oct-2016 08:36:45 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-003.D

Injection Date:	29-Oct-2016 10:39:58	Instrument ID:	GC75		
Lims ID:	PEM				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





FORM VII
PESTICIDES PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: PEM 320-135054/3 Calibration Date: 10/29/2016 10:39

Instrument ID: GC75 Calib Start Date: 10/27/2016 14:43

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/27/2016 16:17

Lab File ID: 1029-003.D Conc. Units: ug/L

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
Endrin	6.43	431816306	0.98	15	
Endrin aldehyde	7.18	551161			
Endrin ketone	8.12	3700665			

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
4,4'-DDT	7.01	335875504	1.33	15	
4,4'-DDD	6.58	3585630			
4,4'-DDE	5.92	955062			

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-003.D
Lims ID: PEM
Client ID:
Sample Type: PEM
Inject. Date: 29-Oct-2016 10:39:58 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEM
Operator ID: SMH Instrument ID: GC75
Sublist:

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 31-Oct-2016 08:36:31 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 29-Oct-2016 11:11:10

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 3 Tetrachloro-m-xylene							
1	3.859	3.856	0.003	48300839	NR	NR	
2	3.731	3.733	-0.002	87655916	NR	NR	
						RPD = NaN	
16 4,4'-DDE							
1	5.946	5.941	0.005	513248		NR	
2	5.922	5.921	0.001	955062		NR	
						RPD = NaN	
13 Endrin							
1	6.532	6.528	0.004	219421250	NR	NR	
2	6.426	6.425	0.001	431816306	NR	NR	
						RPD = NaN	
12 4,4'-DDD							
1	6.646	6.603	0.043	3229039		NR	a
2	6.576	6.570	0.006	3585630		NR	a
						RPD = NaN	
14 4,4'-DDT							
1	6.989	6.984	0.005	170122308	NR	NR	
2	7.005	7.005	0.000	335875504	NR	NR	
						RPD = NaN	
27 Endrin aldehyde							
1	7.377	7.376	0.001	260012		NR	
2	7.177	7.176	0.001	551161		NR	
						RPD = NaN	
1 Endrin ketone							
1	8.175	8.172	0.003	2086767		NR	
2	8.119	8.119	0.000	3700665		NR	
						RPD = NaN	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 23 DCB Decachlorobiphenyl							
1	9.212	9.209	0.003	29880695	NR	NR	
2	9.409	9.408	0.001	63778575	NR	NR	
						RPD =	NaN

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

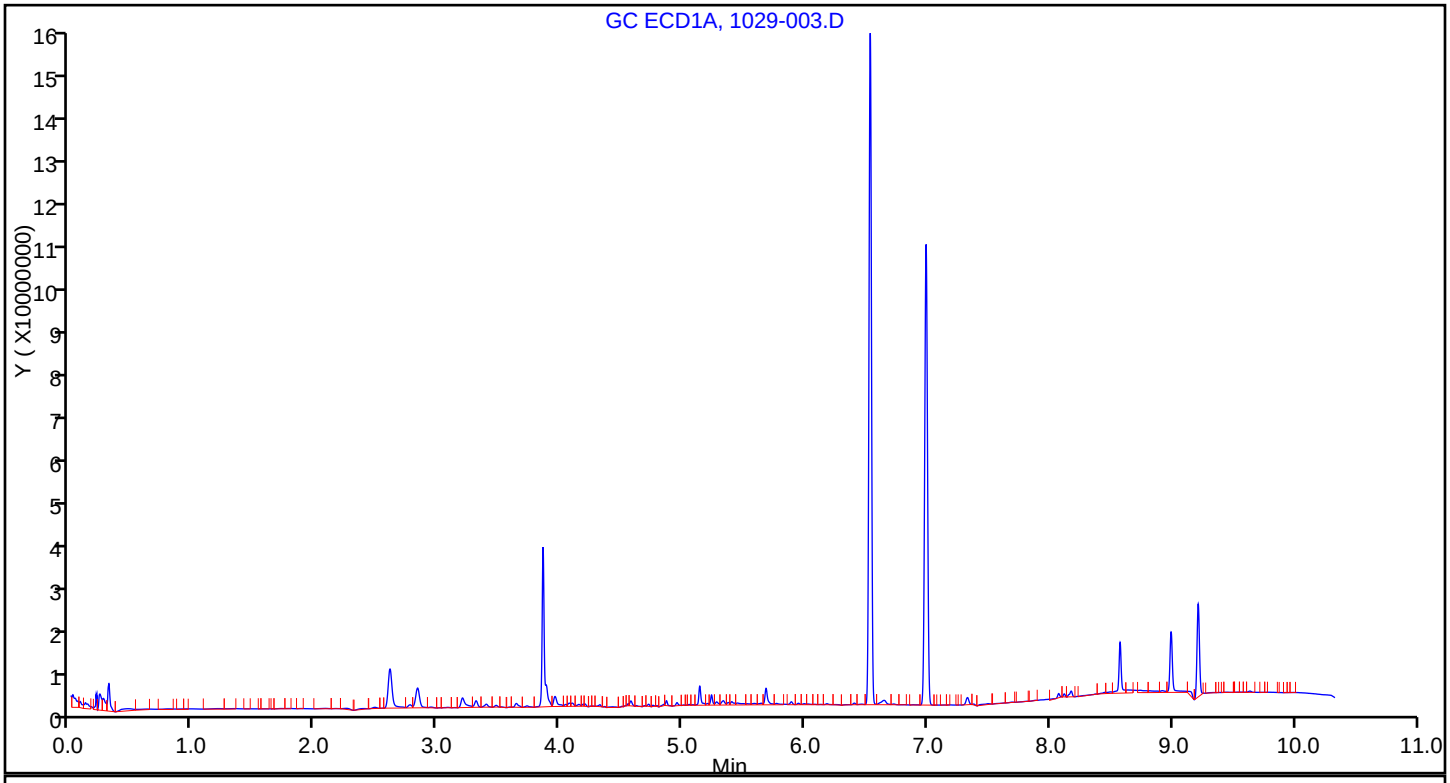
GCPESTPEM_00006 Amount Added: 1.00 Units: mL

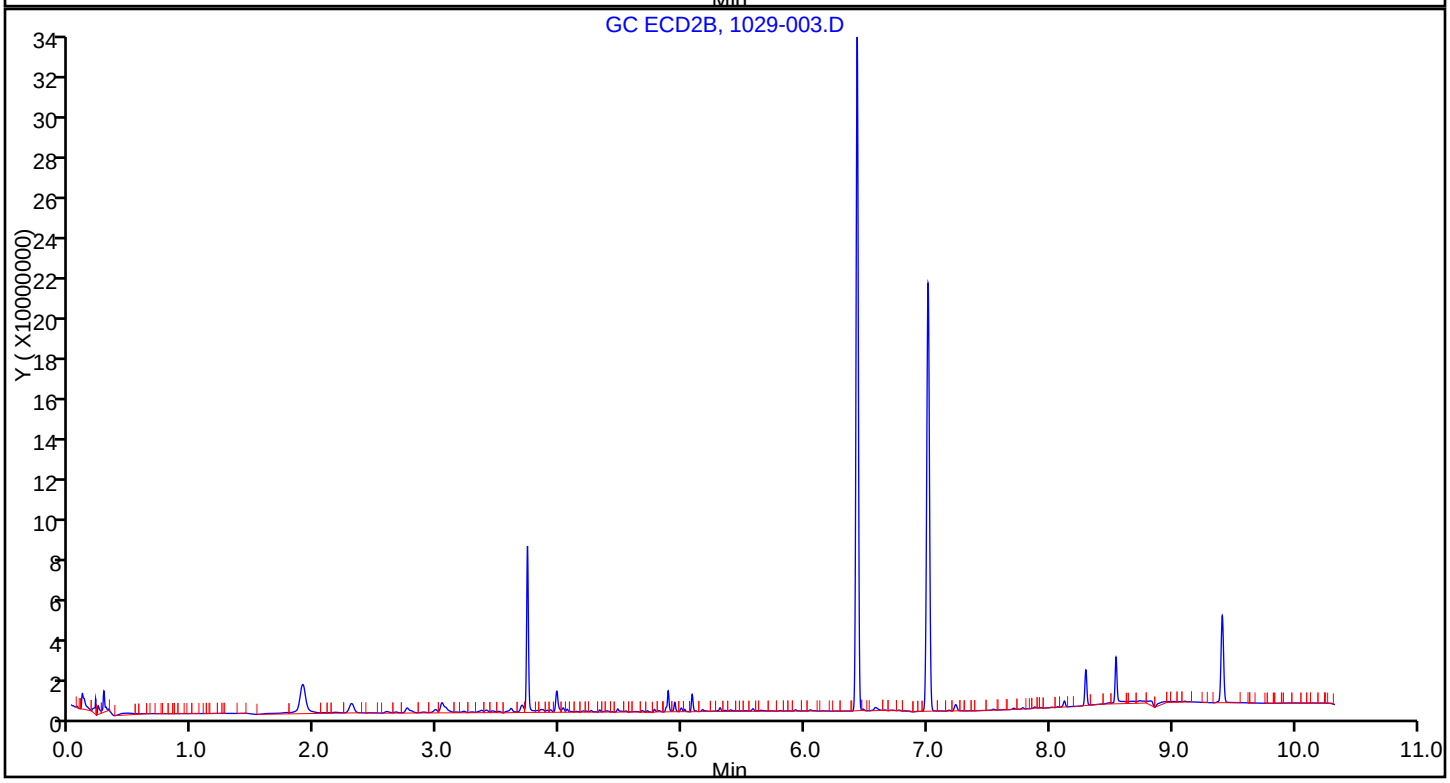
Report Date: 31-Oct-2016 08:36:46 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-003.D

Injection Date:	29-Oct-2016 10:39:58	Instrument ID:	GC75		
Lims ID:	PEM				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





FORM VII
PESTICIDES PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: PEM 320-135416/2 Calibration Date: 11/01/2016 10:02

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-002.D Conc. Units: ug/L

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
Endrin	6.52	235601956	3.08	15	
Endrin aldehyde	7.37	972084			
Endrin ketone	8.17	6525314			

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
4,4'-DDT	6.98	189978601	3.85	15	
4,4'-DDD	6.64	7120438			
4,4'-DDE	5.94	485361			

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-002.D
Lims ID: PEM
Client ID:
Sample Type: PEM
Inject. Date: 01-Nov-2016 10:02:52 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEM
Operator ID: SMH Instrument ID: GC75
Sublist:

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:49:32 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:49:32

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 3 Tetrachloro-m-xylene							
1	3.854	3.852	0.002	48150482	NR	NR	
2	3.727	3.727	0.000	103037421	NR	NR	
						RPD = NaN	
16 4,4'-DDE							
1	5.936	5.932	0.004	485361		NR	
2	5.913	5.912	0.001	1043996		NR	
						RPD = NaN	
13 Endrin							
1	6.522	6.516	0.006	235601956	NR	NR	
2	6.415	6.413	0.002	491065346	NR	NR	
						RPD = NaN	
12 4,4'-DDD							
1	6.642	6.591	0.051	7120438		NR	a
2	6.565	6.557	0.008	6426307		NR	a
						RPD = NaN	
14 4,4'-DDT							
1	6.976	6.970	0.006	189978601	NR	NR	
2	6.994	6.990	0.004	391509857	NR	NR	
						RPD = NaN	
27 Endrin aldehyde							
1	7.370	7.365	0.005	972084		NR	
2	7.165	7.163	0.002	2247314		NR	
						RPD = NaN	
1 Endrin ketone							
1	8.165	8.163	0.002	6525314		NR	
2	8.110	8.110	0.000	9198365		NR	
						RPD = NaN	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 23 DCB Decachlorobiphenyl							
1	9.204	9.198	0.006	37599072	NR	NR	
2	9.400	9.397	0.003	84071710	NR	NR	
						RPD =	NaN

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

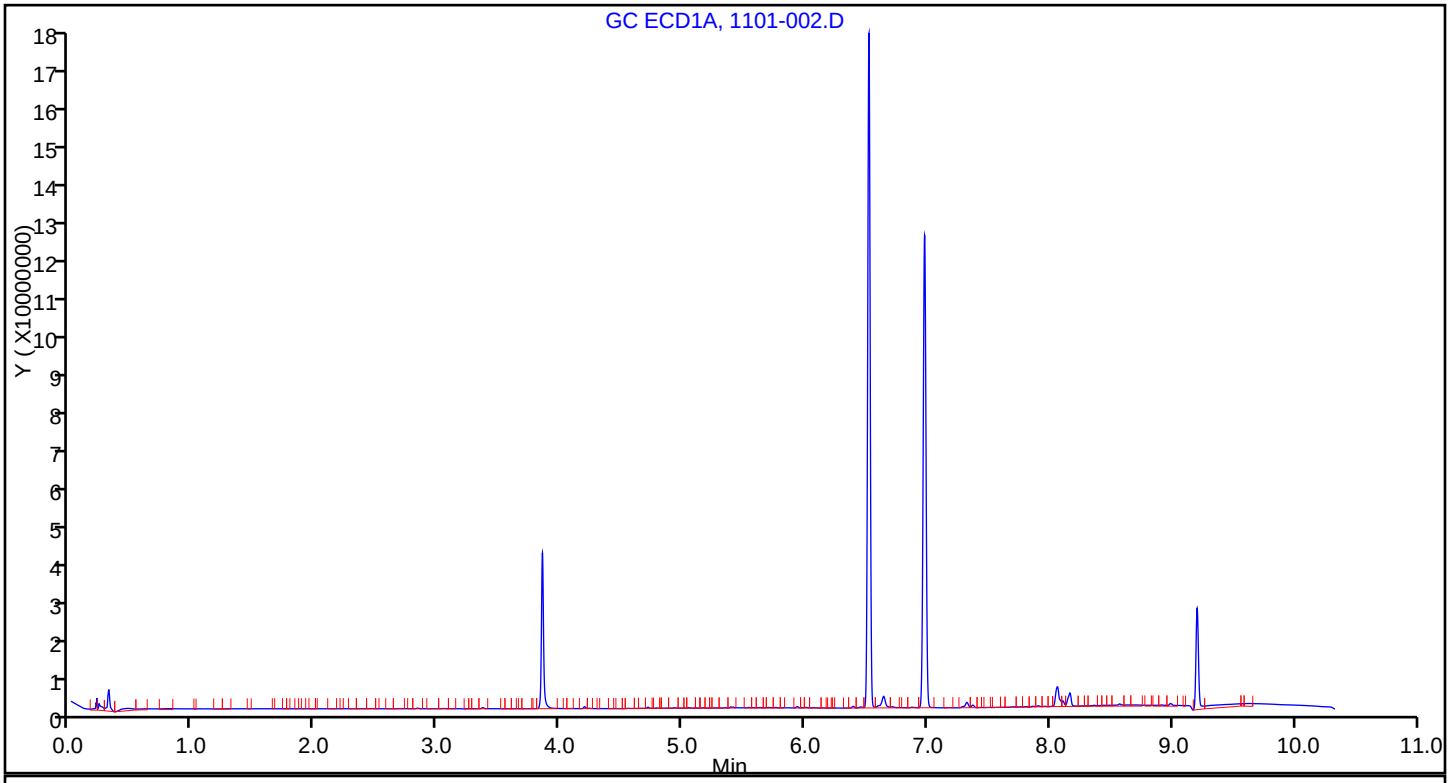
GCPESTPEM_00006 Amount Added: 1.00 Units: mL

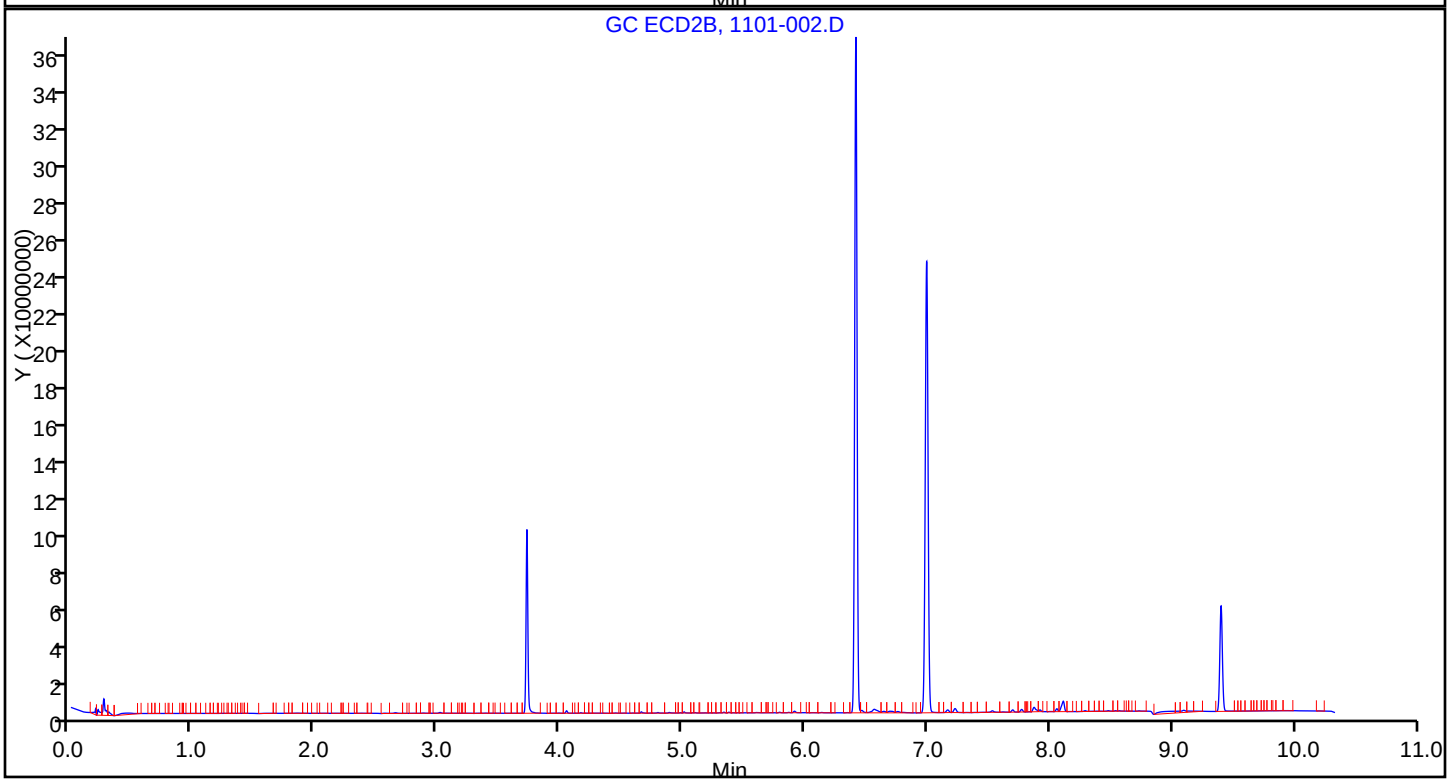
Report Date: 01-Nov-2016 16:49:35 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-002.D

Injection Date:	01-Nov-2016 10:02:52	Instrument ID:	GC75		
Lims ID:	PEM				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





FORM VII
PESTICIDES PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: PEM 320-135416/2 Calibration Date: 11/01/2016 10:02

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-002.D Conc. Units: ug/L

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
Endrin	6.42	491065346	2.28	15	
Endrin aldehyde	7.17	2247314			
Endrin ketone	8.11	9198365			

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
4,4'-DDT	6.99	391509857	1.87	15	
4,4'-DDD	6.57	6426307			
4,4'-DDE	5.91	1043996			

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-002.D
Lims ID: PEM
Client ID:
Sample Type: PEM
Inject. Date: 01-Nov-2016 10:02:52 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: PEM
Operator ID: SMH Instrument ID: GC75
Sublist:

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:49:32 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:49:32

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 3 Tetrachloro-m-xylene							
1	3.854	3.852	0.002	48150482	NR	NR	
2	3.727	3.727	0.000	103037421	NR	NR	
						RPD = NaN	
16 4,4'-DDE							
1	5.936	5.932	0.004	485361		NR	
2	5.913	5.912	0.001	1043996		NR	
						RPD = NaN	
13 Endrin							
1	6.522	6.516	0.006	235601956	NR	NR	
2	6.415	6.413	0.002	491065346	NR	NR	
						RPD = NaN	
12 4,4'-DDD							
1	6.642	6.591	0.051	7120438		NR	a
2	6.565	6.557	0.008	6426307		NR	a
						RPD = NaN	
14 4,4'-DDT							
1	6.976	6.970	0.006	189978601	NR	NR	
2	6.994	6.990	0.004	391509857	NR	NR	
						RPD = NaN	
27 Endrin aldehyde							
1	7.370	7.365	0.005	972084		NR	
2	7.165	7.163	0.002	2247314		NR	
						RPD = NaN	
1 Endrin ketone							
1	8.165	8.163	0.002	6525314		NR	
2	8.110	8.110	0.000	9198365		NR	
						RPD = NaN	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 23 DCB Decachlorobiphenyl							
1	9.204	9.198	0.006	37599072	NR	NR	
2	9.400	9.397	0.003	84071710	NR	NR	
						RPD =	NaN

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

GCPESTPEM_00006 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 16:49:36 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-002.D

Injection Date: 01-Nov-2016 10:02:52 Instrument ID: GC75

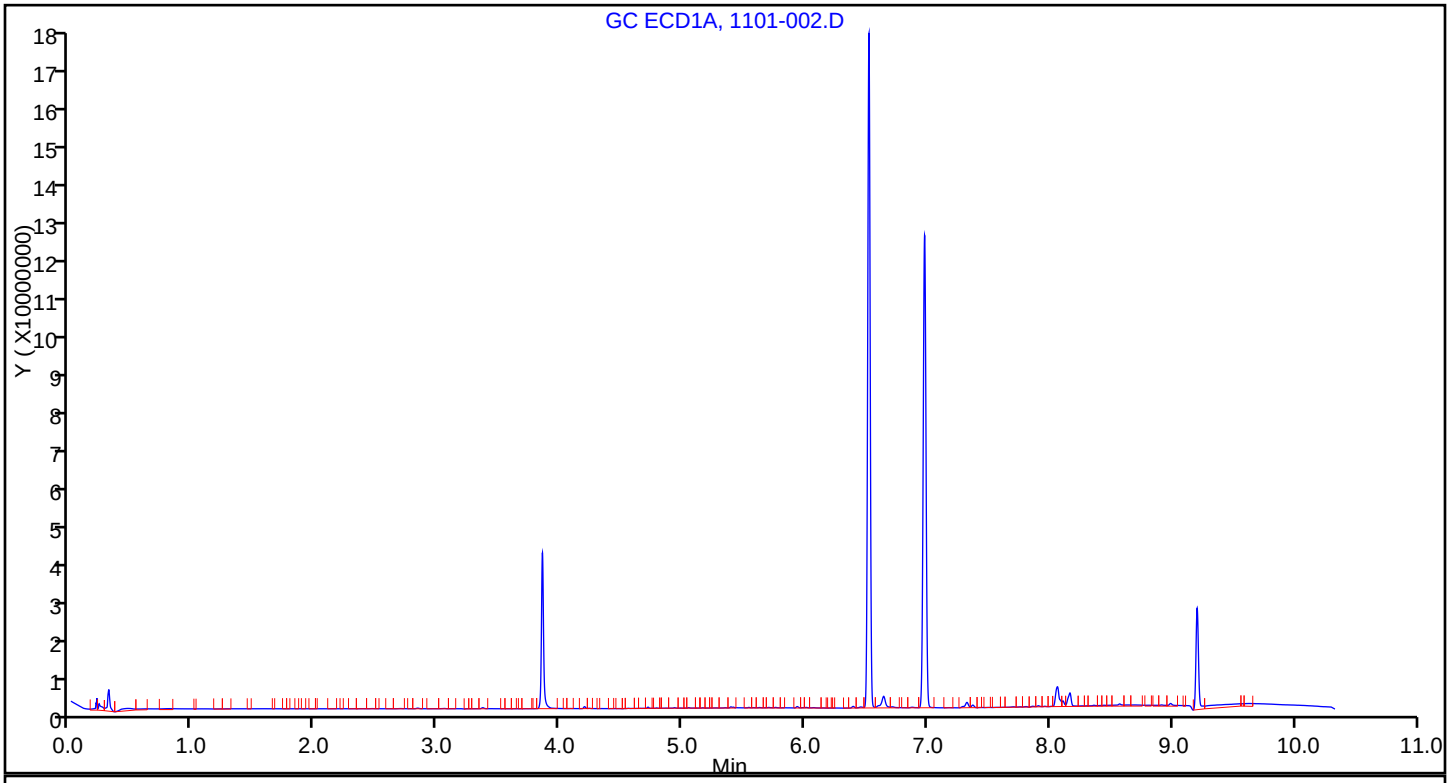
Lims ID: PEM

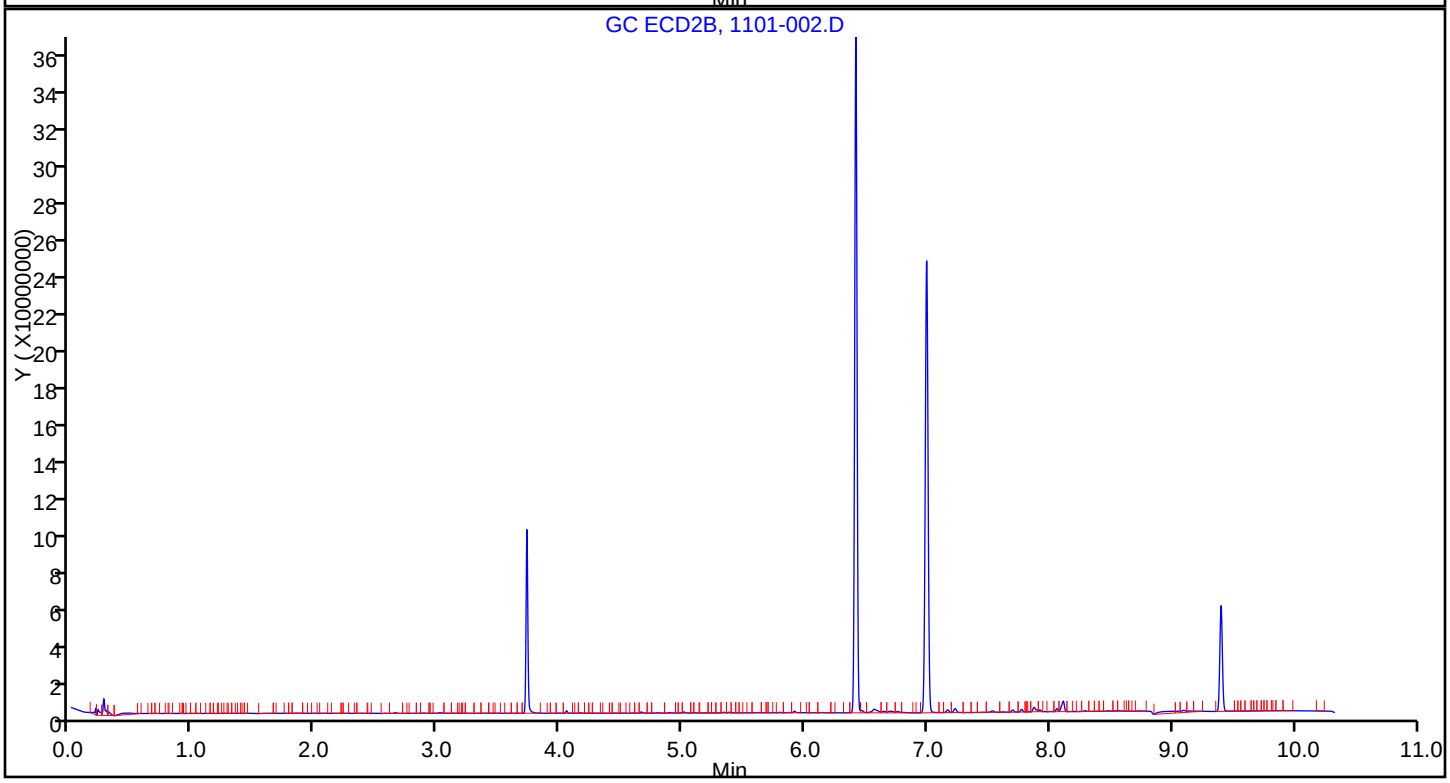
Client ID:

Operator ID: SMH ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-134186/19 Calibration Date: 10/24/2016 18:21

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1024-019.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Ave	0.0455	0.0503		553	500	10.6	20.0
Toxaphene Peak 2	Ave	0.0267	0.0302		564	500	12.9	20.0
Toxaphene Peak 3	Ave	0.0287	0.0332		579	500	15.8	20.0
Toxaphene Peak 4	Ave	0.0346	0.0391		564	500	12.9	20.0
Toxaphene Peak 5	Ave	0.0301	0.0337		559	500	11.8	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-134186/19 Calibration Date: 10/24/2016 18:21

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1024-019.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.80	6.78	6.83
Toxaphene Peak 2	7.28	7.25	7.30
Toxaphene Peak 3	7.54	7.51	7.57
Toxaphene Peak 4	7.67	7.64	7.70
Toxaphene Peak 5	7.78	7.76	7.81

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-019.D
Lims ID: ICV TOX
Client ID:
Sample Type: ICV
Inject. Date: 24-Oct-2016 18:21:49 ALS Bottle#: 19 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX ICV
Operator ID: SMH Instrument ID: GC75
Sublist:

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:37:33 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:25:35

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.037	3.035	0.002	431836868	200.0	200.0	
2	2.810	2.808	0.002	1039715768	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	54346658	500.0	552.8	M
1	7.275	7.274	0.001	32565863	500.0	564.3	M
1	7.542	7.540	0.002	35880806	500.0	578.9	M
1	7.672	7.670	0.002	42196981	500.0	564.4	M
1	7.781	7.780	0.001	36370049	500.0	558.9	M
		Average of Peak Amounts =				563.9	
2	6.677	6.677	0.000	78975338	500.0	535.3	M
2	6.811	6.810	0.001	121707437	500.0	541.8	M
2	7.189	7.187	0.002	86813970	500.0	540.3	M
2	7.810	7.810	0.000	72174921	500.0	553.4	M
2	7.873	7.874	-0.001	39606236	500.0	528.3	M
		Average of Peak Amounts =				539.8	
						RPD = 4.36	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

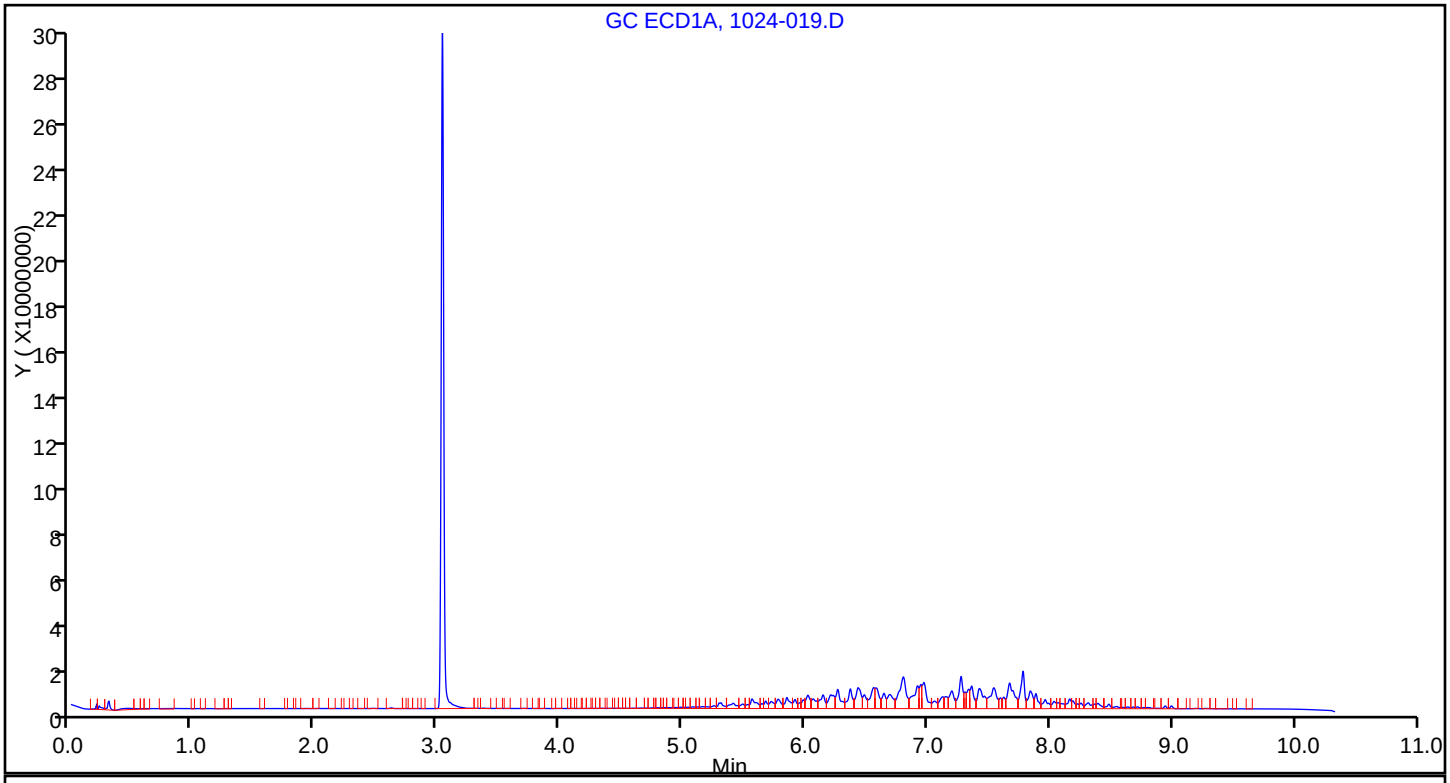
GCTOXIC_00011 Amount Added: 1.00 Units: mL

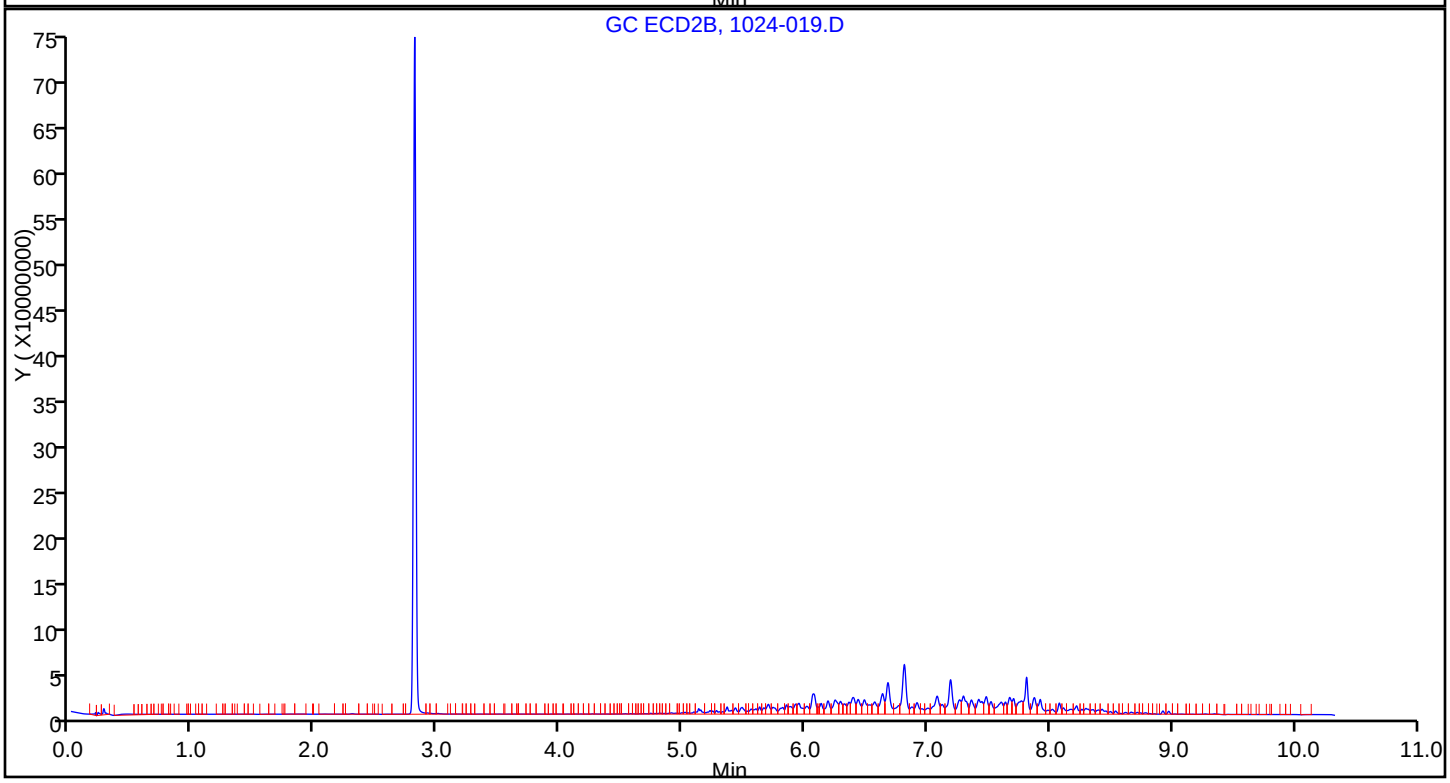
Report Date: 25-Oct-2016 14:37:43 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-019.D

Injection Date:	24-Oct-2016 18:21:49	Instrument ID:	GC75		
Lims ID:	ICV TOX				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	19	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-134186/19 Calibration Date: 10/24/2016 18:21

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1024-019.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Ave	0.0284	0.0304		535	500	7.1	20.0
Toxaphene Peak 2	Ave	0.0432	0.0468		542	500	8.4	20.0
Toxaphene Peak 3	Ave	0.0309	0.0334		540	500	8.1	20.0
Toxaphene Peak 4	Ave	0.0251	0.0278		553	500	10.7	20.0
Toxaphene Peak 5	Ave	0.0144	0.0152		528	500	5.7	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-134186/19 Calibration Date: 10/24/2016 18:21

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1024-019.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.68	6.65	6.70
Toxaphene Peak 2	6.81	6.78	6.84
Toxaphene Peak 3	7.19	7.16	7.21
Toxaphene Peak 4	7.81	7.78	7.84
Toxaphene Peak 5	7.87	7.85	7.90

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-019.D
Lims ID: ICV TOX
Client ID:
Sample Type: ICV
Inject. Date: 24-Oct-2016 18:21:49 ALS Bottle#: 19 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: TOX ICV
Operator ID: SMH Instrument ID: GC75
Sublist:

Method: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 25-Oct-2016 14:37:33 Calib Date: 24-Oct-2016 20:27:18
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-027.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK024

First Level Reviewer: haques Date: 25-Oct-2016 14:25:35

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.037	3.035	0.002	431836868	200.0	200.0	
2	2.810	2.808	0.002	1039715768	200.0	200.0	
32 Toxaphene							M
1	6.802	6.802	0.000	54346658	500.0	552.8	M
1	7.275	7.274	0.001	32565863	500.0	564.3	M
1	7.542	7.540	0.002	35880806	500.0	578.9	M
1	7.672	7.670	0.002	42196981	500.0	564.4	M
1	7.781	7.780	0.001	36370049	500.0	558.9	M
		Average of Peak Amounts =				563.9	
2	6.677	6.677	0.000	78975338	500.0	535.3	M
2	6.811	6.810	0.001	121707437	500.0	541.8	M
2	7.189	7.187	0.002	86813970	500.0	540.3	M
2	7.810	7.810	0.000	72174921	500.0	553.4	M
2	7.873	7.874	-0.001	39606236	500.0	528.3	M
		Average of Peak Amounts =				539.8	
						RPD = 4.36	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

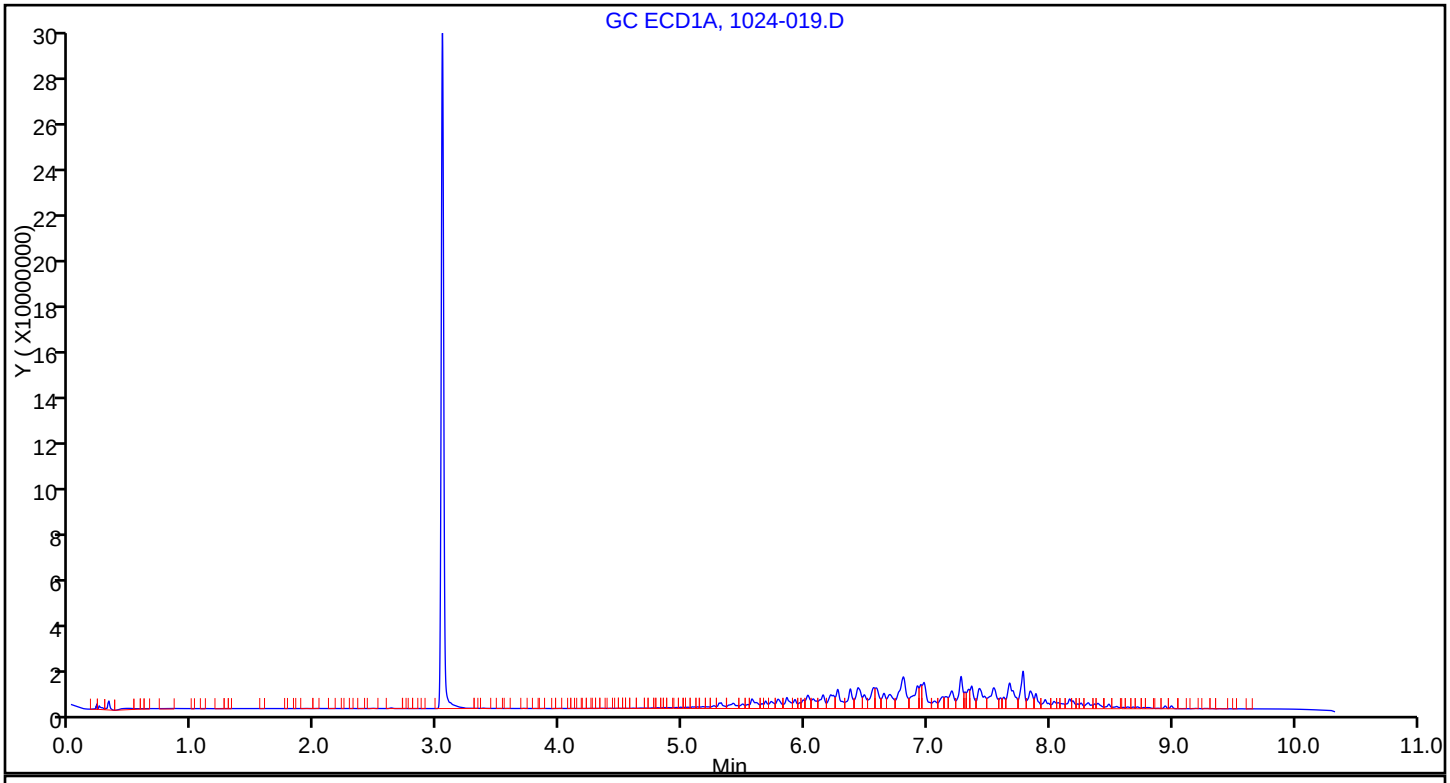
GCTOXIC_00011 Amount Added: 1.00 Units: mL

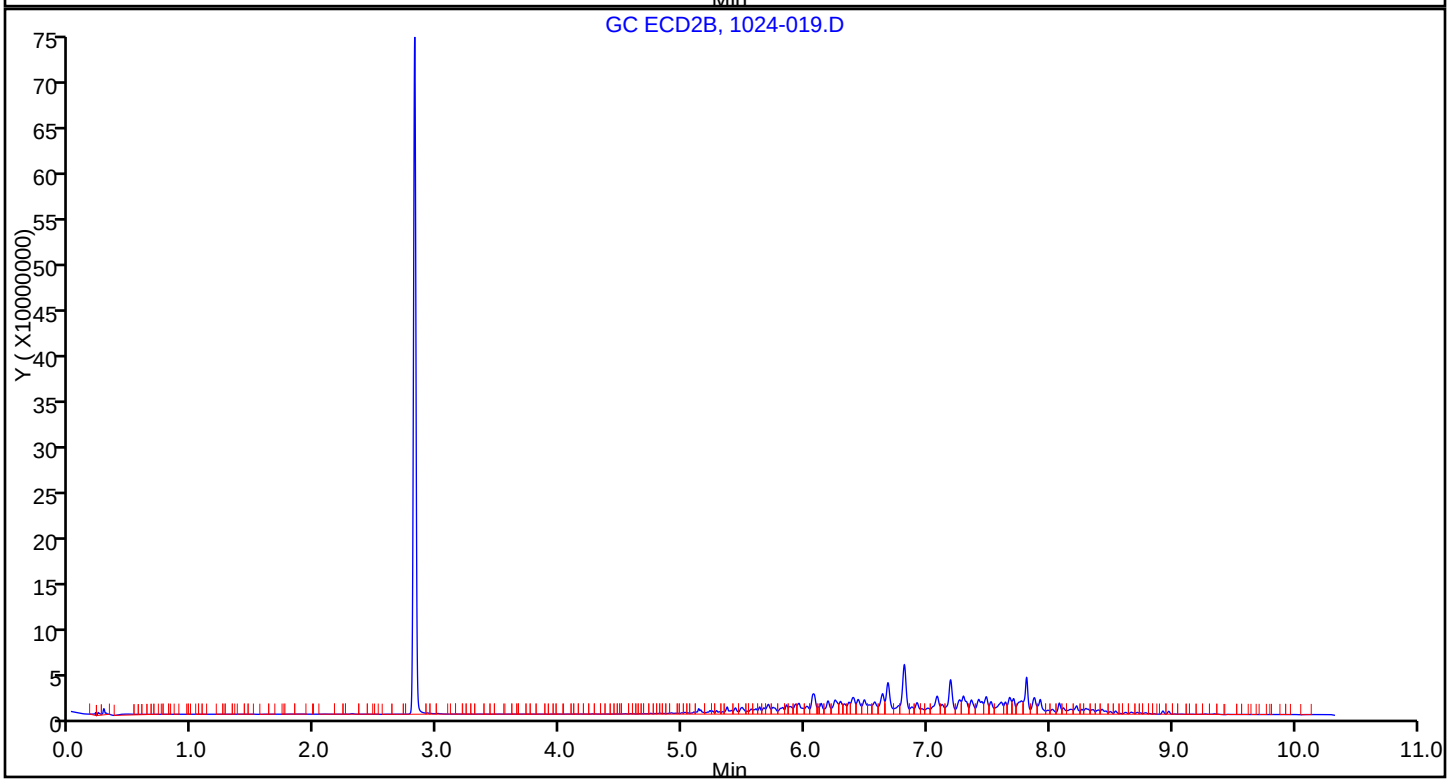
Report Date: 25-Oct-2016 14:37:44 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161024-36049.b\1024-019.D

Injection Date:	24-Oct-2016 18:21:49	Instrument ID:	GC75		
Lims ID:	ICV TOX				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	19	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-135054/17 Calibration Date: 10/29/2016 16:22

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1029-017.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
alpha-BHC	Ave	1.341	1.516		56.5	50.0	13.0	20.0
gamma-BHC (Lindane)	Ave	1.268	1.355		53.4	50.0	6.9	20.0
beta-BHC	Ave	0.5415	0.5185		47.9	50.0	-4.2	20.0
delta-BHC	Ave	1.187	1.280		53.9	50.0	7.9	20.0
Heptachlor	Ave	1.181	1.221		51.7	50.0	3.4	20.0
Aldrin	Ave	1.180	1.291		54.7	50.0	9.4	20.0
Heptachlor epoxide	Ave	1.081	1.088		50.3	50.0	0.6	20.0
gamma-Chlordane	Ave	1.110	1.159		52.2	50.0	4.4	20.0
alpha-Chlordane	Ave	1.087	1.113		51.2	50.0	2.4	20.0
4,4'-DDE	Ave	1.003	1.070		53.3	50.0	6.7	20.0
Endosulfan I	Ave	1.032	1.055		51.1	50.0	2.2	20.0
Dieldrin	Ave	1.094	1.149		52.5	50.0	5.0	20.0
Endrin	Ave	0.9053	0.9185		50.7	50.0	1.5	20.0
4,4'-DDD	Ave	0.8771	0.8991		51.3	50.0	2.5	20.0
Endosulfan II	Ave	0.8485	0.8753		51.6	50.0	3.2	20.0
4,4'-DDT	Ave	0.7135	0.7978		55.9	50.0	11.8	20.0
Endrin aldehyde	Ave	0.7691	0.7676		49.9	50.0	-0.2	20.0
Methoxychlor	Ave	0.3978	0.4004		50.3	50.0	0.7	20.0
Endosulfan sulfate	Ave	0.8713	0.8684		49.8	50.0	-0.3	20.0
Endrin ketone	Ave	0.9428	0.9426		50.0	50.0	-0.0	20.0
Tetrachloro-m-xylene	Ave	0.9113	0.8954		49.1	50.0	-1.8	20.0
DCB Decachlorobiphenyl	Ave	0.7505	0.7420		49.4	50.0	-1.1	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-135054/17 Calibration Date: 10/29/2016 16:22

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1029-017.D

Analyte	RT	RT WINDOW	
		FROM	TO
alpha-BHC	4.34	4.32	4.37
gamma-BHC (Lindane)	4.59	4.57	4.62
beta-BHC	4.66	4.63	4.68
delta-BHC	4.79	4.77	4.82
Heptachlor	4.95	4.92	4.97
Aldrin	5.16	5.14	5.19
Heptachlor epoxide	5.64	5.62	5.67
gamma-Chlordane	5.75	5.73	5.78
alpha-Chlordane	5.88	5.85	5.90
4,4'-DDE	5.94	5.92	5.97
Endosulfan I	6.01	5.98	6.04
Dieldrin	6.26	6.24	6.29
Endrin	6.53	6.50	6.55
4,4'-DDD	6.60	6.58	6.63
Endosulfan II	6.81	6.79	6.84
4,4'-DDT	6.98	6.96	7.01
Endrin aldehyde	7.38	7.35	7.40
Methoxychlor	7.63	7.60	7.65
Endosulfan sulfate	7.88	7.86	7.91
Endrin ketone	8.17	8.15	8.20
Tetrachloro-m-xylene	3.86	3.83	3.88
DCB Decachlorobiphenyl	9.21	9.18	9.23

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-017.D
Lims ID: ICV PEST
Client ID:
Sample Type: ICV
Inject. Date: 29-Oct-2016 16:22:12 ALS Bottle#: 15 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-0036262-017
Operator ID: SMH Instrument ID: GC75
Sublist:

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 13:44:35 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 13:44:35

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.034	0.000	514086952	200.0	200.0	
2	2.808	2.808	0.000	1180053793	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	115071422	50.0	49.1	
2	3.733	3.733	0.000	254985353	50.0	49.2	
						RPD = 0.11	
11 alpha-BHC							
1	4.341	4.342	-0.001	194788030	50.0	56.5	
2	4.259	4.259	0.000	430735805	50.0	55.2	
						RPD = 2.43	
2 gamma-BHC (Lindane)							
1	4.591	4.592	-0.001	174152325	50.0	53.4	
2	4.531	4.530	0.001	387910943	50.0	53.0	
						RPD = 0.92	
6 beta-BHC							
1	4.659	4.659	0.000	66636375	50.0	47.9	
2	4.598	4.599	-0.001	144278801	50.0	48.2	
						RPD = 0.60	
18 delta-BHC							
1	4.791	4.791	0.000	164528218	50.0	53.9	
2	4.805	4.804	0.001	388661219	50.0	54.0	
						RPD = 0.10	
19 Heptachlor							
1	4.946	4.946	0.000	156930795	50.0	51.7	
2	4.841	4.840	0.001	330165044	50.0	49.6	
						RPD = 4.10	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.161	5.162	-0.001	165924525	50.0	54.7	
2	5.060	5.059	0.001	355686229	50.0	53.9	
						RPD = 1.49	
26 Heptachlor epoxide							
1	5.641	5.641	0.000	139792406	50.0	50.3	
2	5.482	5.482	0.000	300445713	50.0	49.9	
						RPD = 0.77	
25 gamma-Chlordane							
1	5.752	5.753	-0.001	148979875	50.0	52.2	
2	5.638	5.638	0.000	316845692	50.0	52.0	
						RPD = 0.48	
15 alpha-Chlordane							
1	5.875	5.875	0.000	143002445	50.0	51.2	
2	5.766	5.765	0.001	277406426	50.0	49.7	
						RPD = 2.87	
16 4,4'-DDE							
1	5.941	5.941	0.000	137480799	50.0	53.3	
2	5.922	5.922	0.000	306508902	50.0	53.8	
						RPD = 0.88	
7 Endosulfan I							
1	6.010	6.009	0.001	135534314	50.0	51.1	
2	5.819	5.819	0.000	284166107	50.0	51.4	
						RPD = 0.58	
29 Dieldrin							
1	6.259	6.260	-0.001	147661060	50.0	52.5	
2	6.087	6.087	0.000	322015775	50.0	52.5	
						RPD = 0.03	
13 Endrin							
1	6.527	6.528	-0.001	118044803	50.0	50.7	
2	6.426	6.425	0.001	247697940	50.0	48.8	
						RPD = 3.94	
12 4,4'-DDD							
1	6.602	6.603	-0.001	115546865	50.0	51.3	
2	6.570	6.569	0.001	246369027	50.0	49.8	
						RPD = 2.91	
10 Endosulfan II							
1	6.811	6.812	-0.001	112495729	50.0	51.6	
2	6.694	6.694	0.000	241781416	50.0	50.5	
						RPD = 2.05	
14 4,4'-DDT							
1	6.984	6.984	0.000	102528852	50.0	55.9	
2	7.004	7.004	0.000	229487928	50.0	52.8	
						RPD = 5.74	
27 Endrin aldehyde							
1	7.376	7.377	-0.001	98655575	50.0	49.9	
2	7.176	7.176	0.000	208210566	50.0	48.4	
						RPD = 3.14	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.626	7.626	0.000	51460141	50.0	50.3	
2	7.899	7.899	0.000	105921944	50.0	45.1	
						RPD = 10.93	
30 Endosulfan sulfate							
1	7.881	7.883	-0.002	111613555	50.0	49.8	
2	7.536	7.537	-0.001	246982073	50.0	50.6	
						RPD = 1.45	
1 Endrin ketone							
1	8.171	8.172	-0.001	121140694	50.0	50.0	
2	8.119	8.119	0.000	260659245	50.0	49.5	
						RPD = 0.89	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.209	-0.001	95364744	50.0	49.4	M
2	9.407	9.409	-0.002	196268079	50.0	48.1	M
						RPD = 2.82	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTIC_00013 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 13:44:37 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-017.D

Injection Date: 29-Oct-2016 16:22:12 Instrument ID: GC75

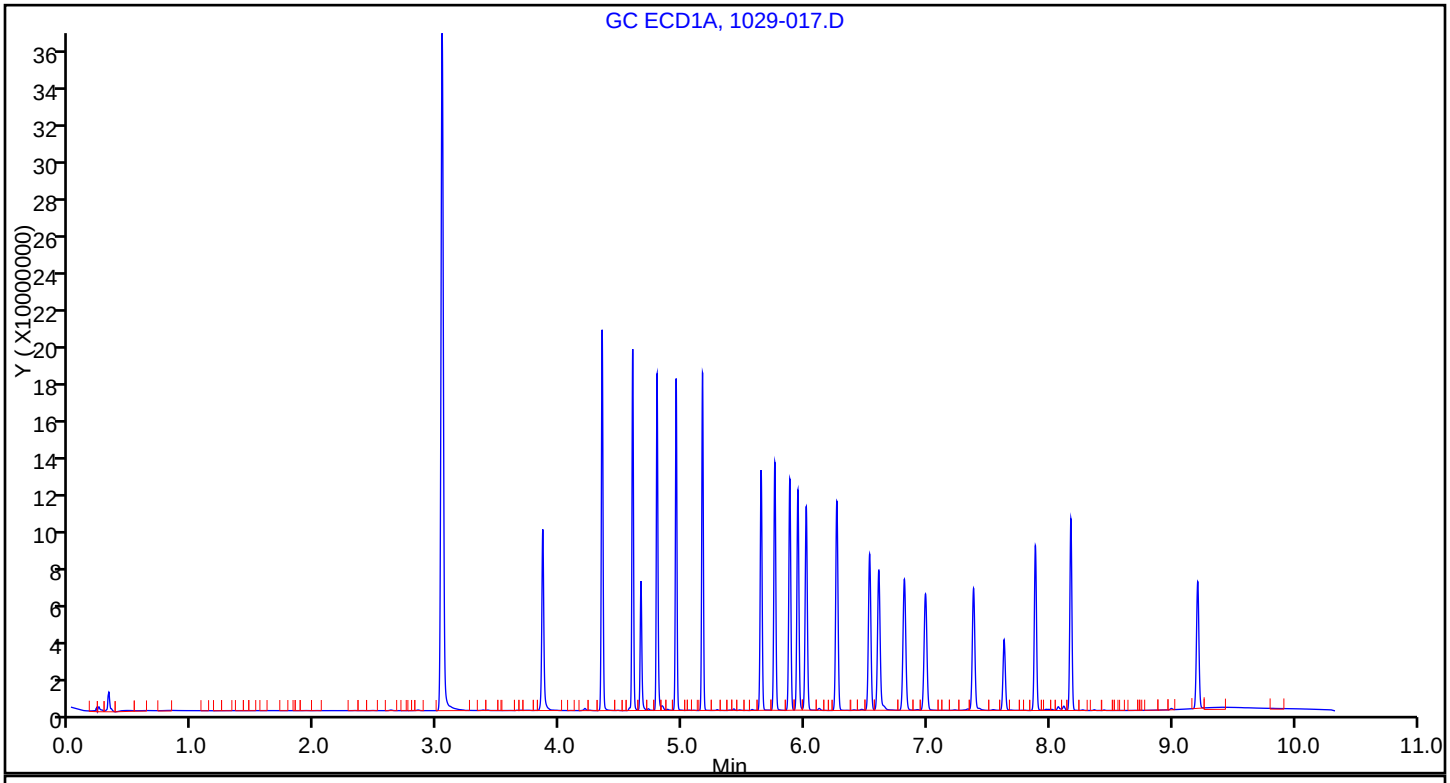
Lims ID: ICV PEST

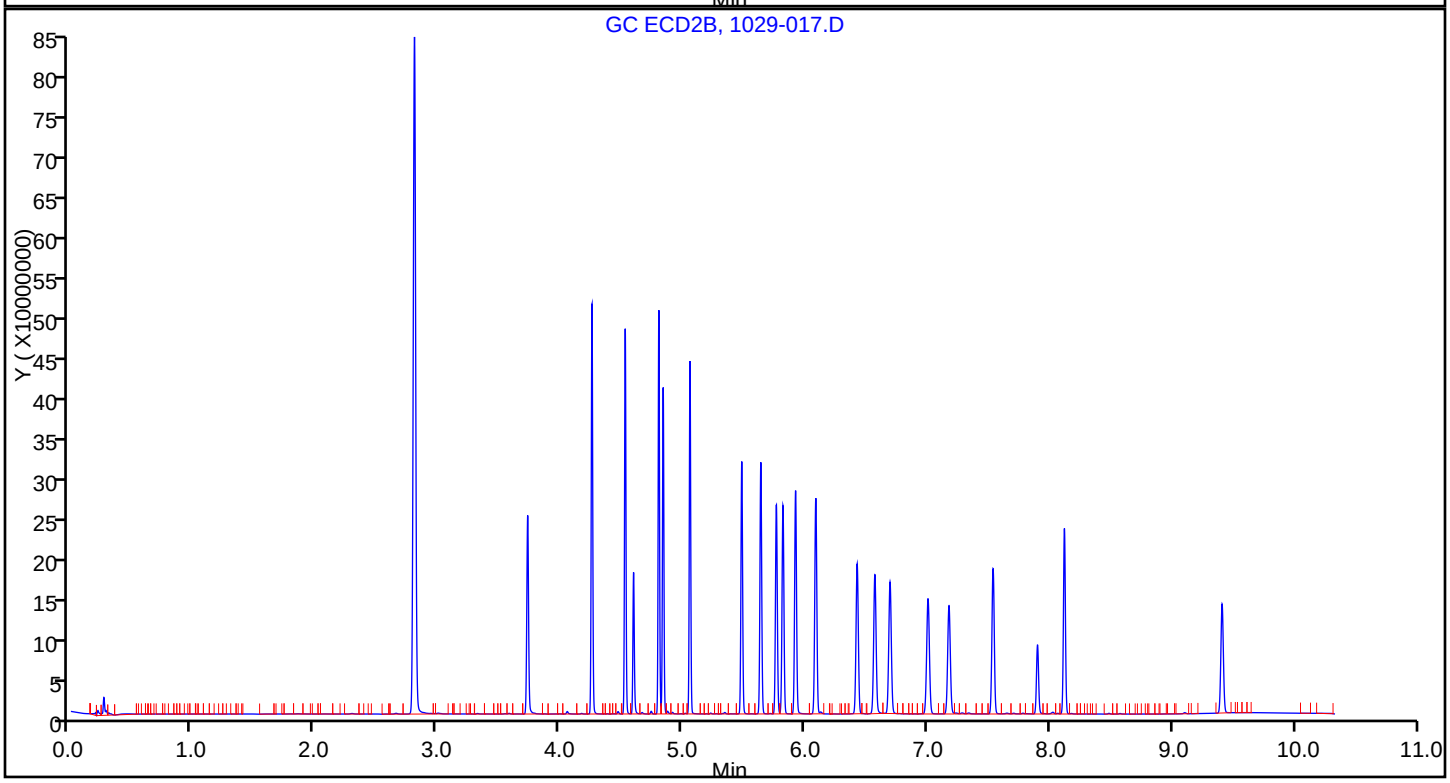
Client ID:

Operator ID: SMH ALS Bottle#: 15 Worklist Smp#: 17

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

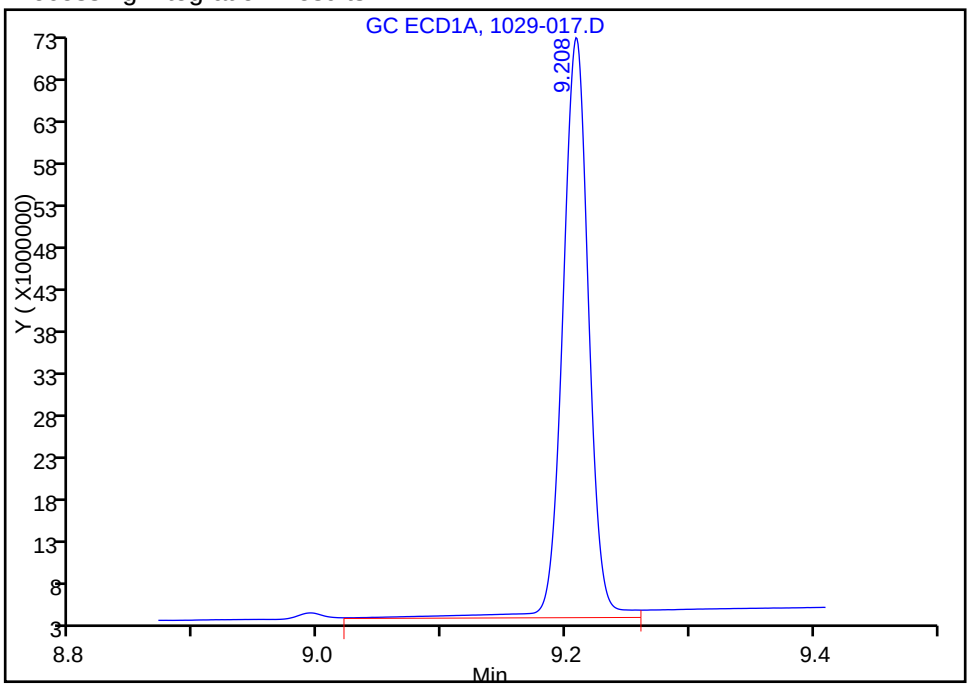
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-017.D				
Injection Date:	29-Oct-2016 16:22:12	Instrument ID:	GC75		
Lims ID:	ICV PEST				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	15	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

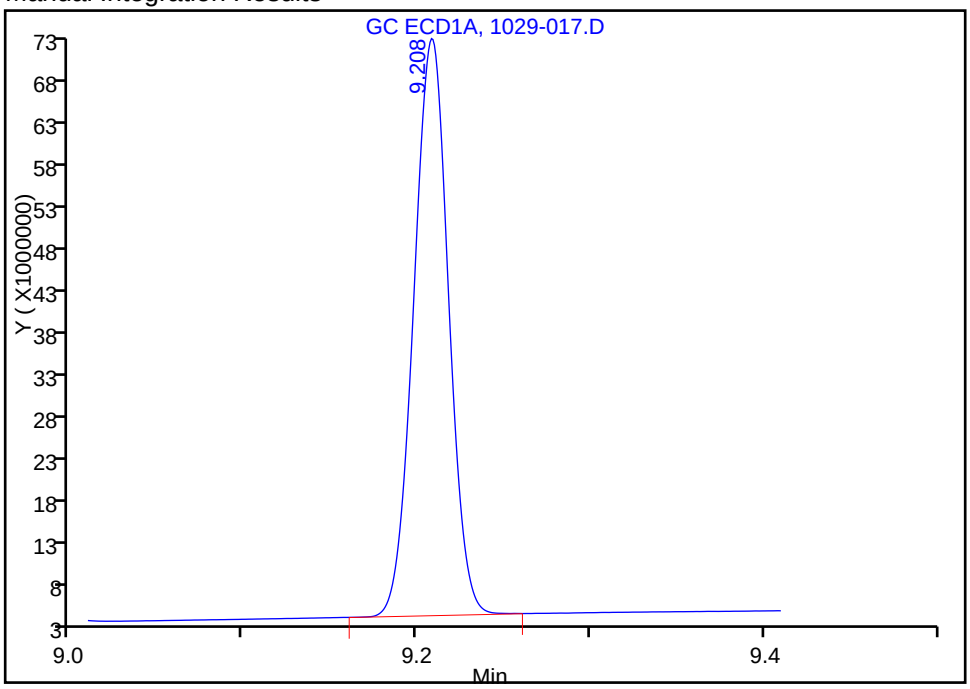
Processing Integration Results

RT: 9.21
Area: 101336060
Amount: 52.532400
Amount Units: ug/l



Manual Integration Results

RT: 9.21
Area: 95364744
Amount: 49.436883
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:34:18

Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-135054/17 Calibration Date: 10/29/2016 16:22

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1029-017.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
alpha-BHC	Ave	1.324	1.460		55.2	50.0	10.3	20.0
gamma-BHC (Lindane)	Ave	1.242	1.315		53.0	50.0	5.9	20.0
beta-BHC	Ave	0.5077	0.4891		48.2	50.0	-3.7	20.0
delta-BHC	Ave	1.220	1.317		54.0	50.0	8.0	20.0
Heptachlor	Ave	1.128	1.119		49.6	50.0	-0.8	20.0
Aldrin	Ave	1.118	1.206		53.9	50.0	7.8	20.0
Heptachlor epoxide	Ave	1.020	1.018		49.9	50.0	-0.2	20.0
gamma-Chlordane	Ave	1.034	1.074		52.0	50.0	3.9	20.0
alpha-Chlordane	Ave	0.9452	0.9403		49.7	50.0	-0.5	20.0
Endosulfan I	Ave	0.9368	0.9632		51.4	50.0	2.8	20.0
4,4'-DDE	Ave	0.9655	1.039		53.8	50.0	7.6	20.0
Dieldrin	Ave	1.040	1.092		52.5	50.0	5.0	20.0
Endrin	Ave	0.8608	0.8396		48.8	50.0	-2.5	20.0
4,4'-DDD	Ave	0.8388	0.8351		49.8	50.0	-0.4	20.0
Endosulfan II	Ave	0.8109	0.8196		50.5	50.0	1.1	20.0
4,4'-DDT	Ave	0.7368	0.7779		52.8	50.0	5.6	20.0
Endrin aldehyde	Ave	0.7297	0.7058		48.4	50.0	-3.3	20.0
Endosulfan sulfate	Ave	0.8278	0.8372		50.6	50.0	1.1	20.0
Methoxychlor	Ave	0.3979	0.3590		45.1	50.0	-9.8	20.0
Endrin ketone	Ave	0.8916	0.8836		49.5	50.0	-0.9	20.0
Tetrachloro-m-xylene	Ave	0.8788	0.8643		49.2	50.0	-1.6	20.0
DCB Decachlorobiphenyl	Ave	0.6921	0.6653		48.1	50.0	-3.9	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICV 320-135054/17 Calibration Date: 10/29/2016 16:22

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1029-017.D

Analyte	RT	RT WINDOW	
		FROM	TO
alpha-BHC	4.26	4.23	4.28
gamma-BHC (Lindane)	4.53	4.51	4.56
beta-BHC	4.60	4.57	4.62
delta-BHC	4.81	4.78	4.83
Heptachlor	4.84	4.82	4.87
Aldrin	5.06	5.03	5.09
Heptachlor epoxide	5.48	5.46	5.51
gamma-Chlordane	5.64	5.61	5.66
alpha-Chlordane	5.77	5.74	5.79
Endosulfan I	5.82	5.79	5.85
4,4'-DDE	5.92	5.90	5.95
Dieldrin	6.09	6.06	6.11
Endrin	6.43	6.40	6.45
4,4'-DDD	6.57	6.54	6.60
Endosulfan II	6.69	6.67	6.72
4,4'-DDT	7.00	6.98	7.03
Endrin aldehyde	7.18	7.15	7.20
Endosulfan sulfate	7.54	7.51	7.56
Methoxychlor	7.90	7.87	7.93
Endrin ketone	8.12	8.09	8.15
Tetrachloro-m-xylene	3.73	3.71	3.76
DCB Decachlorobiphenyl	9.41	9.38	9.43

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-017.D
Lims ID: ICV PEST
Client ID:
Sample Type: ICV
Inject. Date: 29-Oct-2016 16:22:12 ALS Bottle#: 15 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-0036262-017
Operator ID: SMH Instrument ID: GC75
Sublist:

Method: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 13:44:35 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 13:44:35

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.034	0.000	514086952	200.0	200.0	
2	2.808	2.808	0.000	1180053793	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	115071422	50.0	49.1	
2	3.733	3.733	0.000	254985353	50.0	49.2	
						RPD = 0.11	
11 alpha-BHC							
1	4.341	4.342	-0.001	194788030	50.0	56.5	
2	4.259	4.259	0.000	430735805	50.0	55.2	
						RPD = 2.43	
2 gamma-BHC (Lindane)							
1	4.591	4.592	-0.001	174152325	50.0	53.4	
2	4.531	4.530	0.001	387910943	50.0	53.0	
						RPD = 0.92	
6 beta-BHC							
1	4.659	4.659	0.000	66636375	50.0	47.9	
2	4.598	4.599	-0.001	144278801	50.0	48.2	
						RPD = 0.60	
18 delta-BHC							
1	4.791	4.791	0.000	164528218	50.0	53.9	
2	4.805	4.804	0.001	388661219	50.0	54.0	
						RPD = 0.10	
19 Heptachlor							
1	4.946	4.946	0.000	156930795	50.0	51.7	
2	4.841	4.840	0.001	330165044	50.0	49.6	
						RPD = 4.10	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.161	5.162	-0.001	165924525	50.0	54.7	
2	5.060	5.059	0.001	355686229	50.0	53.9	
						RPD = 1.49	
26 Heptachlor epoxide							
1	5.641	5.641	0.000	139792406	50.0	50.3	
2	5.482	5.482	0.000	300445713	50.0	49.9	
						RPD = 0.77	
25 gamma-Chlordane							
1	5.752	5.753	-0.001	148979875	50.0	52.2	
2	5.638	5.638	0.000	316845692	50.0	52.0	
						RPD = 0.48	
15 alpha-Chlordane							
1	5.875	5.875	0.000	143002445	50.0	51.2	
2	5.766	5.765	0.001	277406426	50.0	49.7	
						RPD = 2.87	
16 4,4'-DDE							
1	5.941	5.941	0.000	137480799	50.0	53.3	
2	5.922	5.922	0.000	306508902	50.0	53.8	
						RPD = 0.88	
7 Endosulfan I							
1	6.010	6.009	0.001	135534314	50.0	51.1	
2	5.819	5.819	0.000	284166107	50.0	51.4	
						RPD = 0.58	
29 Dieldrin							
1	6.259	6.260	-0.001	147661060	50.0	52.5	
2	6.087	6.087	0.000	322015775	50.0	52.5	
						RPD = 0.03	
13 Endrin							
1	6.527	6.528	-0.001	118044803	50.0	50.7	
2	6.426	6.425	0.001	247697940	50.0	48.8	
						RPD = 3.94	
12 4,4'-DDD							
1	6.602	6.603	-0.001	115546865	50.0	51.3	
2	6.570	6.569	0.001	246369027	50.0	49.8	
						RPD = 2.91	
10 Endosulfan II							
1	6.811	6.812	-0.001	112495729	50.0	51.6	
2	6.694	6.694	0.000	241781416	50.0	50.5	
						RPD = 2.05	
14 4,4'-DDT							
1	6.984	6.984	0.000	102528852	50.0	55.9	
2	7.004	7.004	0.000	229487928	50.0	52.8	
						RPD = 5.74	
27 Endrin aldehyde							
1	7.376	7.377	-0.001	98655575	50.0	49.9	
2	7.176	7.176	0.000	208210566	50.0	48.4	
						RPD = 3.14	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.626	7.626	0.000	51460141	50.0	50.3	
2	7.899	7.899	0.000	105921944	50.0	45.1	
						RPD = 10.93	
30 Endosulfan sulfate							
1	7.881	7.883	-0.002	111613555	50.0	49.8	
2	7.536	7.537	-0.001	246982073	50.0	50.6	
						RPD = 1.45	
1 Endrin ketone							
1	8.171	8.172	-0.001	121140694	50.0	50.0	
2	8.119	8.119	0.000	260659245	50.0	49.5	
						RPD = 0.89	
$ 23 DCB Decachlorobiphenyl							M
1	9.208	9.209	-0.001	95364744	50.0	49.4	M
2	9.407	9.409	-0.002	196268079	50.0	48.1	M
						RPD = 2.82	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTIC_00013 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 13:44:37 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-017.D

Injection Date: 29-Oct-2016 16:22:12 Instrument ID: GC75

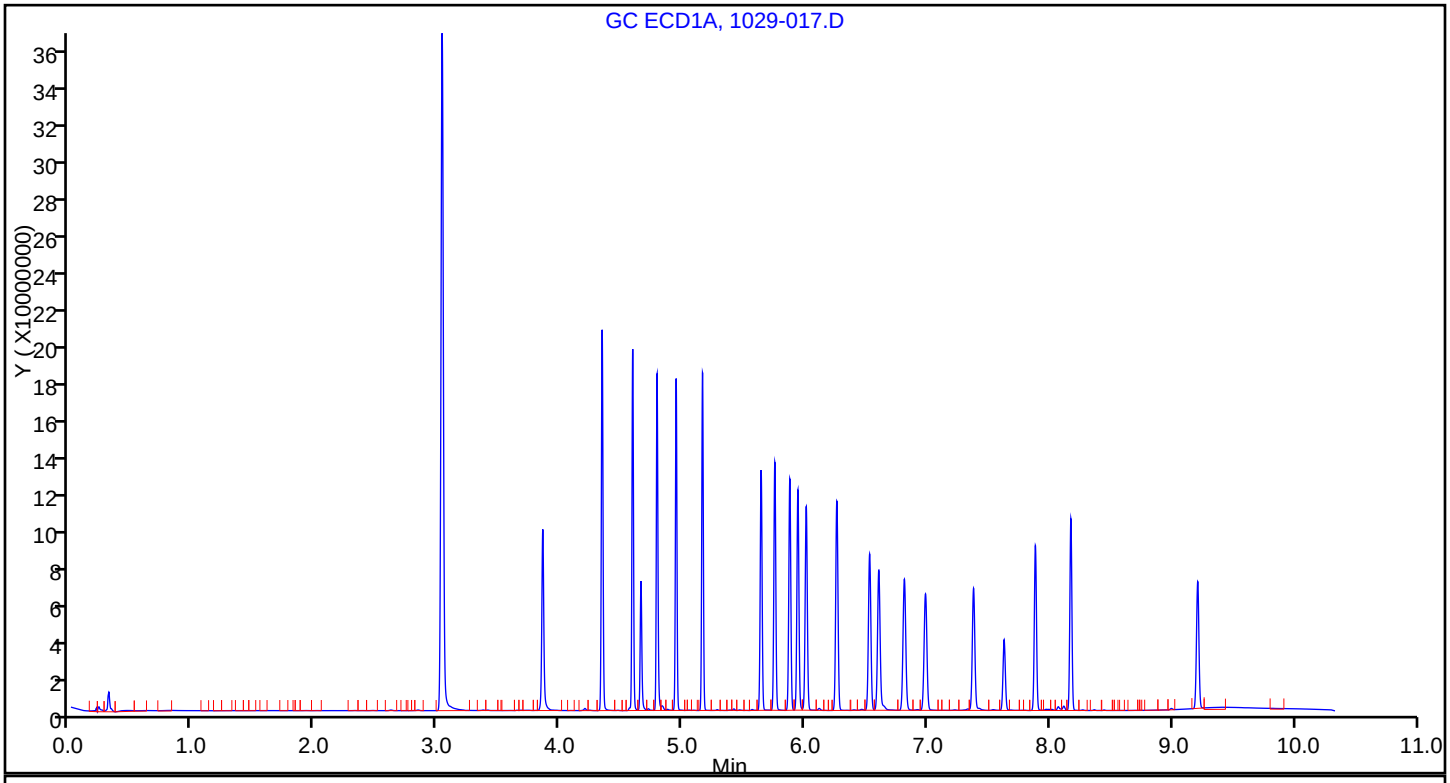
Lims ID: ICV PEST

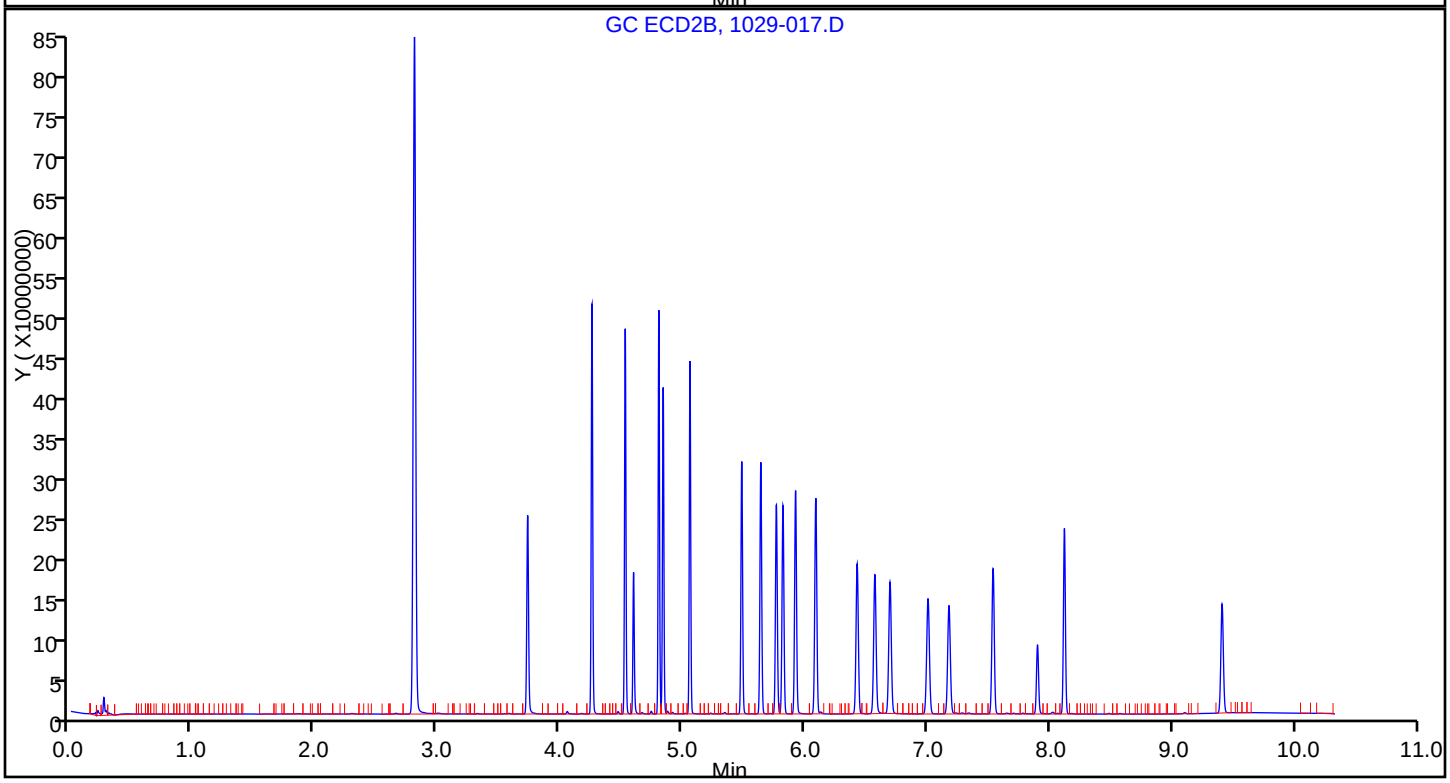
Client ID:

Operator ID: SMH ALS Bottle#: 15 Worklist Smp#: 17

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





Manual Integration/User Assign Peak Report

TestAmerica Sacramento

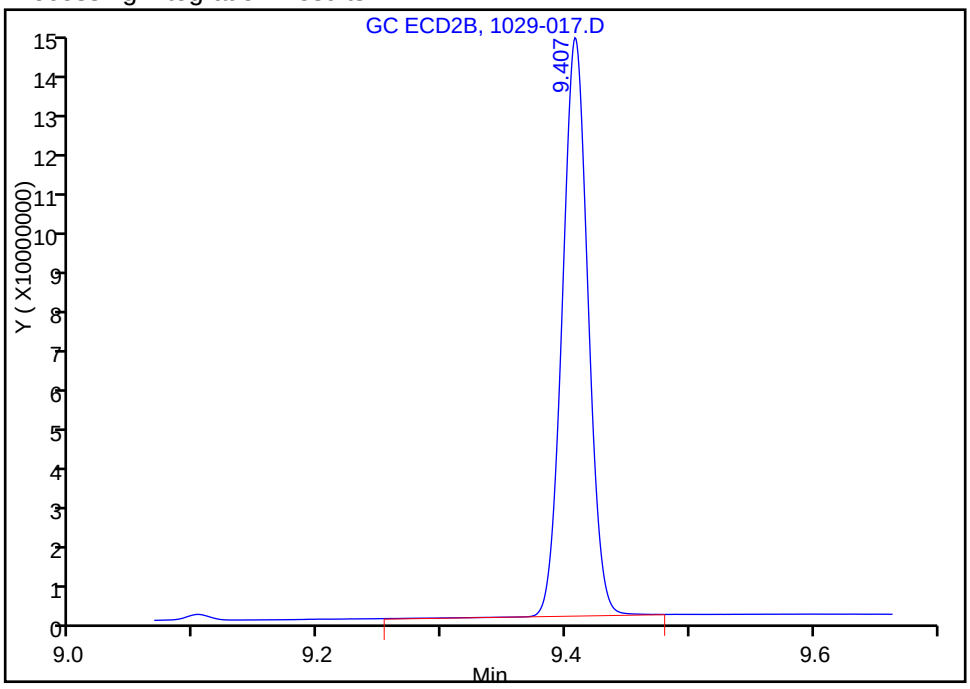
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-017.D				
Injection Date:	29-Oct-2016 16:22:12	Instrument ID:	GC75		
Lims ID:	ICV PEST				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	15	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

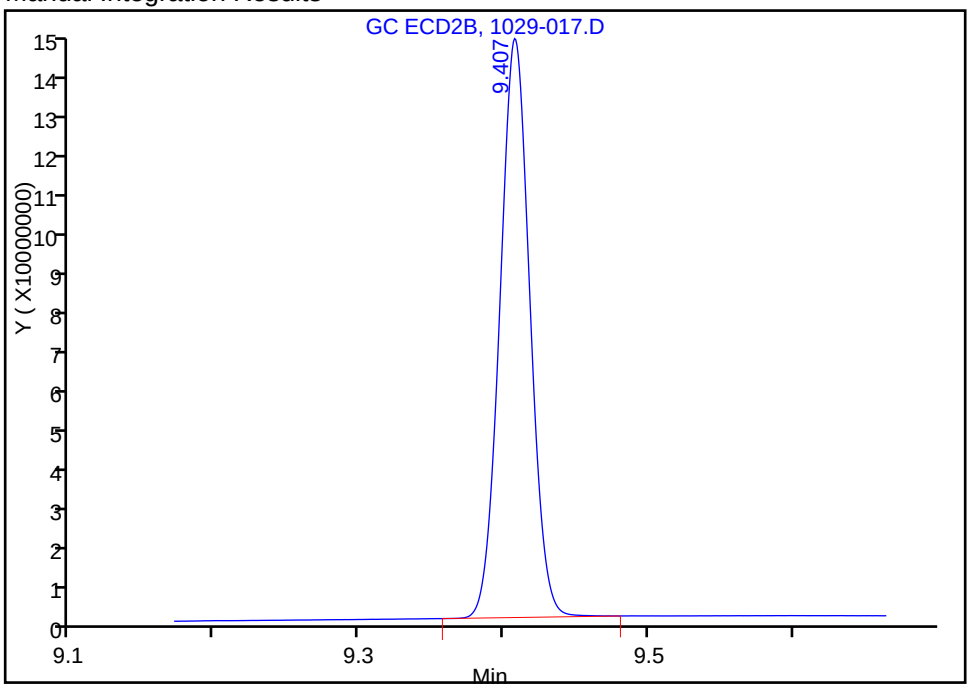
Processing Integration Results

RT: 9.41
Area: 196827774
Amount: 48.198173
Amount Units: ug/l



Manual Integration Results

RT: 9.41
Area: 196268079
Amount: 48.061118
Amount Units: ug/l



Reviewer: haques, 31-Oct-2016 08:34:18

Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVRT 320-135416/3 Calibration Date: 11/01/2016 10:22

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-003.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
alpha-BHC	Ave	1.341	1.377		20.5	20.0	2.7	20.0
gamma-BHC (Lindane)	Ave	1.268	1.290		20.3	20.0	1.7	20.0
beta-BHC	Ave	0.5415	0.4995		18.5	20.0	-7.7	20.0
delta-BHC	Ave	1.187	1.217		20.5	20.0	2.6	20.0
Heptachlor	Ave	1.181	1.246		21.1	20.0	5.5	20.0
Aldrin	Ave	1.180	1.198		20.3	20.0	1.5	20.0
Heptachlor epoxide	Ave	1.081	1.072		19.8	20.0	-0.8	20.0
gamma-Chlordane	Ave	1.110	1.108		20.0	20.0	-0.2	20.0
alpha-Chlordane	Ave	1.087	1.076		19.8	20.0	-1.0	20.0
4,4'-DDE	Ave	1.003	1.031		20.6	20.0	2.8	20.0
Endosulfan I	Ave	1.032	1.009		19.6	20.0	-2.2	20.0
Dieldrin	Ave	1.094	1.110		20.3	20.0	1.5	20.0
Endrin	Ave	0.9053	0.9485		21.0	20.0	4.8	20.0
4,4'-DDD	Ave	0.8771	0.8360		19.1	20.0	-4.7	20.0
Endosulfan II	Ave	0.8485	0.8855		20.9	20.0	4.4	20.0
4,4'-DDT	Ave	0.7135	0.8097		22.7	20.0	13.5	20.0
Endrin aldehyde	Ave	0.7691	0.7457		19.4	20.0	-3.0	20.0
Methoxychlor	Ave	0.3978	0.4305		21.6	20.0	8.2	20.0
Endosulfan sulfate	Ave	0.8713	0.8448		19.4	20.0	-3.0	20.0
Endrin ketone	Ave	0.9428	0.9350		19.8	20.0	-0.8	20.0
Tetrachloro-m-xylene	Ave	0.9113	0.8829		19.4	20.0	-3.1	20.0
DCB Decachlorobiphenyl	Ave	0.7505	0.7456		19.9	20.0	-0.6	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVRT 320-135416/3 Calibration Date: 11/01/2016 10:22

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-003.D

Analyte	RT	RT WINDOW	
		FROM	TO
alpha-BHC	4.34	4.32	4.37
gamma-BHC (Lindane)	4.59	4.57	4.62
beta-BHC	4.66	4.63	4.68
delta-BHC	4.79	4.76	4.82
Heptachlor	4.95	4.92	4.97
Aldrin	5.16	5.14	5.19
Heptachlor epoxide	5.64	5.61	5.66
gamma-Chlordane	5.75	5.73	5.78
alpha-Chlordane	5.87	5.85	5.90
4,4'-DDE	5.94	5.91	5.96
Endosulfan I	6.01	5.98	6.03
Dieldrin	6.26	6.23	6.28
Endrin	6.52	6.50	6.55
4,4'-DDD	6.60	6.57	6.63
Endosulfan II	6.81	6.78	6.83
4,4'-DDT	6.98	6.95	7.00
Endrin aldehyde	7.37	7.35	7.40
Methoxychlor	7.62	7.60	7.65
Endosulfan sulfate	7.88	7.85	7.90
Endrin ketone	8.17	8.14	8.19
Tetrachloro-m-xylene	3.86	3.83	3.88
DCB Decachlorobiphenyl	9.21	9.18	9.23

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-003.D
Lims ID: CCVRT PESTL5
Client ID:
Sample Type: CCVRT
Inject. Date: 01-Nov-2016 10:22:55 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVRT PESTL5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:49:53 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:49:53

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.034	0.000	521649284	200.0	200.0	
2	2.800	2.800	0.000	1137687513	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	46055804	20.0	19.4	
2	3.726	3.726	0.000	97174487	20.0	19.4	
						RPD = 0.33	
11 alpha-BHC							
1	4.341	4.341	0.000	71840458	20.0	20.5	
2	4.252	4.252	0.000	150809685	20.0	20.0	
						RPD = 2.51	
2 gamma-BHC (Lindane)							
1	4.590	4.590	0.000	67277259	20.0	20.3	
2	4.524	4.524	0.000	139731883	20.0	19.8	
						RPD = 2.79	
6 beta-BHC							
1	4.657	4.657	0.000	26058042	20.0	18.5	
2	4.592	4.592	0.000	53310334	20.0	18.5	
						RPD = 0.05	
18 delta-BHC							
1	4.789	4.789	0.000	63502132	20.0	20.5	
2	4.799	4.799	0.000	139420682	20.0	20.1	
						RPD = 2.10	
19 Heptachlor							
1	4.945	4.945	0.000	65003830	20.0	21.1	
2	4.834	4.834	0.000	124419776	20.0	19.4	
						RPD = 8.44	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.160	5.160	0.000	62485715	20.0	20.3	
2	5.053	5.053	0.000	125918534	20.0	19.8	
						RPD = 2.55	
26 Heptachlor epoxide							
1	5.639	5.639	0.000	55944989	20.0	19.8	
2	5.474	5.474	0.000	113501504	20.0	19.6	
						RPD = 1.42	
25 gamma-Chlordane							
1	5.750	5.750	0.000	57785143	20.0	20.0	
2	5.630	5.630	0.000	114580403	20.0	19.5	
						RPD = 2.37	
15 alpha-Chlordane							
1	5.873	5.873	0.000	56124154	20.0	19.8	
2	5.757	5.757	0.000	101865098	20.0	18.9	
						RPD = 4.40	
16 4,4'-DDE							
1	5.939	5.939	0.000	53779779	20.0	20.6	
2	5.913	5.913	0.000	112684107	20.0	20.5	
						RPD = 0.21	
7 Endosulfan I							
1	6.006	6.006	0.000	52629238	20.0	19.6	
2	5.810	5.810	0.000	103402906	20.0	19.4	
						RPD = 0.80	
29 Dieldrin							
1	6.256	6.256	0.000	57919821	20.0	20.3	
2	6.077	6.077	0.000	119002211	20.0	20.1	
						RPD = 0.88	
13 Endrin							
1	6.524	6.524	0.000	49478851	20.0	21.0	
2	6.414	6.414	0.000	95422706	20.0	19.5	
						RPD = 7.26	
12 4,4'-DDD							
1	6.599	6.599	0.000	43609838	20.0	19.1	
2	6.559	6.559	0.000	93432763	20.0	19.6	
						RPD = 2.69	
10 Endosulfan II							
1	6.807	6.807	0.000	46190905	20.0	20.9	
2	6.682	6.682	0.000	94845140	20.0	20.6	
						RPD = 1.50	
14 4,4'-DDT							
1	6.978	6.978	0.000	42236723	20.0	22.7	
2	6.992	6.992	0.000	85384209	20.0	20.4	
						RPD = 10.80	
27 Endrin aldehyde							
1	7.372	7.372	0.000	38897951	20.0	19.4	
2	7.164	7.164	0.000	79037980	20.0	19.0	
						RPD = 1.82	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.624	7.624	0.000	22459062	20.0	21.6	
2	7.891	7.891	0.000	42507100	20.0	18.8	
						RPD = 14.19	
30 Endosulfan sulfate							
1	7.879	7.879	0.000	44070159	20.0	19.4	
2	7.526	7.526	0.000	91090816	20.0	19.3	
						RPD = 0.26	
1 Endrin ketone							
1	8.169	8.169	0.000	48771371	20.0	19.8	
2	8.112	8.112	0.000	98841843	20.0	19.5	
						RPD = 1.76	
$ 23 DCB Decachlorobiphenyl							
1	9.206	9.206	0.000	38895126	20.0	19.9	
2	9.400	9.400	0.000	81048745	20.0	20.6	
						RPD = 3.53	

Reagents:

GCPESTL5_00012 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 16:49:55 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-003.D

Injection Date: 01-Nov-2016 10:22:55 Instrument ID: GC75

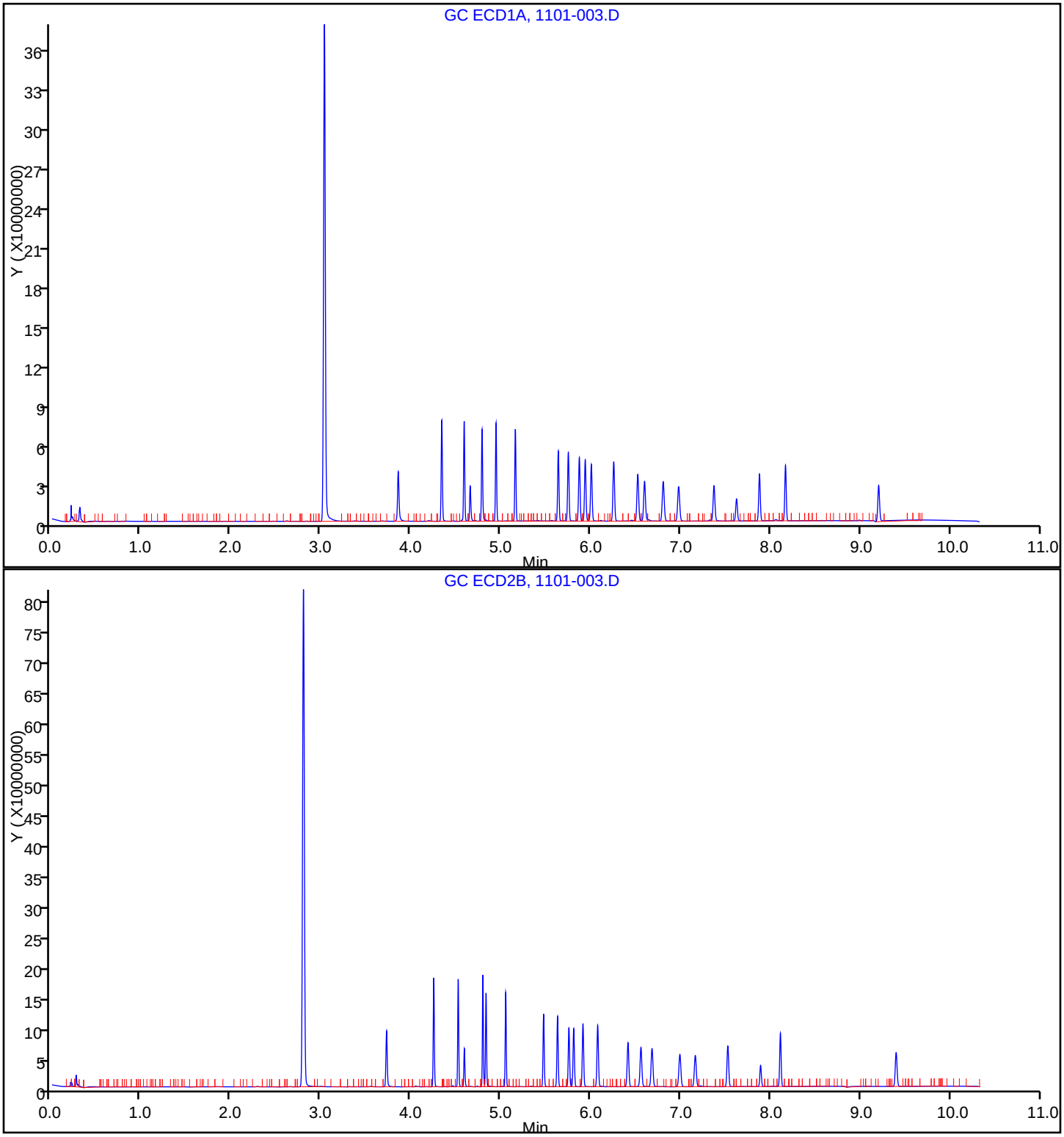
Lims ID: CCVRT PESTL5

Client ID:

Operator ID: SMH ALS Bottle#: 3 Worklist Smp#: 3

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVRT 320-135416/3 Calibration Date: 11/01/2016 10:22

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-003.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
alpha-BHC	Ave	1.324	1.326		20.0	20.0	0.2	20.0
gamma-BHC (Lindane)	Ave	1.242	1.228		19.8	20.0	-1.1	20.0
beta-BHC	Ave	0.5077	0.4686		18.5	20.0	-7.7	20.0
delta-BHC	Ave	1.220	1.225		20.1	20.0	0.4	20.0
Heptachlor	Ave	1.128	1.094		19.4	20.0	-3.1	20.0
Aldrin	Ave	1.118	1.107		19.8	20.0	-1.0	20.0
Heptachlor epoxide	Ave	1.020	0.998		19.6	20.0	-2.2	20.0
gamma-Chlordane	Ave	1.034	1.007		19.5	20.0	-2.6	20.0
alpha-Chlordane	Ave	0.9452	0.8954		18.9	20.0	-5.3	20.0
Endosulfan I	Ave	0.9368	0.9089		19.4	20.0	-3.0	20.0
4,4'-DDE	Ave	0.9655	0.9905		20.5	20.0	2.6	20.0
Dieldrin	Ave	1.040	1.046		20.1	20.0	0.6	20.0
Endrin	Ave	0.8608	0.8387		19.5	20.0	-2.6	20.0
4,4'-DDD	Ave	0.8388	0.8213		19.6	20.0	-2.1	20.0
Endosulfan II	Ave	0.8109	0.8337		20.6	20.0	2.8	20.0
4,4'-DDT	Ave	0.7368	0.7505		20.4	20.0	1.9	20.0
Endrin aldehyde	Ave	0.7297	0.6947		19.0	20.0	-4.8	20.0
Endosulfan sulfate	Ave	0.8278	0.8007		19.3	20.0	-3.3	20.0
Methoxychlor	Ave	0.3979	0.3736		18.8	20.0	-6.1	20.0
Endrin ketone	Ave	0.8916	0.8688		19.5	20.0	-2.6	20.0
Tetrachloro-m-xylene	Ave	0.8788	0.8541		19.4	20.0	-2.8	20.0
DCB Decachlorobiphenyl	Ave	0.6921	0.7124		20.6	20.0	2.9	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCVRT 320-135416/3 Calibration Date: 11/01/2016 10:22

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-003.D

Analyte	RT	RT WINDOW	
		FROM	TO
alpha-BHC	4.25	4.23	4.28
gamma-BHC (Lindane)	4.52	4.50	4.55
beta-BHC	4.59	4.57	4.62
delta-BHC	4.80	4.77	4.82
Heptachlor	4.83	4.81	4.86
Aldrin	5.05	5.03	5.08
Heptachlor epoxide	5.47	5.45	5.50
gamma-Chlordane	5.63	5.61	5.66
alpha-Chlordane	5.76	5.73	5.78
Endosulfan I	5.81	5.79	5.84
4,4'-DDE	5.91	5.89	5.94
Dieldrin	6.08	6.05	6.10
Endrin	6.41	6.39	6.44
4,4'-DDD	6.56	6.53	6.58
Endosulfan II	6.68	6.66	6.71
4,4'-DDT	6.99	6.97	7.02
Endrin aldehyde	7.16	7.14	7.19
Endosulfan sulfate	7.53	7.50	7.55
Methoxychlor	7.89	7.87	7.92
Endrin ketone	8.11	8.09	8.14
Tetrachloro-m-xylene	3.73	3.70	3.75
DCB Decachlorobiphenyl	9.40	9.38	9.43

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-003.D
Lims ID: CCVRT PESTL5
Client ID:
Sample Type: CCVRT
Inject. Date: 01-Nov-2016 10:22:55 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVRT PESTL5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:49:53 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:49:53

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.034	0.000	521649284	200.0	200.0	
2	2.800	2.800	0.000	1137687513	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	46055804	20.0	19.4	
2	3.726	3.726	0.000	97174487	20.0	19.4	
						RPD = 0.33	
11 alpha-BHC							
1	4.341	4.341	0.000	71840458	20.0	20.5	
2	4.252	4.252	0.000	150809685	20.0	20.0	
						RPD = 2.51	
2 gamma-BHC (Lindane)							
1	4.590	4.590	0.000	67277259	20.0	20.3	
2	4.524	4.524	0.000	139731883	20.0	19.8	
						RPD = 2.79	
6 beta-BHC							
1	4.657	4.657	0.000	26058042	20.0	18.5	
2	4.592	4.592	0.000	53310334	20.0	18.5	
						RPD = 0.05	
18 delta-BHC							
1	4.789	4.789	0.000	63502132	20.0	20.5	
2	4.799	4.799	0.000	139420682	20.0	20.1	
						RPD = 2.10	
19 Heptachlor							
1	4.945	4.945	0.000	65003830	20.0	21.1	
2	4.834	4.834	0.000	124419776	20.0	19.4	
						RPD = 8.44	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.160	5.160	0.000	62485715	20.0	20.3	
2	5.053	5.053	0.000	125918534	20.0	19.8	
						RPD = 2.55	
26 Heptachlor epoxide							
1	5.639	5.639	0.000	55944989	20.0	19.8	
2	5.474	5.474	0.000	113501504	20.0	19.6	
						RPD = 1.42	
25 gamma-Chlordane							
1	5.750	5.750	0.000	57785143	20.0	20.0	
2	5.630	5.630	0.000	114580403	20.0	19.5	
						RPD = 2.37	
15 alpha-Chlordane							
1	5.873	5.873	0.000	56124154	20.0	19.8	
2	5.757	5.757	0.000	101865098	20.0	18.9	
						RPD = 4.40	
16 4,4'-DDE							
1	5.939	5.939	0.000	53779779	20.0	20.6	
2	5.913	5.913	0.000	112684107	20.0	20.5	
						RPD = 0.21	
7 Endosulfan I							
1	6.006	6.006	0.000	52629238	20.0	19.6	
2	5.810	5.810	0.000	103402906	20.0	19.4	
						RPD = 0.80	
29 Dieldrin							
1	6.256	6.256	0.000	57919821	20.0	20.3	
2	6.077	6.077	0.000	119002211	20.0	20.1	
						RPD = 0.88	
13 Endrin							
1	6.524	6.524	0.000	49478851	20.0	21.0	
2	6.414	6.414	0.000	95422706	20.0	19.5	
						RPD = 7.26	
12 4,4'-DDD							
1	6.599	6.599	0.000	43609838	20.0	19.1	
2	6.559	6.559	0.000	93432763	20.0	19.6	
						RPD = 2.69	
10 Endosulfan II							
1	6.807	6.807	0.000	46190905	20.0	20.9	
2	6.682	6.682	0.000	94845140	20.0	20.6	
						RPD = 1.50	
14 4,4'-DDT							
1	6.978	6.978	0.000	42236723	20.0	22.7	
2	6.992	6.992	0.000	85384209	20.0	20.4	
						RPD = 10.80	
27 Endrin aldehyde							
1	7.372	7.372	0.000	38897951	20.0	19.4	
2	7.164	7.164	0.000	79037980	20.0	19.0	
						RPD = 1.82	

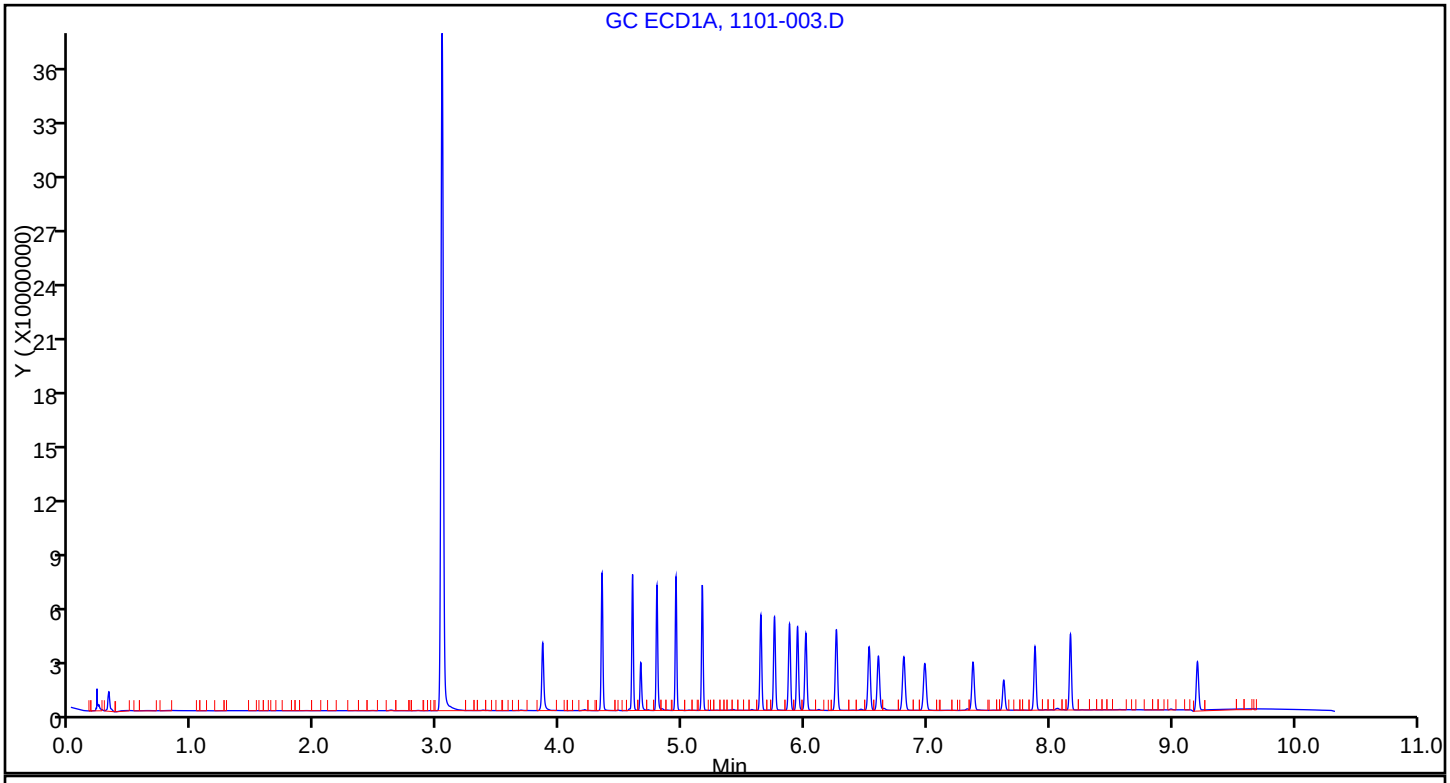
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.624	7.624	0.000	22459062	20.0	21.6	
2	7.891	7.891	0.000	42507100	20.0	18.8	
						RPD = 14.19	
30 Endosulfan sulfate							
1	7.879	7.879	0.000	44070159	20.0	19.4	
2	7.526	7.526	0.000	91090816	20.0	19.3	
						RPD = 0.26	
1 Endrin ketone							
1	8.169	8.169	0.000	48771371	20.0	19.8	
2	8.112	8.112	0.000	98841843	20.0	19.5	
						RPD = 1.76	
$ 23 DCB Decachlorobiphenyl							
1	9.206	9.206	0.000	38895126	20.0	19.9	
2	9.400	9.400	0.000	81048745	20.0	20.6	
						RPD = 3.53	

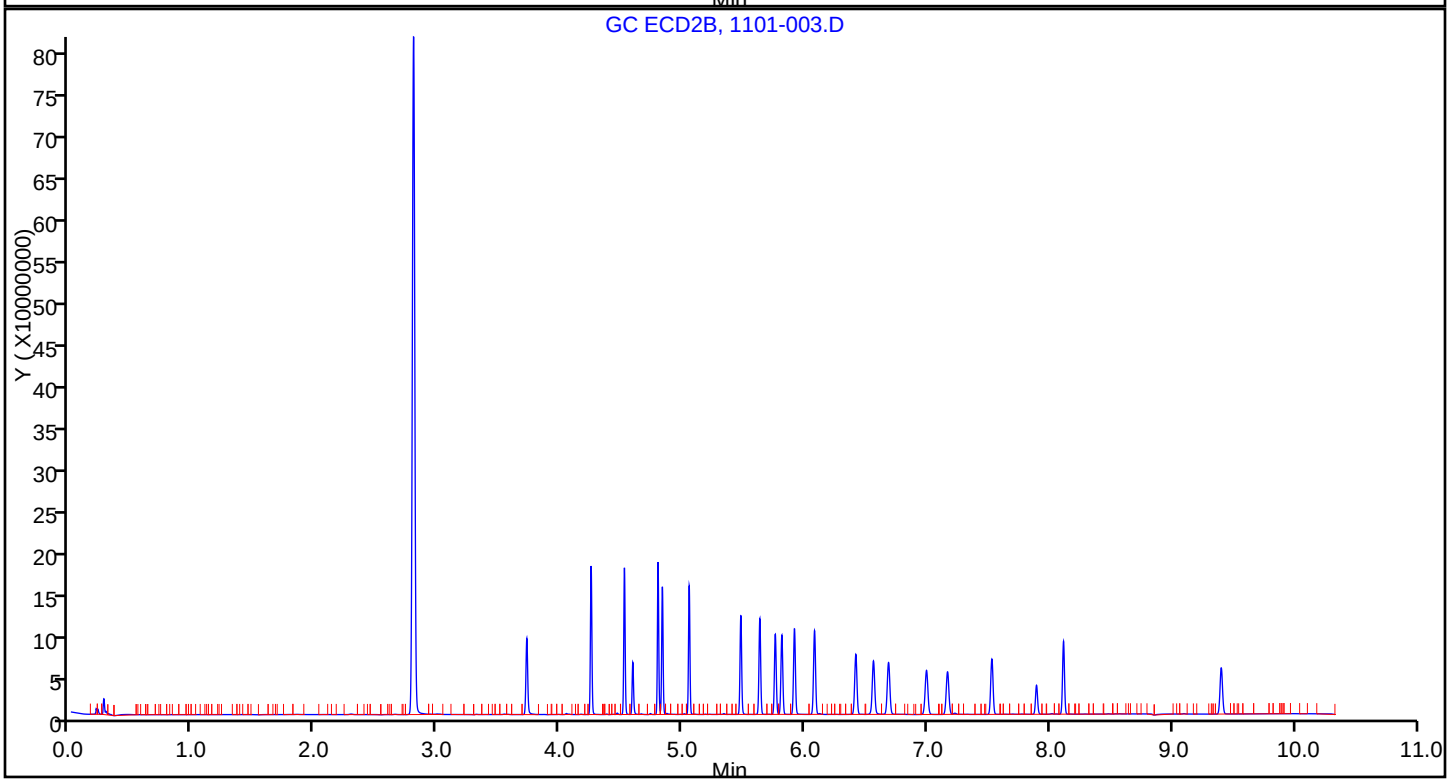
Reagents:

GCPESTL5_00012 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-003.D
Injection Date: 01-Nov-2016 10:22:55 Instrument ID: GC75
Lims ID: CCVRT PESTL5
Client ID:
Operator ID: SMH ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/4 Calibration Date: 11/01/2016 10:53

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1101-004.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Ave	0.0455	0.0482		530	500	5.9	20.0
Toxaphene Peak 2	Ave	0.0267	0.0298		558	500	11.5	20.0
Toxaphene Peak 3	Ave	0.0287	0.0322		561	500	12.2	20.0
Toxaphene Peak 4	Ave	0.0346	0.0393		568	500	13.5	20.0
Toxaphene Peak 5	Ave	0.0301	0.0337		559	500	11.8	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/4 Calibration Date: 11/01/2016 10:53

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1101-004.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.80	6.77	6.82
Toxaphene Peak 2	7.27	7.25	7.30
Toxaphene Peak 3	7.54	7.51	7.56
Toxaphene Peak 4	7.67	7.64	7.70
Toxaphene Peak 5	7.78	7.75	7.81

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-004.D
Lims ID: CCV TOXL5
Client ID:
Sample Type: CCV
Inject. Date: 01-Nov-2016 10:53:36 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV TOXL5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:50:12 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:50:12

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.036	3.036	0.000	542441405	200.0	200.0	
2	2.800	2.800	0.000	1183030055	200.0	200.0	
32 Toxaphene							M
1	6.798	6.798	0.000	65396901	500.0	529.6	M
1	7.271	7.271	0.000	40427186	500.0	557.7	M
1	7.538	7.538	0.000	43687169	500.0	561.1	M
1	7.669	7.669	0.000	53320584	500.0	567.7	M
1	7.779	7.779	0.000	45669669	500.0	558.8	M
		Average of Peak Amounts =				555.0	
2	6.664	6.664	0.000	82844296	500.0	493.5	M
2	6.797	6.797	0.000	130769746	500.0	511.6	M
2	7.176	7.176	0.000	91645842	500.0	501.3	M
2	7.800	7.800	0.000	76979761	500.0	518.8	M
2	7.863	7.863	0.000	41749969	500.0	489.5	M
		Average of Peak Amounts =				502.9	
						RPD = 9.84	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

GCTOXL5_00012 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 16:50:20 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-004.D

Injection Date: 01-Nov-2016 10:53:36 Instrument ID: GC75

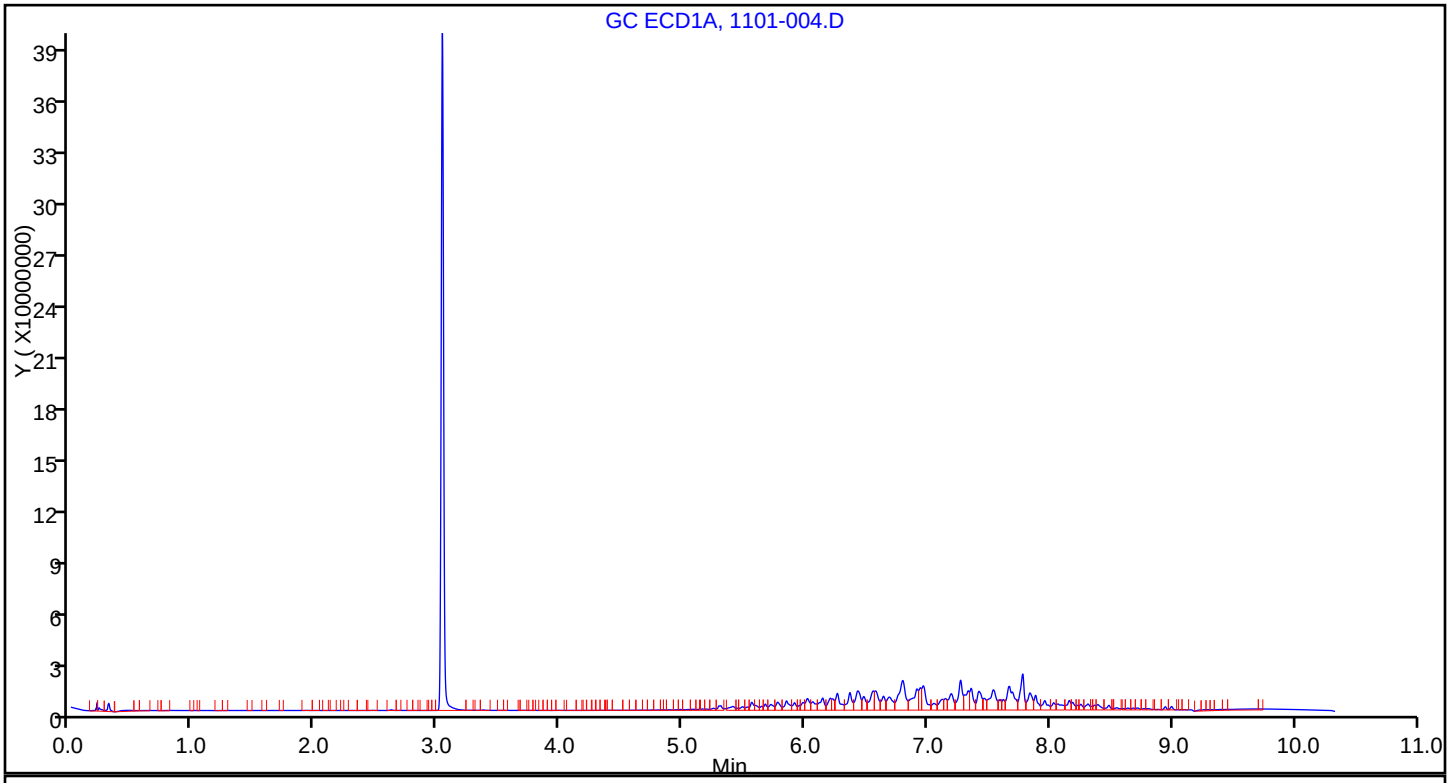
Lims ID: CCV TOXL5

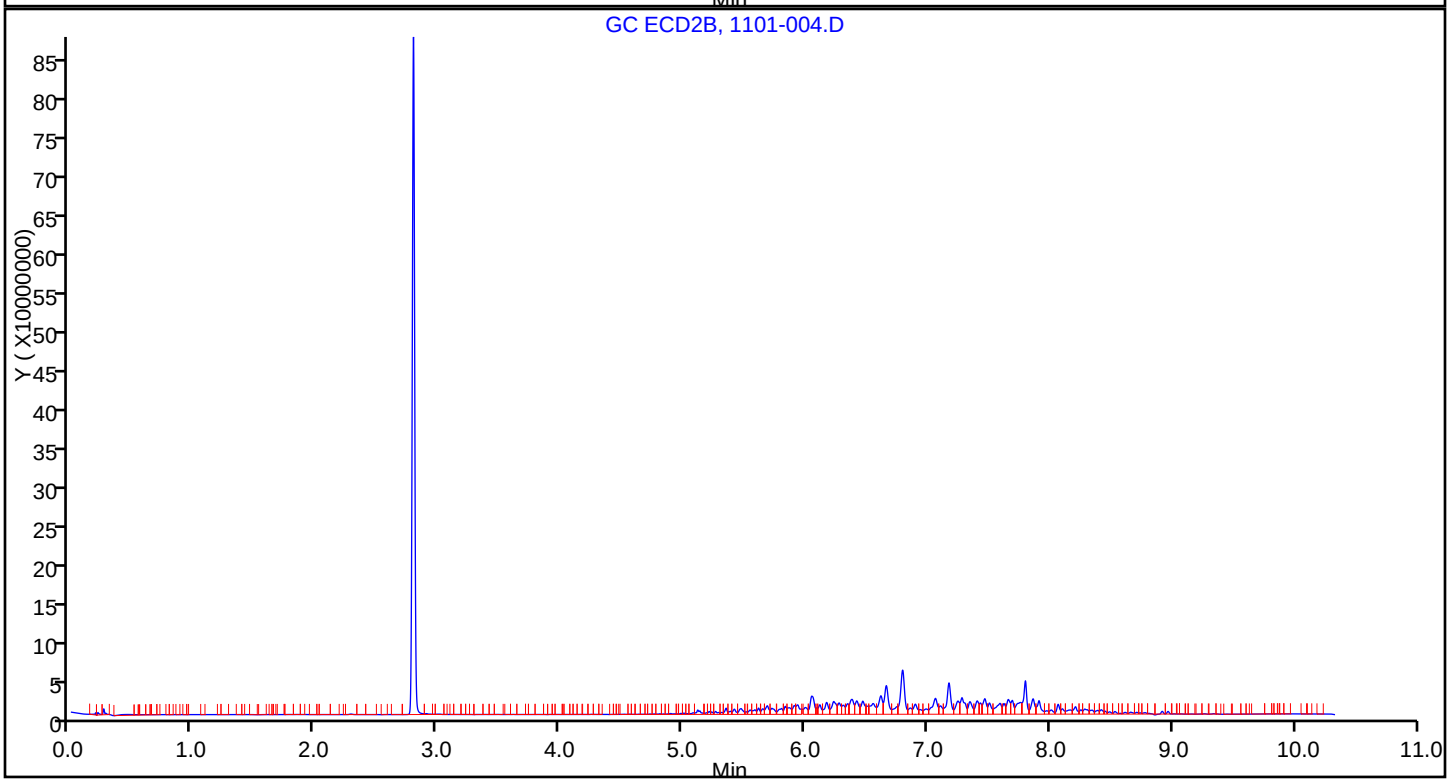
Client ID:

Operator ID: SMH ALS Bottle#: 4 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/4 Calibration Date: 11/01/2016 10:53

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1101-004.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Ave	0.0284	0.0280		493	500	-1.3	20.0
Toxaphene Peak 2	Ave	0.0432	0.0442		512	500	2.3	20.0
Toxaphene Peak 3	Ave	0.0309	0.0310		501	500	0.3	20.0
Toxaphene Peak 4	Ave	0.0251	0.0260		519	500	3.8	20.0
Toxaphene Peak 5	Ave	0.0144	0.0141		489	500	-2.1	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/4 Calibration Date: 11/01/2016 10:53

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1101-004.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.66	6.64	6.69
Toxaphene Peak 2	6.80	6.77	6.82
Toxaphene Peak 3	7.18	7.15	7.20
Toxaphene Peak 4	7.80	7.78	7.83
Toxaphene Peak 5	7.86	7.84	7.89

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-004.D
Lims ID: CCV TOXL5
Client ID:
Sample Type: CCV
Inject. Date: 01-Nov-2016 10:53:36 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV TOXL5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:50:12 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:50:12

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.036	3.036	0.000	542441405	200.0	200.0	
2	2.800	2.800	0.000	1183030055	200.0	200.0	
32 Toxaphene							M
1	6.798	6.798	0.000	65396901	500.0	529.6	M
1	7.271	7.271	0.000	40427186	500.0	557.7	M
1	7.538	7.538	0.000	43687169	500.0	561.1	M
1	7.669	7.669	0.000	53320584	500.0	567.7	M
1	7.779	7.779	0.000	45669669	500.0	558.8	M
		Average of Peak Amounts =				555.0	
2	6.664	6.664	0.000	82844296	500.0	493.5	M
2	6.797	6.797	0.000	130769746	500.0	511.6	M
2	7.176	7.176	0.000	91645842	500.0	501.3	M
2	7.800	7.800	0.000	76979761	500.0	518.8	M
2	7.863	7.863	0.000	41749969	500.0	489.5	M
		Average of Peak Amounts =				502.9	
					RPD =	9.84	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

GCTOXL5_00012 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 16:50:21 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-004.D

Injection Date: 01-Nov-2016 10:53:36 Instrument ID: GC75

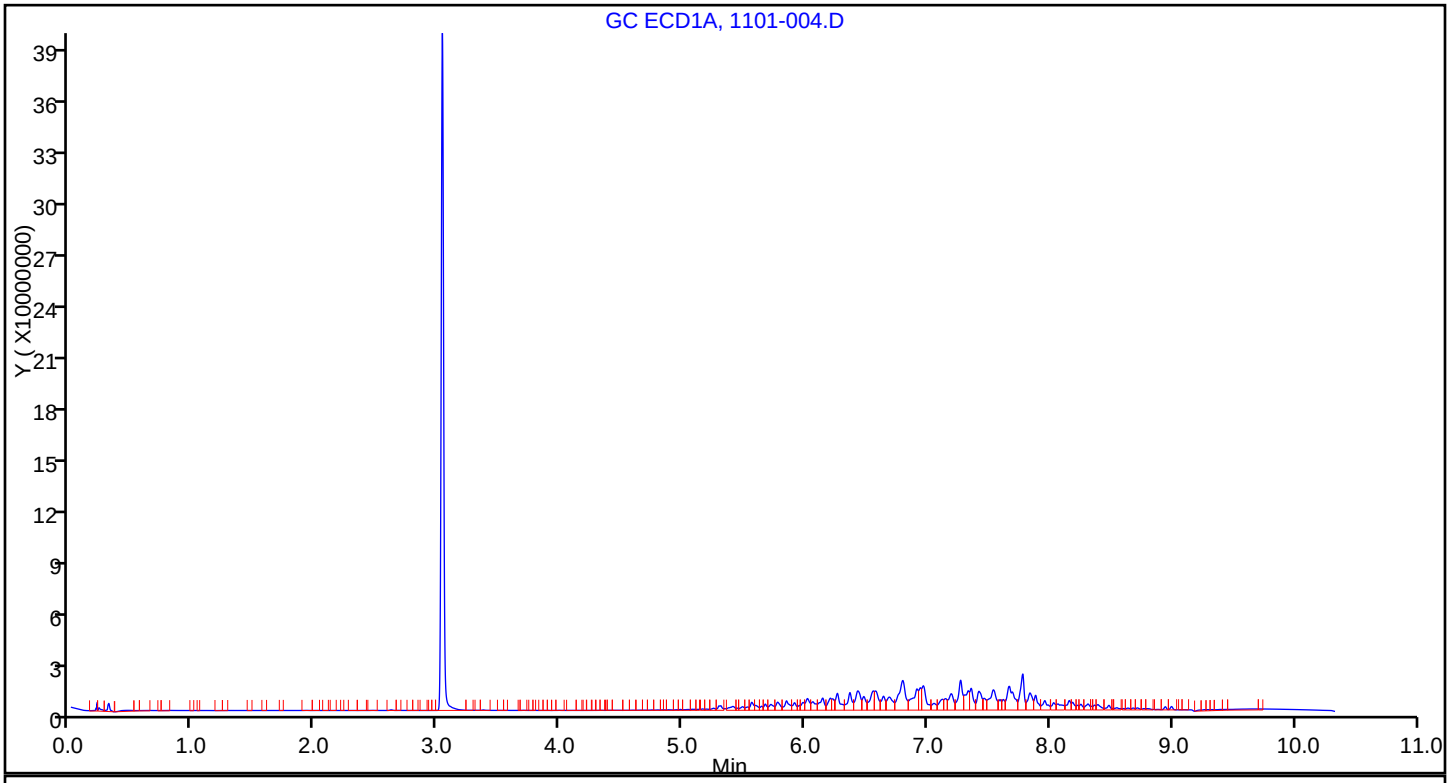
Lims ID: CCV TOXL5

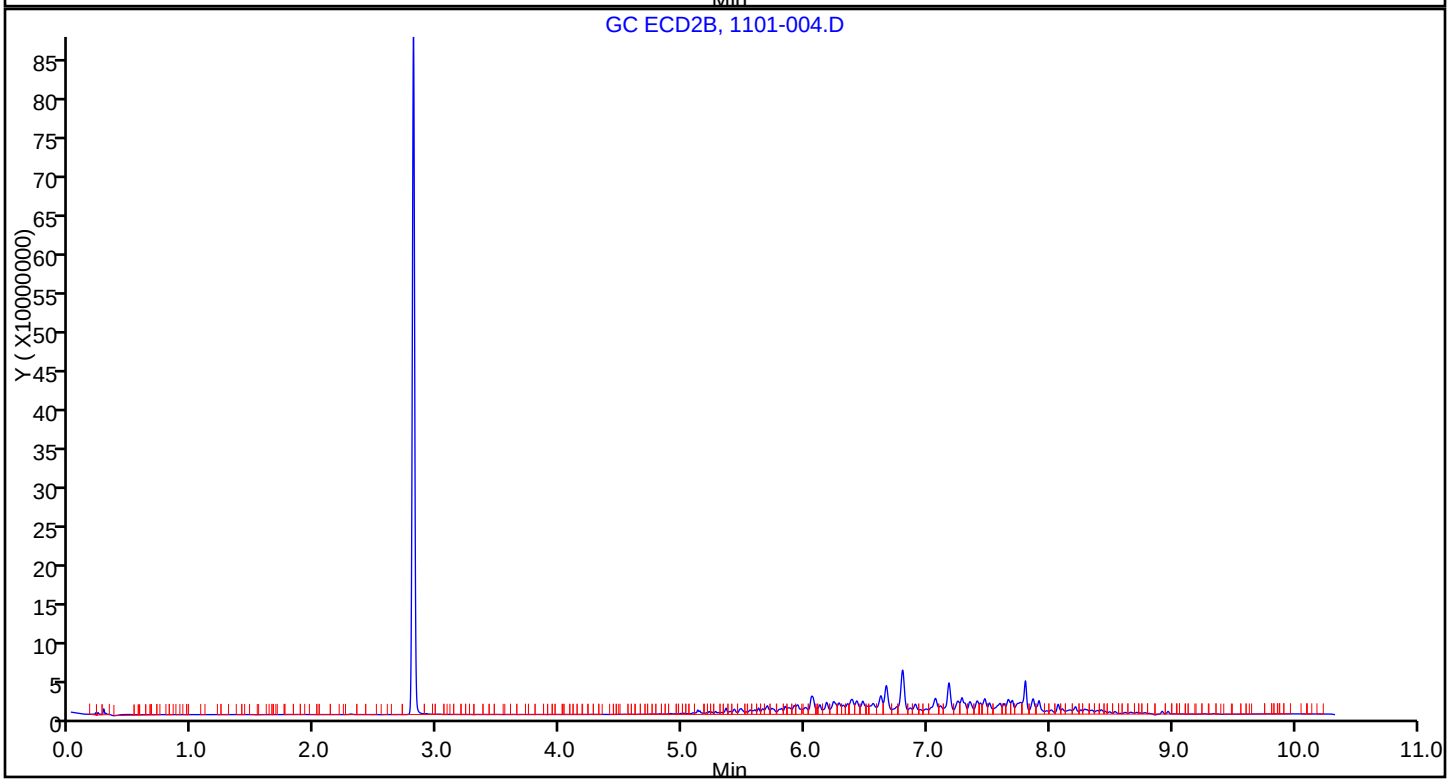
Client ID:

Operator ID: SMH ALS Bottle#: 4 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/20 Calibration Date: 11/01/2016 15:05

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1101-017.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Ave	0.0455	0.0488		536	500	7.3	20.0
Toxaphene Peak 2	Ave	0.0267	0.0306		573	500	14.6	20.0
Toxaphene Peak 3	Ave	0.0287	0.0334		582	500	16.4	20.0
Toxaphene Peak 4	Ave	0.0346	0.0402		581	500	16.2	20.0
Toxaphene Peak 5	Ave	0.0301	0.0343		569	500	13.9	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/20 Calibration Date: 11/01/2016 15:05

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1101-017.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.79	6.76	6.81
Toxaphene Peak 2	7.26	7.24	7.29
Toxaphene Peak 3	7.53	7.51	7.56
Toxaphene Peak 4	7.66	7.63	7.69
Toxaphene Peak 5	7.77	7.74	7.79

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-017.D
Lims ID: CCV TOXL5
Client ID:
Sample Type: CCV
Inject. Date: 01-Nov-2016 15:05:12 ALS Bottle#: 17 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV TOXL5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 17:04:44 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 17:04:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.030	3.030	0.000	548171577	200.0	200.0	
2	2.803	2.803	0.000	1229930357	200.0	200.0	
32 Toxaphene							M
1	6.787	6.787	0.000	66933624	500.0	536.4	
1	7.260	7.260	0.000	41988062	500.0	573.2	
1	7.530	7.530	0.000	45784869	500.0	581.9	
1	7.659	7.659	0.000	55121348	500.0	580.8	M
1	7.768	7.768	0.000	47039487	500.0	569.5	
		Average of Peak Amounts =				568.4	
2	6.660	6.660	0.000	89544707	500.0	513.1	
2	6.792	6.792	0.000	136184096	500.0	512.5	
2	7.170	7.170	0.000	98866522	500.0	520.2	
2	7.797	7.797	0.000	82582681	500.0	535.3	
2	7.860	7.860	0.000	44369194	500.0	500.3	
		Average of Peak Amounts =				516.3	
					RPD =	9.60	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

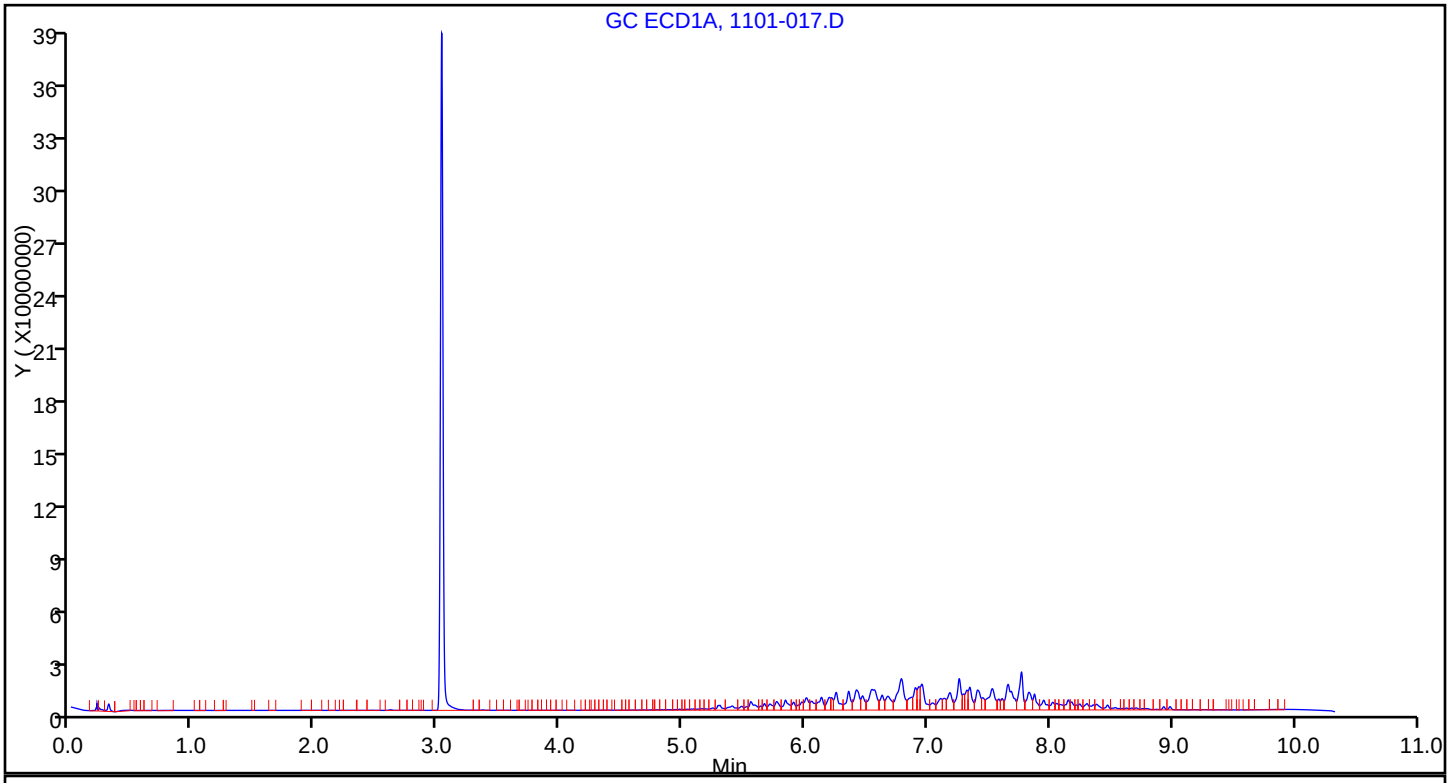
GCTOXL5_00012 Amount Added: 1.00 Units: mL

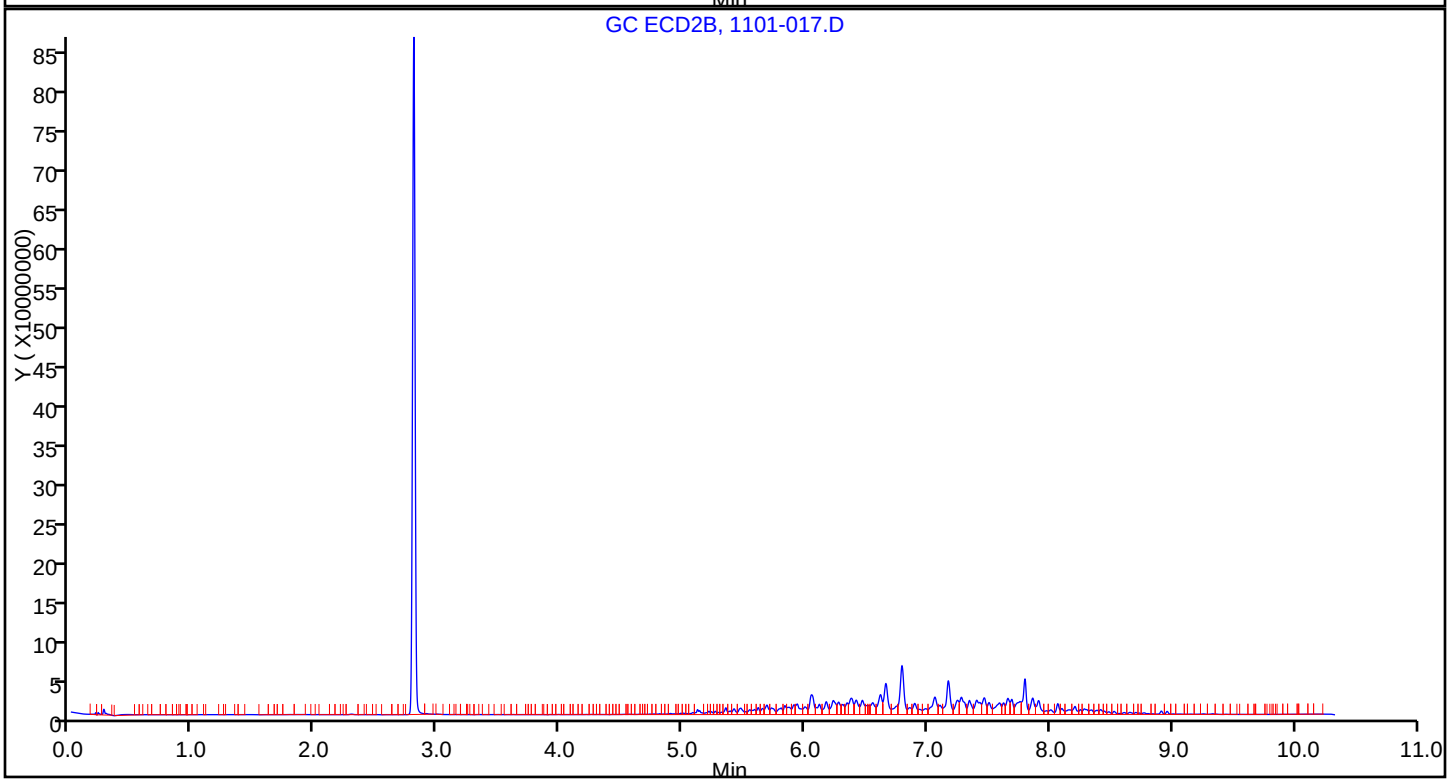
Report Date: 01-Nov-2016 17:04:48 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-017.D

Injection Date:	01-Nov-2016 15:05:12	Instrument ID:	GC75		
Lims ID:	CCV TOXL5				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	17	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/20 Calibration Date: 11/01/2016 15:05

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1101-017.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Ave	0.0284	0.0291		513	500	2.6	20.0
Toxaphene Peak 2	Ave	0.0432	0.0443		512	500	2.5	20.0
Toxaphene Peak 3	Ave	0.0309	0.0322		520	500	4.0	20.0
Toxaphene Peak 4	Ave	0.0251	0.0269		535	500	7.1	20.0
Toxaphene Peak 5	Ave	0.0144	0.0144		500	500	0.0	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/20 Calibration Date: 11/01/2016 15:05

Instrument ID: GC75 Calib Start Date: 10/24/2016 16:32

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/24/2016 17:50

Lab File ID: 1101-017.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.66	6.64	6.69
Toxaphene Peak 2	6.79	6.77	6.82
Toxaphene Peak 3	7.17	7.15	7.20
Toxaphene Peak 4	7.80	7.77	7.82
Toxaphene Peak 5	7.86	7.84	7.89

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-017.D
Lims ID: CCV TOXL5
Client ID:
Sample Type: CCV
Inject. Date: 01-Nov-2016 15:05:12 ALS Bottle#: 17 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV TOXL5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub6

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 17:04:44 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 17:04:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.030	3.030	0.000	548171577	200.0	200.0	
2	2.803	2.803	0.000	1229930357	200.0	200.0	
32 Toxaphene							M
1	6.787	6.787	0.000	66933624	500.0	536.4	
1	7.260	7.260	0.000	41988062	500.0	573.2	
1	7.530	7.530	0.000	45784869	500.0	581.9	
1	7.659	7.659	0.000	55121348	500.0	580.8	M
1	7.768	7.768	0.000	47039487	500.0	569.5	
		Average of Peak Amounts =				568.4	
2	6.660	6.660	0.000	89544707	500.0	513.1	
2	6.792	6.792	0.000	136184096	500.0	512.5	
2	7.170	7.170	0.000	98866522	500.0	520.2	
2	7.797	7.797	0.000	82582681	500.0	535.3	
2	7.860	7.860	0.000	44369194	500.0	500.3	
		Average of Peak Amounts =				516.3	
					RPD =	9.60	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

GCTOXL5_00012 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 17:04:49 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-017.D

Injection Date: 01-Nov-2016 15:05:12 Instrument ID: GC75

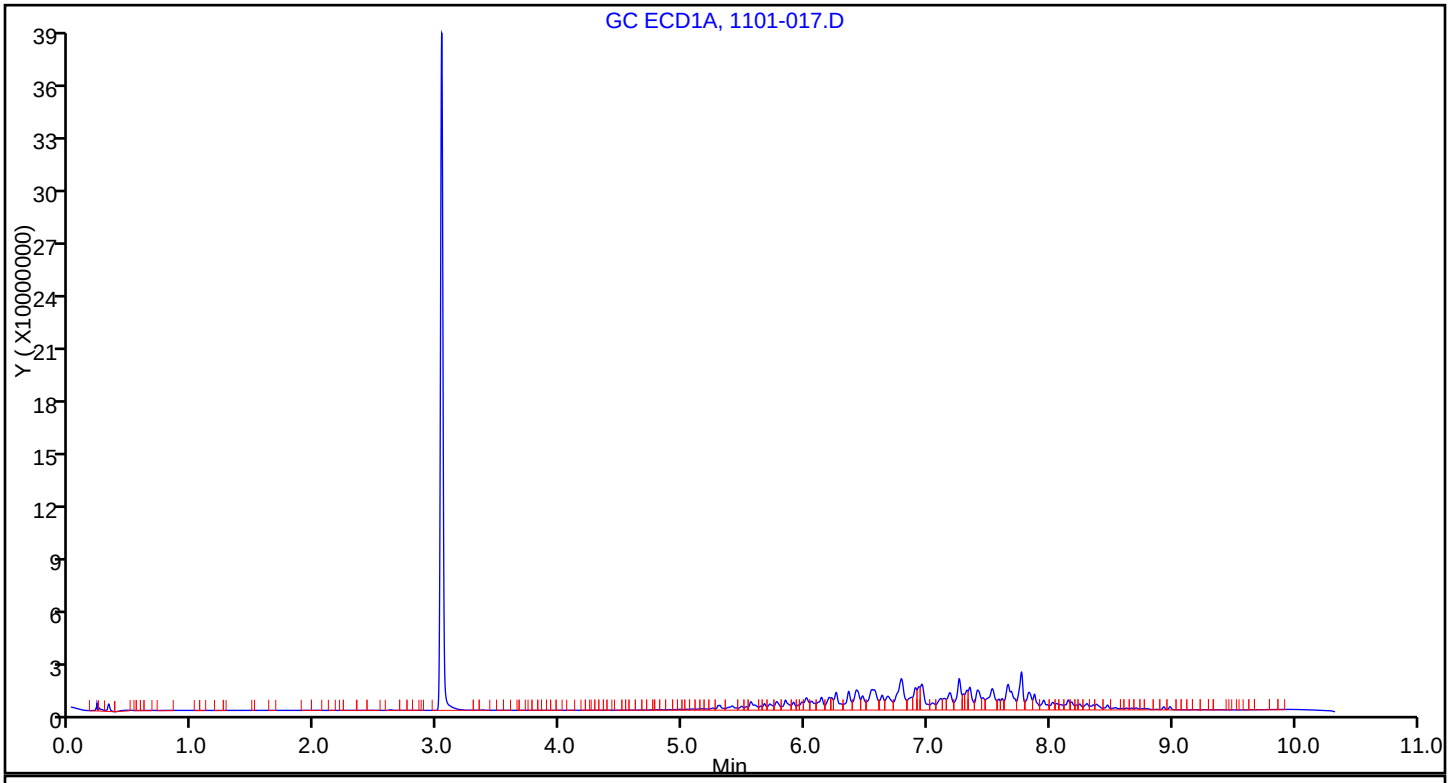
Lims ID: CCV TOXL5

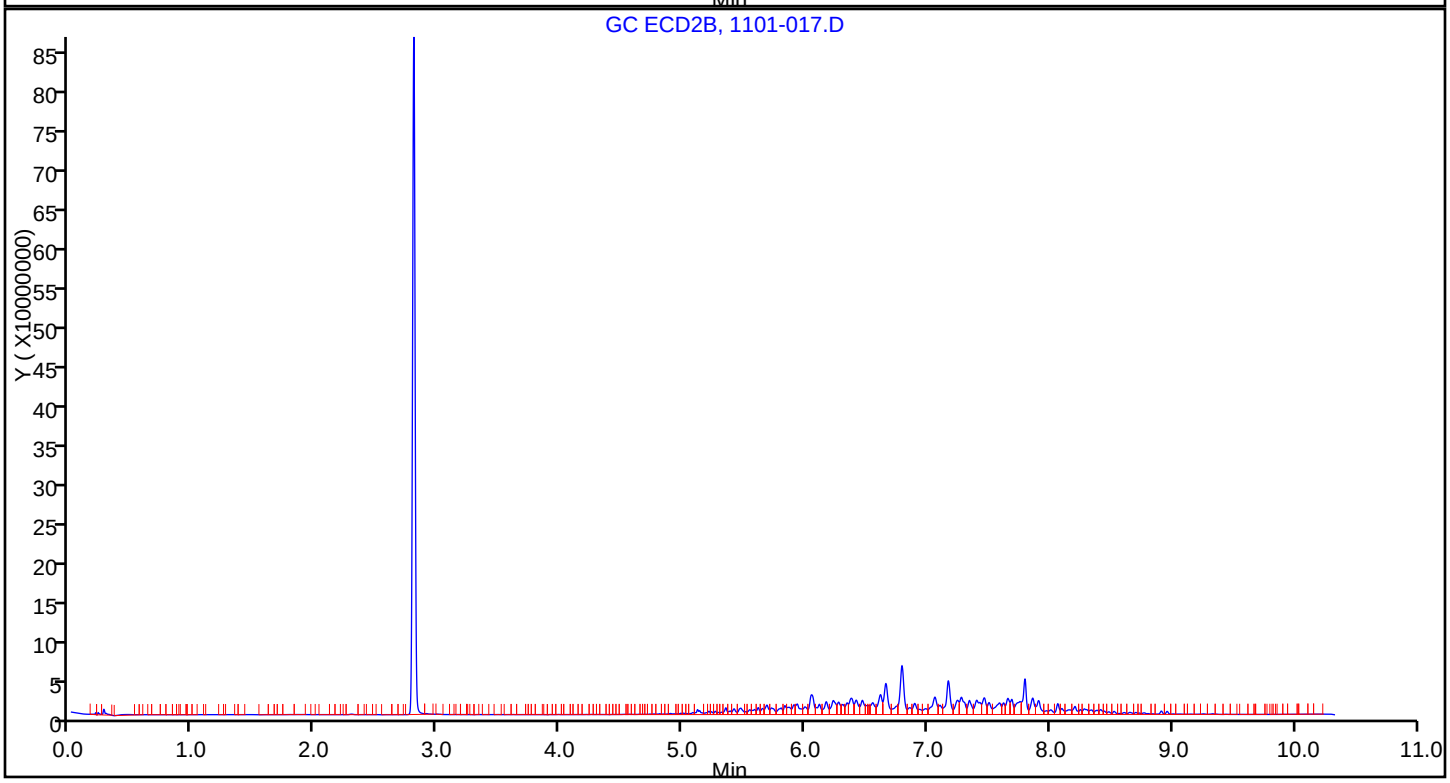
Client ID:

Operator ID: SMH ALS Bottle#: 17 Worklist Smp#: 20

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/21 Calibration Date: 11/01/2016 15:20

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-018.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
alpha-BHC	Ave	1.341	1.366		20.4	20.0	1.9	20.0
gamma-BHC (Lindane)	Ave	1.268	1.276		20.1	20.0	0.6	20.0
beta-BHC	Ave	0.5415	0.4931		18.2	20.0	-8.9	20.0
delta-BHC	Ave	1.187	1.216		20.5	20.0	2.5	20.0
Heptachlor	Ave	1.181	1.212		20.5	20.0	2.6	20.0
Aldrin	Ave	1.180	1.181		20.0	20.0	0.1	20.0
Heptachlor epoxide	Ave	1.081	1.056		19.5	20.0	-2.3	20.0
gamma-Chlordane	Ave	1.110	1.097		19.8	20.0	-1.2	20.0
alpha-Chlordane	Ave	1.087	1.065		19.6	20.0	-2.0	20.0
4,4'-DDE	Ave	1.003	1.006		20.1	20.0	0.4	20.0
Endosulfan I	Ave	1.032	0.9919		19.2	20.0	-3.8	20.0
Dieldrin	Ave	1.094	1.101		20.1	20.0	0.6	20.0
Endrin	Ave	0.9053	0.8864		19.6	20.0	-2.1	20.0
4,4'-DDD	Ave	0.8771	0.8558		19.5	20.0	-2.4	20.0
Endosulfan II	Ave	0.8485	0.8889		21.0	20.0	4.8	20.0
4,4'-DDT	Ave	0.7135	0.7832		22.0	20.0	9.8	20.0
Endrin aldehyde	Ave	0.7691	0.7592		19.7	20.0	-1.3	20.0
Methoxychlor	Ave	0.3978	0.4164		20.9	20.0	4.7	20.0
Endosulfan sulfate	Ave	0.8713	0.8541		19.6	20.0	-2.0	20.0
Endrin ketone	Ave	0.9428	0.9577		20.3	20.0	1.6	20.0
Tetrachloro-m-xylene	Ave	0.9113	0.8886		19.5	20.0	-2.5	20.0
DCB Decachlorobiphenyl	Ave	0.7505	0.8120		21.6	20.0	8.2	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/21 Calibration Date: 11/01/2016 15:20

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP I ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-018.D

Analyte	RT	RT WINDOW	
		FROM	TO
alpha-BHC	4.34	4.31	4.36
gamma-BHC (Lindane)	4.59	4.56	4.61
beta-BHC	4.65	4.63	4.68
delta-BHC	4.79	4.76	4.81
Heptachlor	4.94	4.92	4.97
Aldrin	5.16	5.13	5.18
Heptachlor epoxide	5.63	5.61	5.66
gamma-Chlordane	5.74	5.72	5.77
alpha-Chlordane	5.87	5.84	5.89
4,4'-DDE	5.93	5.91	5.96
Endosulfan I	6.00	5.97	6.03
Dieldrin	6.25	6.22	6.28
Endrin	6.52	6.49	6.54
4,4'-DDD	6.59	6.57	6.62
Endosulfan II	6.80	6.77	6.82
4,4'-DDT	6.97	6.94	7.00
Endrin aldehyde	7.37	7.34	7.39
Methoxychlor	7.62	7.59	7.64
Endosulfan sulfate	7.87	7.85	7.90
Endrin ketone	8.16	8.14	8.19
Tetrachloro-m-xylene	3.85	3.83	3.88
DCB Decachlorobiphenyl	9.20	9.17	9.22

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-018.D
Lims ID: CCV PESTL5
Client ID:
Sample Type: CCV
Inject. Date: 01-Nov-2016 15:20:50 ALS Bottle#: 18 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVRT PESTL5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 17:05:09 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 17:05:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.029	3.029	0.000	547545505	200.0	200.0	
2	2.802	2.802	0.000	1226720005	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.852	3.852	0.000	48656961	20.0	19.5	
2	3.727	3.727	0.000	105748603	20.0	19.6	
						RPD = 0.60	
11 alpha-BHC							
1	4.337	4.337	0.000	74805093	20.0	20.4	
2	4.252	4.252	0.000	162580748	20.0	20.0	
						RPD = 1.73	
2 gamma-BHC (Lindane)							
1	4.586	4.586	0.000	69853919	20.0	20.1	
2	4.523	4.523	0.000	151701638	20.0	19.9	
						RPD = 1.02	
6 beta-BHC							
1	4.653	4.653	0.000	26998247	20.0	18.2	
2	4.592	4.592	0.000	57520231	20.0	18.5	
						RPD = 1.41	
18 delta-BHC							
1	4.785	4.785	0.000	66601413	20.0	20.5	
2	4.798	4.798	0.000	149895056	20.0	20.0	
						RPD = 2.31	
19 Heptachlor							
1	4.941	4.941	0.000	66353668	20.0	20.5	
2	4.833	4.833	0.000	136489975	20.0	19.7	
						RPD = 3.93	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.156	5.156	0.000	64676395	20.0	20.0	
2	5.052	5.052	0.000	136351400	20.0	19.9	
						RPD = 0.73	
26 Heptachlor epoxide							
1	5.633	5.633	0.000	57817472	20.0	19.5	
2	5.474	5.474	0.000	122795345	20.0	19.6	
						RPD = 0.46	
25 gamma-Chlordane							
1	5.744	5.744	0.000	60077982	20.0	19.8	
2	5.629	5.629	0.000	124323709	20.0	19.6	
						RPD = 0.79	
15 alpha-Chlordane							
1	5.866	5.866	0.000	58299658	20.0	19.6	
2	5.756	5.756	0.000	108828145	20.0	18.8	
						RPD = 4.28	
16 4,4'-DDE							
1	5.932	5.932	0.000	55105397	20.0	20.1	
2	5.912	5.912	0.000	121257993	20.0	20.5	
						RPD = 2.00	
7 Endosulfan I							
1	6.000	6.000	0.000	54308574	20.0	19.2	
2	5.809	5.809	0.000	111143808	20.0	19.3	
						RPD = 0.59	
29 Dieldrin							
1	6.249	6.249	0.000	60292786	20.0	20.1	
2	6.077	6.077	0.000	128233600	20.0	20.1	
						RPD = 0.11	
13 Endrin							
1	6.516	6.516	0.000	48536034	20.0	19.6	
2	6.413	6.413	0.000	99815358	20.0	18.9	
						RPD = 3.52	
12 4,4'-DDD							
1	6.591	6.591	0.000	46858914	20.0	19.5	
2	6.557	6.557	0.000	99593236	20.0	19.4	
						RPD = 0.80	
10 Endosulfan II							
1	6.798	6.798	0.000	48671460	20.0	21.0	
2	6.681	6.681	0.000	101945801	20.0	20.5	
						RPD = 2.20	
14 4,4'-DDT							
1	6.970	6.970	0.000	42882734	20.0	22.0	
2	6.990	6.990	0.000	92308910	20.0	20.4	
						RPD = 7.22	
27 Endrin aldehyde							
1	7.365	7.365	0.000	41567487	20.0	19.7	
2	7.163	7.163	0.000	86338490	20.0	19.3	
						RPD = 2.31	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.617	7.617	0.000	22798913	20.0	20.9	
2	7.890	7.890	0.000	46368882	20.0	19.0	
						RPD = 9.70	
30 Endosulfan sulfate							
1	7.873	7.873	0.000	46766634	20.0	19.6	
2	7.525	7.525	0.000	99902346	20.0	19.7	
						RPD = 0.35	
1 Endrin ketone							
1	8.163	8.163	0.000	52438188	20.0	20.3	
2	8.110	8.110	0.000	110454179	20.0	20.2	
						RPD = 0.59	
$ 23 DCB Decachlorobiphenyl							
1	9.198	9.198	0.000	44459341	20.0	21.6	
2	9.397	9.397	0.000	89190155	20.0	21.0	
						RPD = 2.95	

Reagents:

GCPESTL5_00012 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 17:05:11 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-018.D

Injection Date: 01-Nov-2016 15:20:50 Instrument ID: GC75

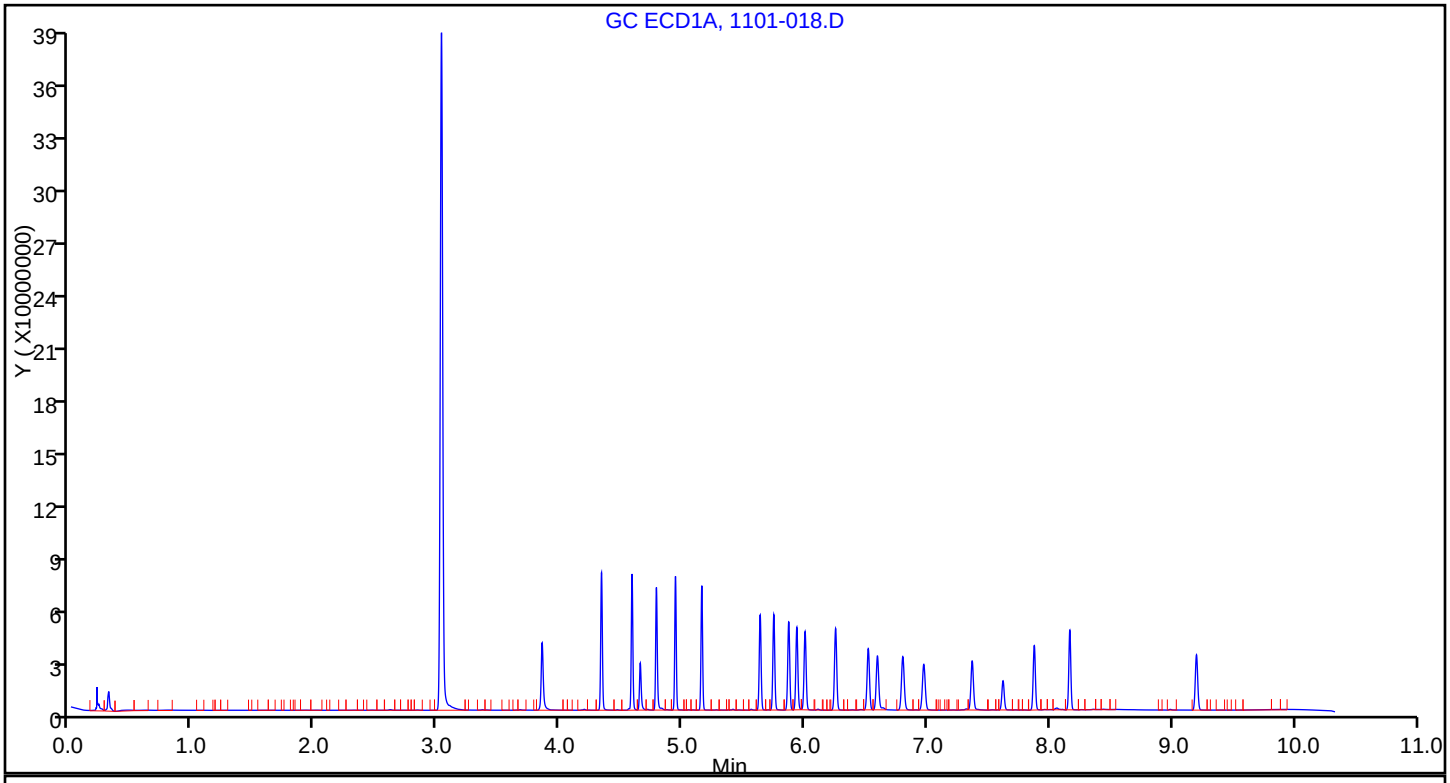
Lims ID: CCV PESTL5

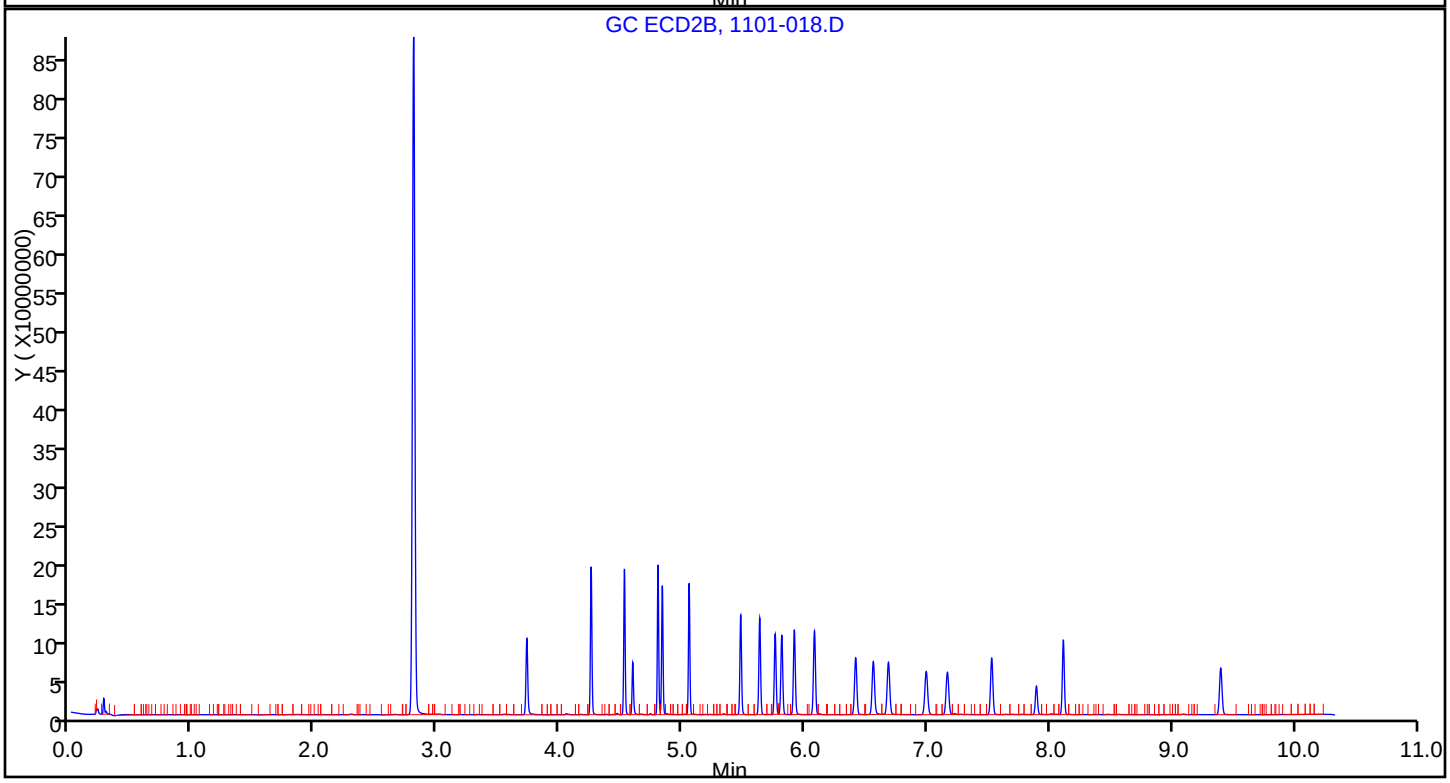
Client ID:

Operator ID: SMH ALS Bottle#: 18 Worklist Smp#: 21

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/21 Calibration Date: 11/01/2016 15:20

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-018.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
alpha-BHC	Ave	1.324	1.325		20.0	20.0	0.1	20.0
gamma-BHC (Lindane)	Ave	1.242	1.237		19.9	20.0	-0.4	20.0
beta-BHC	Ave	0.5077	0.4689		18.5	20.0	-7.6	20.0
delta-BHC	Ave	1.220	1.222		20.0	20.0	0.2	20.0
Heptachlor	Ave	1.128	1.113		19.7	20.0	-1.4	20.0
Aldrin	Ave	1.118	1.112		19.9	20.0	-0.6	20.0
Heptachlor epoxide	Ave	1.020	1.001		19.6	20.0	-1.9	20.0
gamma-Chlordane	Ave	1.034	1.013		19.6	20.0	-2.0	20.0
alpha-Chlordane	Ave	0.9452	0.8872		18.8	20.0	-6.1	20.0
Endosulfan I	Ave	0.9368	0.9060		19.3	20.0	-3.3	20.0
4,4'-DDE	Ave	0.9655	0.9885		20.5	20.0	2.4	20.0
Dieldrin	Ave	1.040	1.045		20.1	20.0	0.5	20.0
Endrin	Ave	0.8608	0.8137		18.9	20.0	-5.5	20.0
4,4'-DDD	Ave	0.8388	0.8119		19.4	20.0	-3.2	20.0
Endosulfan II	Ave	0.8109	0.8310		20.5	20.0	2.5	20.0
4,4'-DDT	Ave	0.7368	0.7525		20.4	20.0	2.1	20.0
Endrin aldehyde	Ave	0.7297	0.7038		19.3	20.0	-3.5	20.0
Endosulfan sulfate	Ave	0.8278	0.8144		19.7	20.0	-1.6	20.0
Methoxychlor	Ave	0.3979	0.3780		19.0	20.0	-5.0	20.0
Endrin ketone	Ave	0.8916	0.9004		20.2	20.0	1.0	20.0
Tetrachloro-m-xylene	Ave	0.8788	0.8620		19.6	20.0	-1.9	20.0
DCB Decachlorobiphenyl	Ave	0.6921	0.7271		21.0	20.0	5.0	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: CCV 320-135416/21 Calibration Date: 11/01/2016 15:20

Instrument ID: GC75 Calib Start Date: 10/29/2016 14:16

GC Column: STX-CLP II ID: 0.32(mm) Calib End Date: 10/29/2016 15:50

Lab File ID: 1101-018.D

Analyte	RT	RT WINDOW	
		FROM	TO
alpha-BHC	4.25	4.23	4.28
gamma-BHC (Lindane)	4.52	4.50	4.55
beta-BHC	4.59	4.57	4.62
delta-BHC	4.80	4.77	4.82
Heptachlor	4.83	4.81	4.86
Aldrin	5.05	5.03	5.08
Heptachlor epoxide	5.47	5.45	5.50
gamma-Chlordane	5.63	5.60	5.66
alpha-Chlordane	5.76	5.73	5.78
Endosulfan I	5.81	5.78	5.84
4,4'-DDE	5.91	5.89	5.94
Dieldrin	6.08	6.05	6.10
Endrin	6.41	6.39	6.44
4,4'-DDD	6.56	6.53	6.58
Endosulfan II	6.68	6.66	6.71
4,4'-DDT	6.99	6.96	7.02
Endrin aldehyde	7.16	7.14	7.19
Endosulfan sulfate	7.53	7.50	7.55
Methoxychlor	7.89	7.86	7.92
Endrin ketone	8.11	8.08	8.14
Tetrachloro-m-xylene	3.73	3.70	3.75
DCB Decachlorobiphenyl	9.40	9.37	9.42

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-018.D
Lims ID: CCV PESTL5
Client ID:
Sample Type: CCV
Inject. Date: 01-Nov-2016 15:20:50 ALS Bottle#: 18 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVRT PESTL5
Operator ID: SMH Instrument ID: GC75
Sublist: chrom-GC 8081 ICAL - IS_GC75*sub5

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 17:05:09 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 17:05:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.029	3.029	0.000	547545505	200.0	200.0	
2	2.802	2.802	0.000	1226720005	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.852	3.852	0.000	48656961	20.0	19.5	
2	3.727	3.727	0.000	105748603	20.0	19.6	
						RPD = 0.60	
11 alpha-BHC							
1	4.337	4.337	0.000	74805093	20.0	20.4	
2	4.252	4.252	0.000	162580748	20.0	20.0	
						RPD = 1.73	
2 gamma-BHC (Lindane)							
1	4.586	4.586	0.000	69853919	20.0	20.1	
2	4.523	4.523	0.000	151701638	20.0	19.9	
						RPD = 1.02	
6 beta-BHC							
1	4.653	4.653	0.000	26998247	20.0	18.2	
2	4.592	4.592	0.000	57520231	20.0	18.5	
						RPD = 1.41	
18 delta-BHC							
1	4.785	4.785	0.000	66601413	20.0	20.5	
2	4.798	4.798	0.000	149895056	20.0	20.0	
						RPD = 2.31	
19 Heptachlor							
1	4.941	4.941	0.000	66353668	20.0	20.5	
2	4.833	4.833	0.000	136489975	20.0	19.7	
						RPD = 3.93	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
8 Aldrin							
1	5.156	5.156	0.000	64676395	20.0	20.0	
2	5.052	5.052	0.000	136351400	20.0	19.9	
						RPD = 0.73	
26 Heptachlor epoxide							
1	5.633	5.633	0.000	57817472	20.0	19.5	
2	5.474	5.474	0.000	122795345	20.0	19.6	
						RPD = 0.46	
25 gamma-Chlordane							
1	5.744	5.744	0.000	60077982	20.0	19.8	
2	5.629	5.629	0.000	124323709	20.0	19.6	
						RPD = 0.79	
15 alpha-Chlordane							
1	5.866	5.866	0.000	58299658	20.0	19.6	
2	5.756	5.756	0.000	108828145	20.0	18.8	
						RPD = 4.28	
16 4,4'-DDE							
1	5.932	5.932	0.000	55105397	20.0	20.1	
2	5.912	5.912	0.000	121257993	20.0	20.5	
						RPD = 2.00	
7 Endosulfan I							
1	6.000	6.000	0.000	54308574	20.0	19.2	
2	5.809	5.809	0.000	111143808	20.0	19.3	
						RPD = 0.59	
29 Dieldrin							
1	6.249	6.249	0.000	60292786	20.0	20.1	
2	6.077	6.077	0.000	128233600	20.0	20.1	
						RPD = 0.11	
13 Endrin							
1	6.516	6.516	0.000	48536034	20.0	19.6	
2	6.413	6.413	0.000	99815358	20.0	18.9	
						RPD = 3.52	
12 4,4'-DDD							
1	6.591	6.591	0.000	46858914	20.0	19.5	
2	6.557	6.557	0.000	99593236	20.0	19.4	
						RPD = 0.80	
10 Endosulfan II							
1	6.798	6.798	0.000	48671460	20.0	21.0	
2	6.681	6.681	0.000	101945801	20.0	20.5	
						RPD = 2.20	
14 4,4'-DDT							
1	6.970	6.970	0.000	42882734	20.0	22.0	
2	6.990	6.990	0.000	92308910	20.0	20.4	
						RPD = 7.22	
27 Endrin aldehyde							
1	7.365	7.365	0.000	41567487	20.0	19.7	
2	7.163	7.163	0.000	86338490	20.0	19.3	
						RPD = 2.31	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
9 Methoxychlor							
1	7.617	7.617	0.000	22798913	20.0	20.9	
2	7.890	7.890	0.000	46368882	20.0	19.0	
						RPD = 9.70	
30 Endosulfan sulfate							
1	7.873	7.873	0.000	46766634	20.0	19.6	
2	7.525	7.525	0.000	99902346	20.0	19.7	
						RPD = 0.35	
1 Endrin ketone							
1	8.163	8.163	0.000	52438188	20.0	20.3	
2	8.110	8.110	0.000	110454179	20.0	20.2	
						RPD = 0.59	
$ 23 DCB Decachlorobiphenyl							
1	9.198	9.198	0.000	44459341	20.0	21.6	
2	9.397	9.397	0.000	89190155	20.0	21.0	
						RPD = 2.95	

Reagents:

GCPESTL5_00012 Amount Added: 1.00 Units: mL

Report Date: 01-Nov-2016 17:05:11 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-018.D

Injection Date: 01-Nov-2016 15:20:50 Instrument ID: GC75

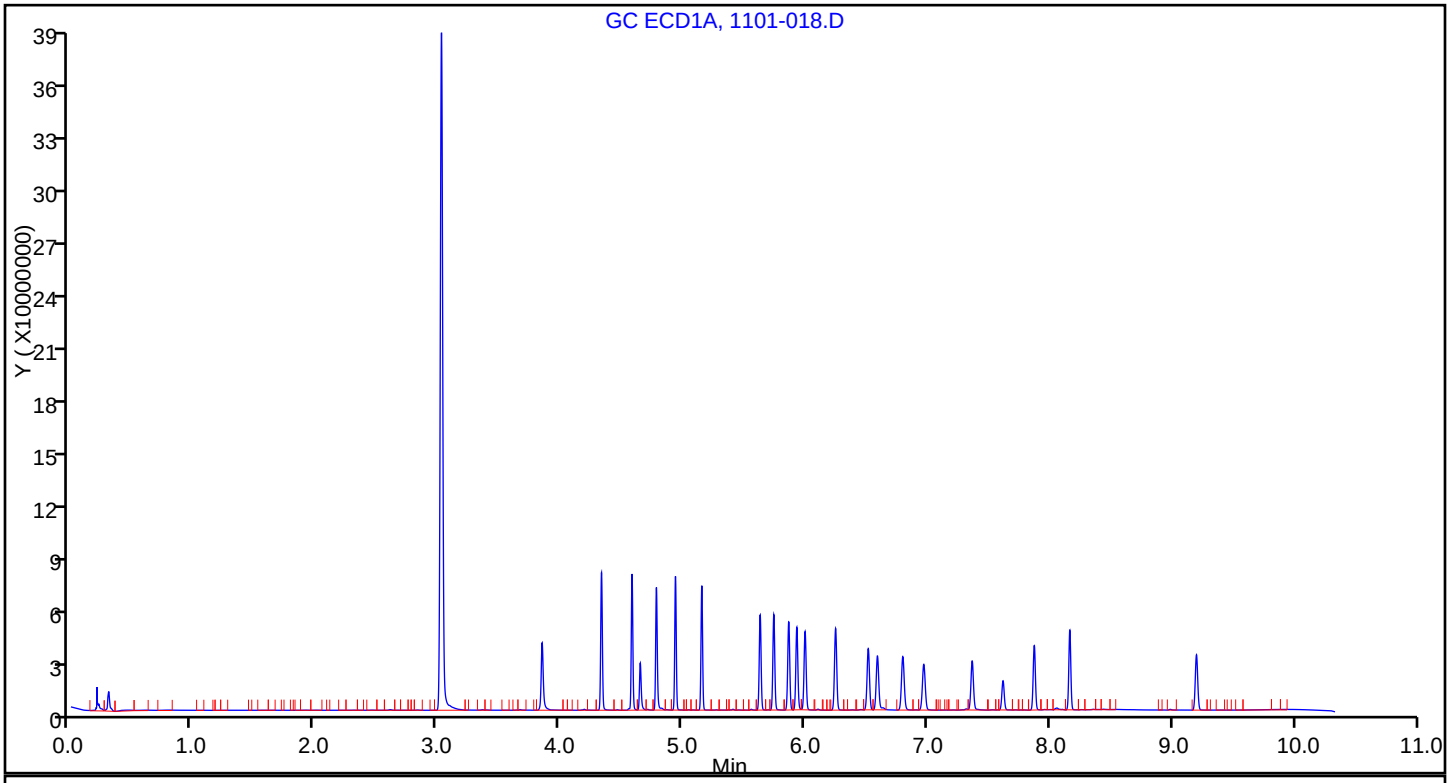
Lims ID: CCV PESTL5

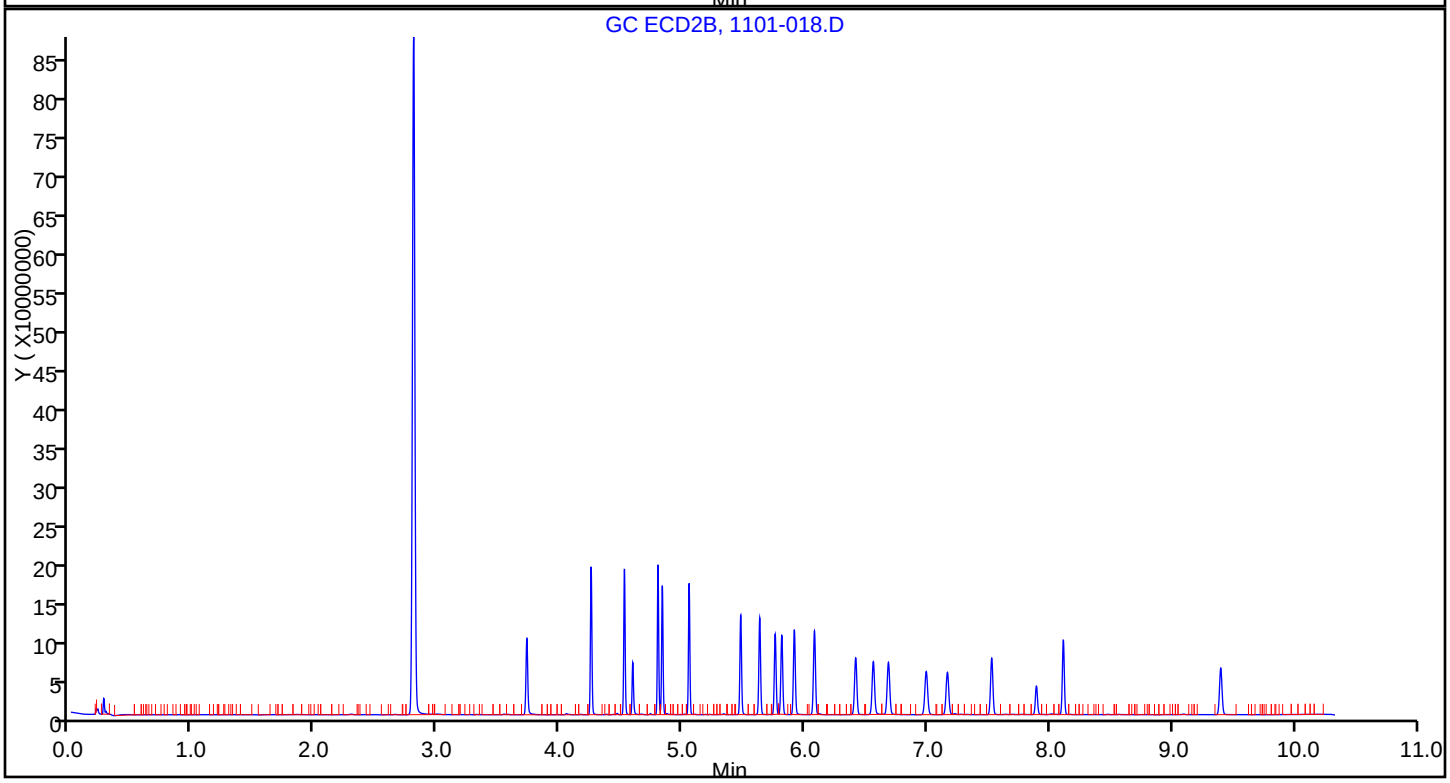
Client ID:

Operator ID: SMH ALS Bottle#: 18 Worklist Smp#: 21

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL





FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-134124/1-A

Matrix: Water | Lab File ID: 1101-008.D

Analysis Method: 8081B | Date Collected:

Extraction Method: 3510C | Date Extracted: 10/24/2016 10:43

Sample wt/vol: 1000(mL) | Date Analyzed: 11/01/2016 12:06

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: STX-CLP I ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 135416 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
319-84-6	alpha-BHC	0.025	U	0.050	0.025	0.0070
58-89-9	gamma-BHC (Lindane)	0.012	U	0.050	0.012	0.0060
319-85-7	beta-BHC	0.025	U	0.050	0.025	0.0070
319-86-8	delta-BHC	0.025	U	0.050	0.025	0.011
76-44-8	Heptachlor	0.025	U	0.050	0.025	0.0070
309-00-2	Aldrin	0.012	U	0.050	0.012	0.0060
1024-57-3	Heptachlor epoxide	0.012	U	0.050	0.012	0.0060
5103-74-2	gamma-Chlordane	0.025	U	0.050	0.025	0.012
5103-71-9	alpha-Chlordane	0.012	U	0.050	0.012	0.0060
959-98-8	Endosulfan I	0.012	U	0.050	0.012	0.0060
72-55-9	4,4'-DDE	0.025	U	0.050	0.025	0.012
60-57-1	Dieldrin	0.025	U	0.050	0.025	0.012
72-20-8	Endrin	0.025	U	0.050	0.025	0.012
72-54-8	4,4'-DDD	0.025	U	0.050	0.025	0.012
33213-65-9	Endosulfan II	0.025	U	0.050	0.025	0.012
50-29-3	4,4'-DDT	0.025	U	0.050	0.025	0.012
7421-93-4	Endrin aldehyde	0.080	U	0.10	0.080	0.025
1031-07-8	Endosulfan sulfate	0.025	U	0.050	0.025	0.012
72-43-5	Methoxychlor	0.080	U	0.10	0.080	0.042
53494-70-5	Endrin ketone	0.080	U	0.10	0.080	0.020
8001-35-2	Toxaphene	1.0	U	2.0	1.0	0.51

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	86		44-124
2051-24-3	DCB Decachlorobiphenyl	68		12-131

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D
Lims ID: MB 320-134124/1-A
Client ID:
Sample Type: MB
Inject. Date: 01-Nov-2016 12:06:19 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 MB
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:06 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:06

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.036	-0.002	471815474	200.0	200.0	
2	2.802	2.800	0.001	1062602678	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	73709029	40.0	34.3	
2	3.727	3.726	0.001	162373199	40.0	34.8	
						RPD = 1.43	
2 gamma-BHC (Lindane)							M
1	4.582	4.590	-0.008	39048		0.0131	
2	4.516	4.524	-0.008	1016260		0.1541	M
						RPD = 168.75	
LOD = 0.0800							
6 beta-BHC							M
1	4.676	4.657	0.019	225174		0.1763	
2	4.584	4.592	-0.008	1024291		0.3797	M
						RPD = 73.19	
18 delta-BHC							M
1	4.807	4.789	0.018	634543		0.2266	
2	4.789	4.799	-0.010	1399947		0.2160	M
						RPD = 4.83	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
29 Dieldrin							M
1	6.237	6.256	-0.019	195962		0.0759	
2	6.070	6.077	-0.007	309234		0.0560	M
						RPD = 30.25	
LOD = 0.1000							
14 4,4'-DDT							
1	6.992	6.978	0.014	55991		0.0333	
2	7.004	6.992	0.012	194998		0.0498	
						RPD = 39.83	
LOD = 0.1000							
27 Endrin aldehyde							
1	7.378	7.372	0.006	83646		0.0461	
2	7.167	7.164	0.003	351259		0.0906	
						RPD = 65.10	
LOD = 0.3000							
9 Methoxychlor							
1	7.621	7.624	-0.003	86111		0.0918	
2	7.872	7.891	-0.019	2375870		1.12	
						RPD = 169.80	
LOD = 0.2000							
30 Endosulfan sulfate							
1	7.864	7.879	-0.015	228021		0.1109	
2	7.529	7.526	0.003	75792		0.0172	
						RPD = 146.22	
LOD = 0.2000							
1 Endrin ketone							
1	8.151	8.169	-0.018	2421501		1.09	
2	8.105	8.112	-0.007	1857687		0.3922	
						RPD = 94.08	
$ 23 DCB Decachlorobiphenyl							
1	9.204	9.206	-0.002	47977123	40.0	27.1	
2	9.400	9.400	0.000	97919645	40.0	26.6	
						RPD = 1.75	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

Reagents:

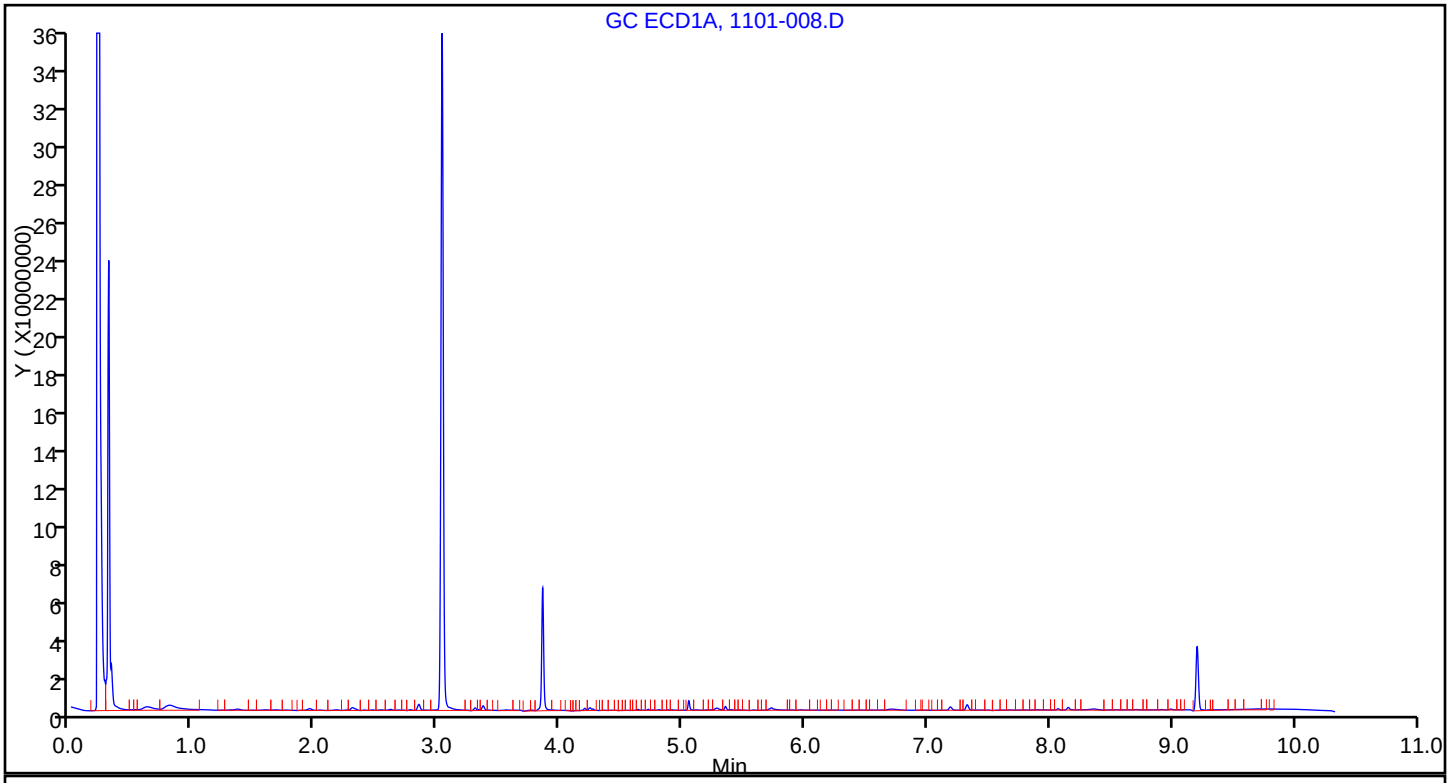
GCPESTISIM_00005 Amount Added: 10.00 Units: uL Run Reagent

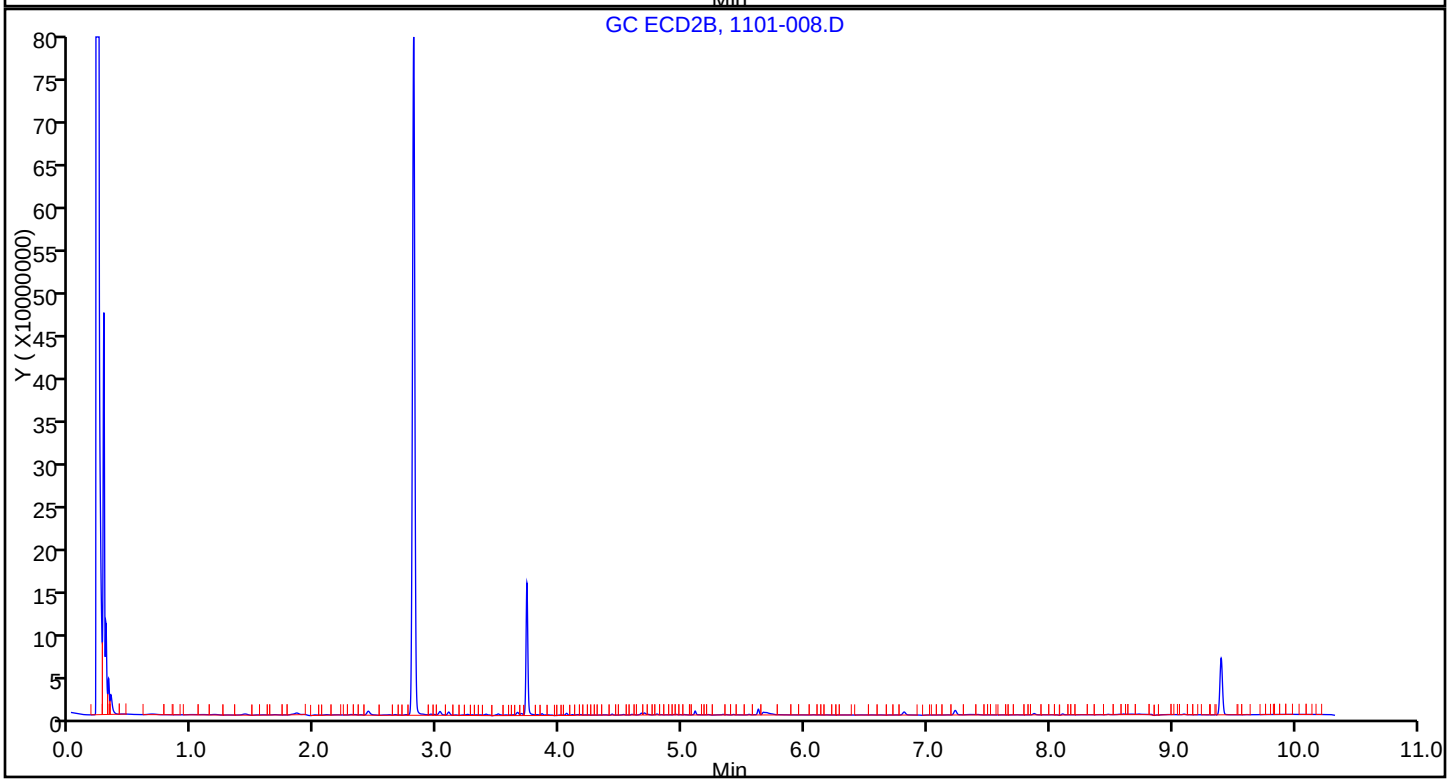
Report Date: 01-Nov-2016 16:53:07 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D

Injection Date:	01-Nov-2016 12:06:19	Instrument ID:	GC75		
Lims ID:	MB 320-134124/1-A				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	8	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D
Lims ID: MB 320-134124/1-A
Client ID:
Sample Type: MB
Inject. Date: 01-Nov-2016 12:06:19 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 MB
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:06 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:06

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	34.3	85.71
$ 23 DCB Decachlorobiphenyl	40.0	27.1	67.75

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	34.8	86.94
$ 23 DCB Decachlorobiphenyl	40.0	26.6	66.57

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-134124/1-A

Matrix: Water Lab File ID: 1101-008.D

Analysis Method: 8081B Date Collected:

Extraction Method: 3510C Date Extracted: 10/24/2016 10:43

Sample wt/vol: 1000(mL) Date Analyzed: 11/01/2016 12:06

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: STX-CLP II ID: 0.32(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 135416 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	87		44-124
2051-24-3	DCB Decachlorobiphenyl	67		12-131

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D
Lims ID: MB 320-134124/1-A
Client ID:
Sample Type: MB
Inject. Date: 01-Nov-2016 12:06:19 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 MB
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:06 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:06

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.034	3.036	-0.002	471815474	200.0	200.0	
2	2.802	2.800	0.001	1062602678	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.856	3.856	0.000	73709029	40.0	34.3	
2	3.727	3.726	0.001	162373199	40.0	34.8	
						RPD = 1.43	
2 gamma-BHC (Lindane)							M
1	4.582	4.590	-0.008	39048		0.0131	
2	4.516	4.524	-0.008	1016260		0.1541	M
						RPD = 168.75	
LOD = 0.0800							
6 beta-BHC							M
1	4.676	4.657	0.019	225174		0.1763	
2	4.584	4.592	-0.008	1024291		0.3797	M
						RPD = 73.19	
18 delta-BHC							M
1	4.807	4.789	0.018	634543		0.2266	
2	4.789	4.799	-0.010	1399947		0.2160	M
						RPD = 4.83	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
29 Dieldrin							M
1	6.237	6.256	-0.019	195962		0.0759	
2	6.070	6.077	-0.007	309234		0.0560	M
						RPD = 30.25	
LOD = 0.1000							
14 4,4'-DDT							
1	6.992	6.978	0.014	55991		0.0333	
2	7.004	6.992	0.012	194998		0.0498	
						RPD = 39.83	
LOD = 0.1000							
27 Endrin aldehyde							
1	7.378	7.372	0.006	83646		0.0461	
2	7.167	7.164	0.003	351259		0.0906	
						RPD = 65.10	
LOD = 0.3000							
9 Methoxychlor							
1	7.621	7.624	-0.003	86111		0.0918	
2	7.872	7.891	-0.019	2375870		1.12	
						RPD = 169.80	
LOD = 0.2000							
30 Endosulfan sulfate							
1	7.864	7.879	-0.015	228021		0.1109	
2	7.529	7.526	0.003	75792		0.0172	
						RPD = 146.22	
LOD = 0.2000							
1 Endrin ketone							
1	8.151	8.169	-0.018	2421501		1.09	
2	8.105	8.112	-0.007	1857687		0.3922	
						RPD = 94.08	
$ 23 DCB Decachlorobiphenyl							
1	9.204	9.206	-0.002	47977123	40.0	27.1	
2	9.400	9.400	0.000	97919645	40.0	26.6	
						RPD = 1.75	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

Reagents:

GCPESTISIM_00005 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 01-Nov-2016 16:53:07 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D

Injection Date: 01-Nov-2016 12:06:19 Instrument ID: GC75

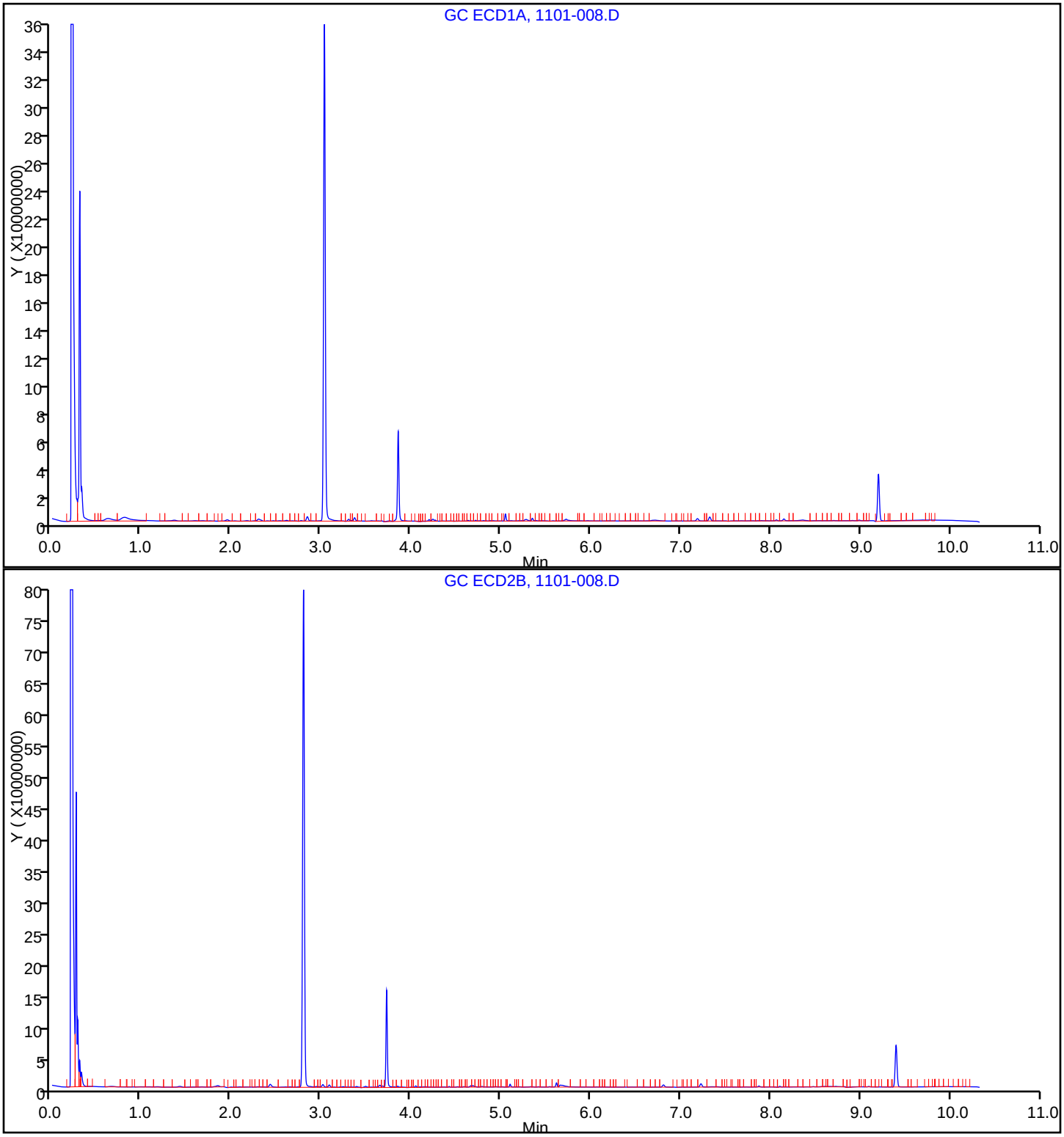
Lims ID: MB 320-134124/1-A

Client ID:

Operator ID: SMH ALS Bottle#: 8 Worklist Smp#: 10

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D
Lims ID: MB 320-134124/1-A
Client ID:
Sample Type: MB
Inject. Date: 01-Nov-2016 12:06:19 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 MB
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:06 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:06

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	34.3	85.71
$ 23 DCB Decachlorobiphenyl	40.0	27.1	67.75

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	34.8	86.94
$ 23 DCB Decachlorobiphenyl	40.0	26.6	66.57

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

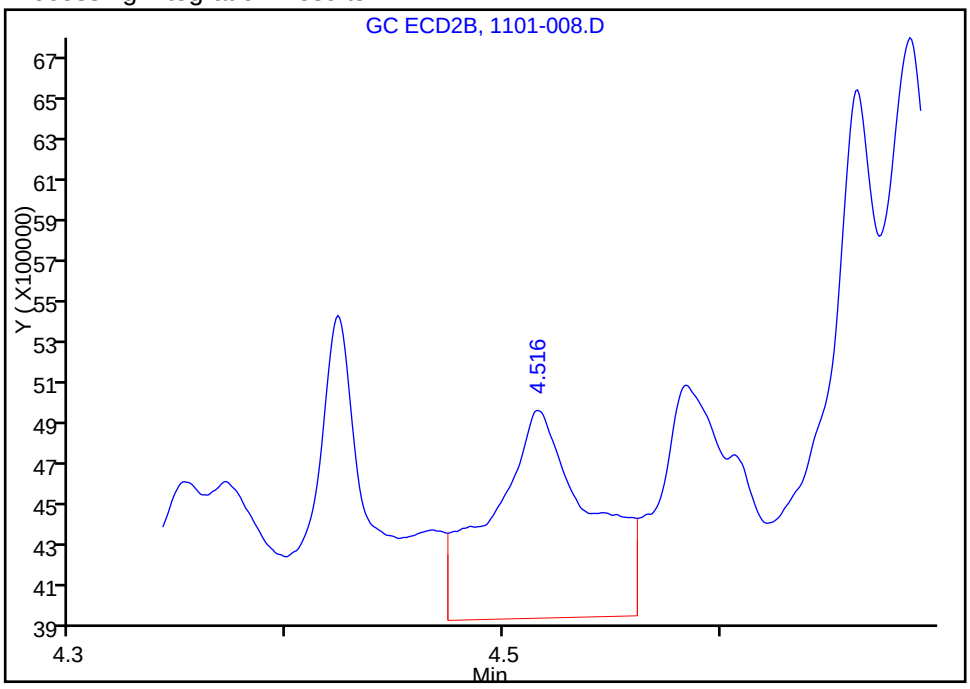
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D				
Injection Date:	01-Nov-2016 12:06:19	Instrument ID:	GC75		
Lims ID:	MB 320-134124/1-A				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	8	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

2 gamma-BHC (Lindane), CAS: 58-89-9

Signal: 2

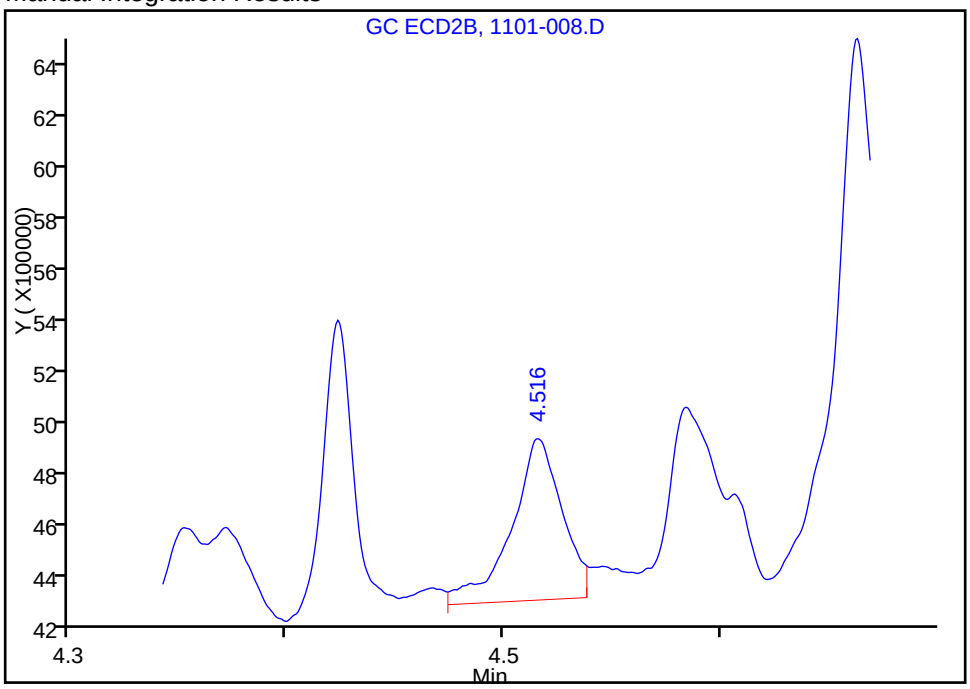
Processing Integration Results

RT: 4.52
Area: 3160947
Amount: 0.479164
Amount Units: ug/l



Manual Integration Results

RT: 4.52
Area: 1016260
Amount: 0.154053
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 16:53:06
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

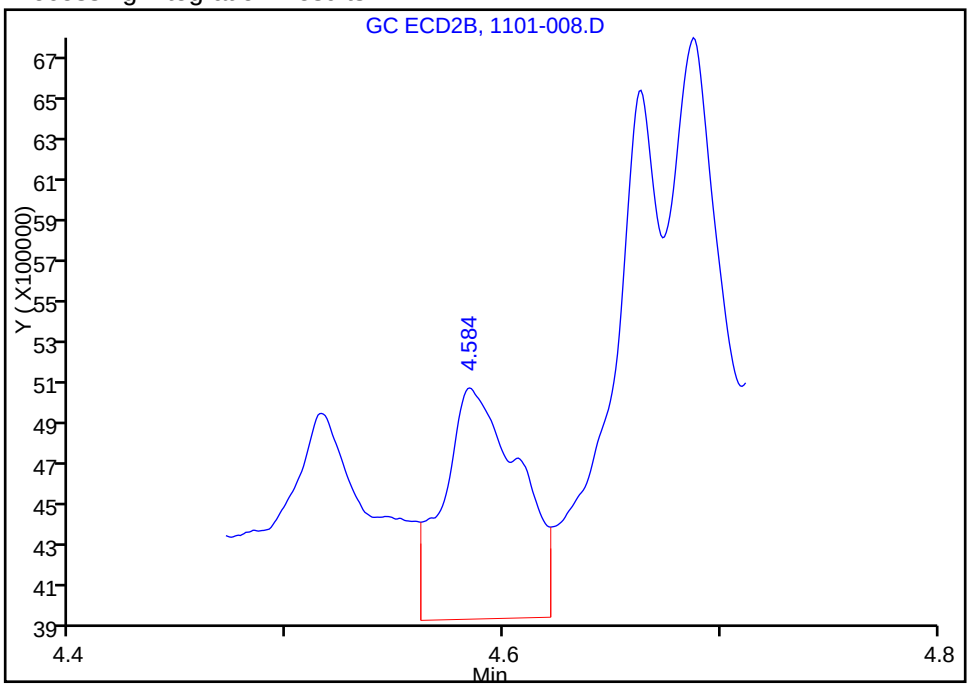
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D
Injection Date: 01-Nov-2016 12:06:19 Instrument ID: GC75
Lims ID: MB 320-134124/1-A
Client ID:
Operator ID: SMH ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

6 beta-BHC, CAS: 319-85-7

Signal: 2

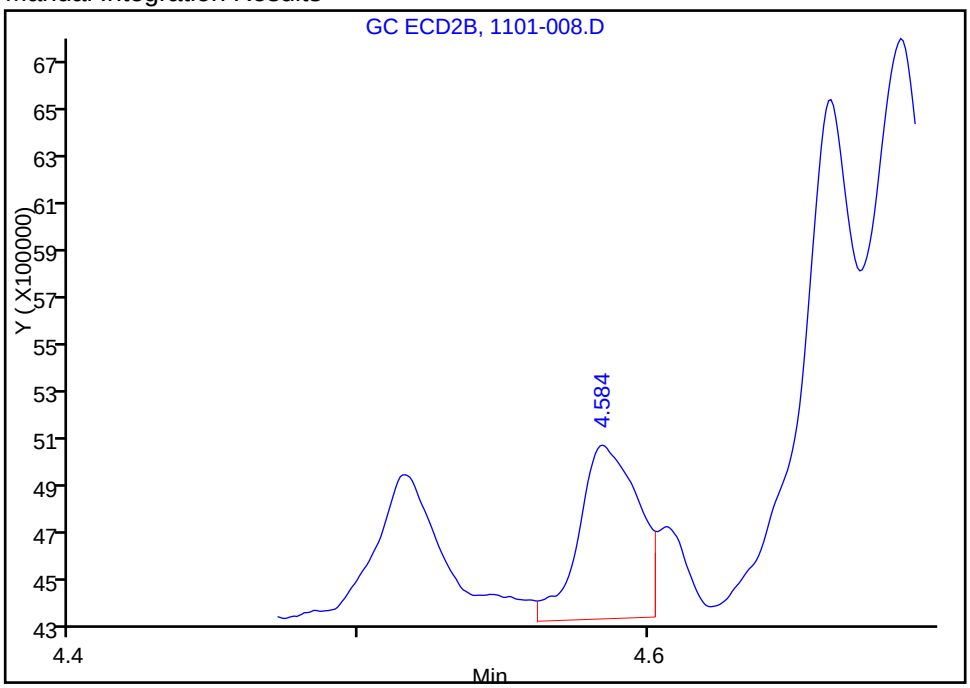
Processing Integration Results

RT: 4.58
Area: 2705635
Amount: 1.003080
Amount Units: ug/l



Manual Integration Results

RT: 4.58
Area: 1024291
Amount: 0.379743
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 16:53:06
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

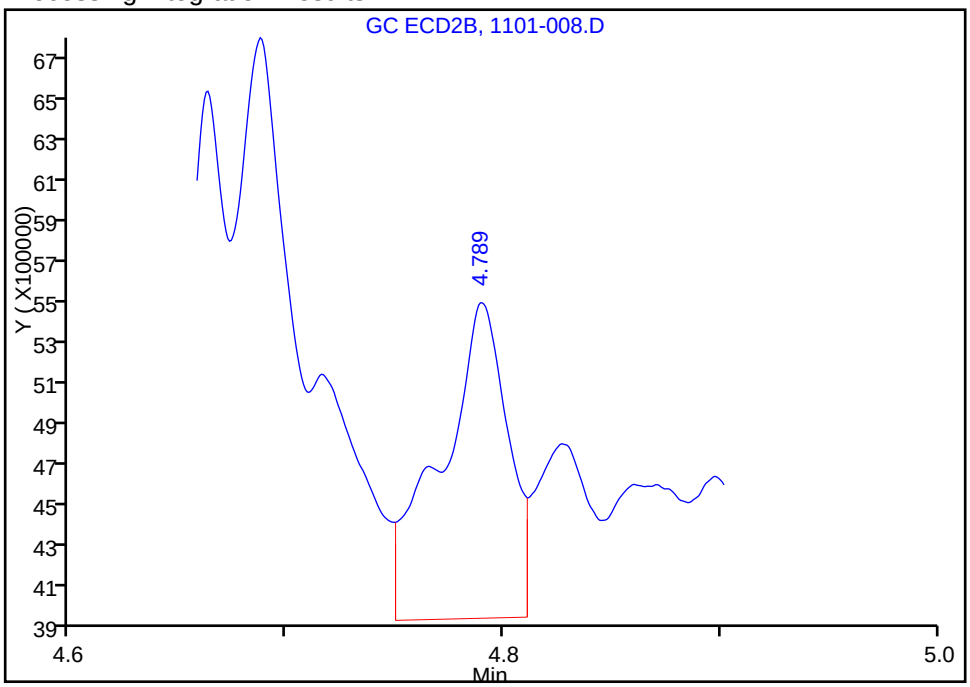
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D				
Injection Date:	01-Nov-2016 12:06:19	Instrument ID:	GC75		
Lims ID:	MB 320-134124/1-A				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	8	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD2B		

18 delta-BHC, CAS: 319-86-8

Signal: 2

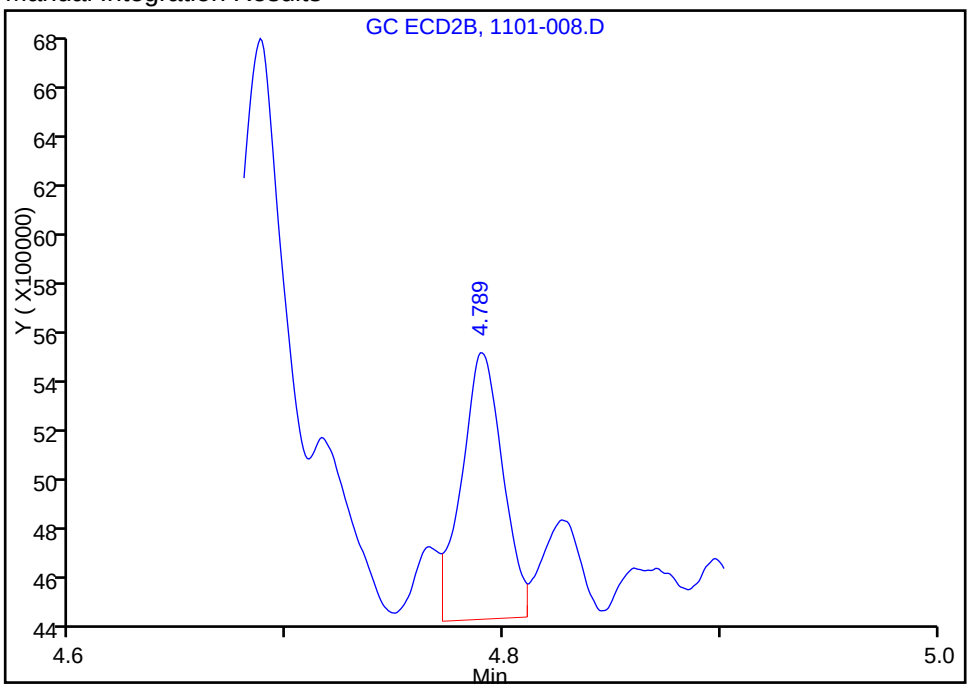
Processing Integration Results

RT: 4.79
Area: 3212355
Amount: 0.495557
Amount Units: ug/l



Manual Integration Results

RT: 4.79
Area: 1399947
Amount: 0.215964
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 16:53:06
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

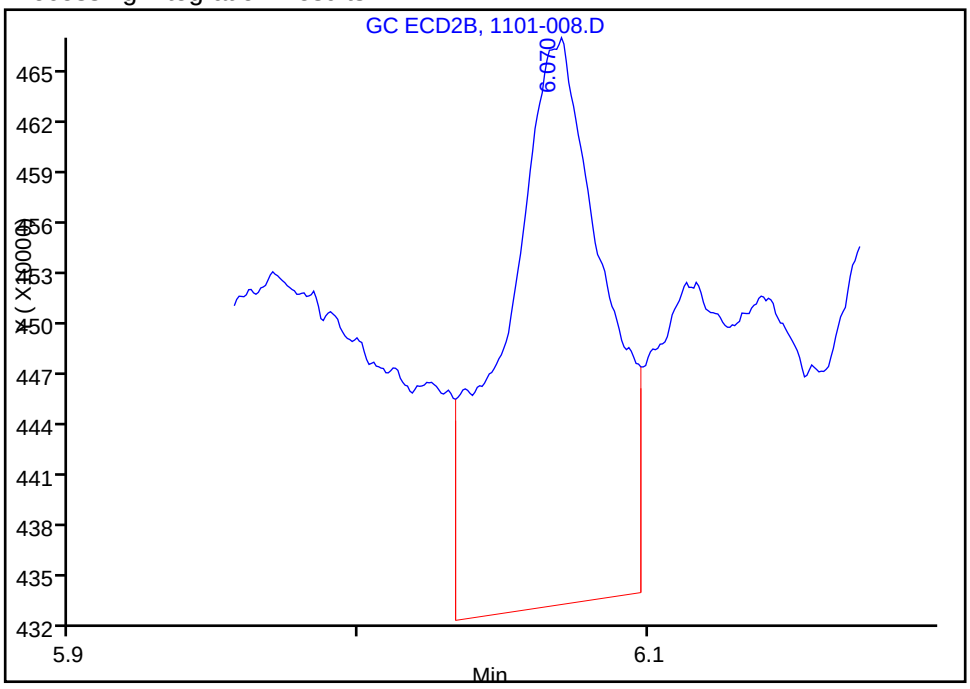
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-008.D
Injection Date: 01-Nov-2016 12:06:19 Instrument ID: GC75
Lims ID: MB 320-134124/1-A
Client ID:
Operator ID: SMH ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD2B

29 Dieldrin, CAS: 60-57-1

Signal: 2

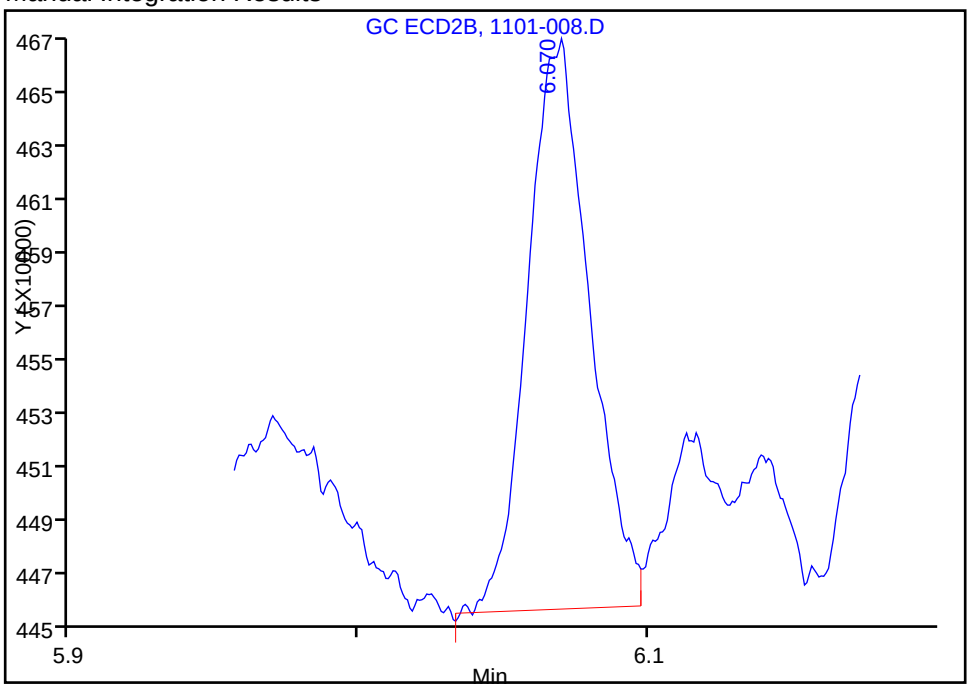
Processing Integration Results

RT: 6.07
Area: 792097
Amount: 0.143365
Amount Units: ug/l



Manual Integration Results

RT: 6.07
Area: 309234
Amount: 0.055970
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 16:53:06
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-134124/2-A

Matrix: Water | Lab File ID: 1101-009.D

Analysis Method: 8081B | Date Collected:

Extraction Method: 3510C | Date Extracted: 10/24/2016 10:43

Sample wt/vol: 1000(mL) | Date Analyzed: 11/01/2016 12:21

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: STX-CLP I ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 135416 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
319-84-6	alpha-BHC	0.557		0.050	0.025	0.0070
58-89-9	gamma-BHC (Lindane)	0.540		0.050	0.012	0.0060
319-85-7	beta-BHC	0.493		0.050	0.025	0.0070
319-86-8	delta-BHC	0.590		0.050	0.025	0.011
76-44-8	Heptachlor	0.530		0.050	0.025	0.0070
309-00-2	Aldrin	0.484		0.050	0.012	0.0060
1024-57-3	Heptachlor epoxide	0.528		0.050	0.012	0.0060
5103-74-2	gamma-Chlordane	0.535		0.050	0.025	0.012
5103-71-9	alpha-Chlordane	0.530		0.050	0.012	0.0060
959-98-8	Endosulfan I	0.426		0.050	0.012	0.0060
72-55-9	4,4'-DDE	0.540		0.050	0.025	0.012
60-57-1	Dieldrin	0.559		0.050	0.025	0.012
72-20-8	Endrin	0.591		0.050	0.025	0.012
72-54-8	4,4'-DDD	0.544		0.050	0.025	0.012
33213-65-9	Endosulfan II	0.516		0.050	0.025	0.012
50-29-3	4,4'-DDT	0.656		0.050	0.025	0.012
7421-93-4	Endrin aldehyde	0.450		0.10	0.080	0.025
1031-07-8	Endosulfan sulfate	0.523	M	0.050	0.025	0.012
72-43-5	Methoxychlor	0.580		0.10	0.080	0.042
53494-70-5	Endrin ketone	0.542		0.10	0.080	0.020

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	90		44-124
2051-24-3	DCB Decachlorobiphenyl	75		12-131

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-009.D
Lims ID: LCS 320-134124/2-A
Client ID:
Sample Type: LCS
Inject. Date: 01-Nov-2016 12:21:58 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 LCS/2
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:26 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:25

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.031	3.036	-0.005	479544762	200.0	200.0	
2	2.804	2.800	0.004	1051249582	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.852	3.856	-0.004	78436326	40.0	35.9	
2	3.727	3.726	0.001	164388727	40.0	35.6	
						RPD = 0.86	
11 alpha-BHC							
1	4.337	4.341	-0.004	179195936	50.0	55.7	
2	4.253	4.252	0.001	366742209	50.0	52.7	
						RPD = 5.57	
2 gamma-BHC (Lindane)							
1	4.587	4.590	-0.003	164095487	50.0	54.0	
2	4.525	4.524	0.001	349122764	50.0	53.5	
						RPD = 0.90	
6 beta-BHC							
1	4.654	4.657	-0.003	64045257	50.0	49.3	
2	4.593	4.592	0.001	133758573	50.0	50.1	
						RPD = 1.60	
18 delta-BHC							
1	4.786	4.789	-0.003	167769022	50.0	59.0	
2	4.799	4.799	0.000	368768899	50.0	57.5	
						RPD = 2.50	
19 Heptachlor							
1	4.942	4.945	-0.003	150095702	50.0	53.0	
2	4.835	4.834	0.001	291715742	50.0	49.2	
						RPD = 7.43	
8 Aldrin							
1	5.157	5.160	-0.003	136799485	50.0	48.4	
2	5.054	5.053	0.001	280191769	50.0	47.7	
						RPD = 1.44	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
26 Heptachlor epoxide							
1	5.635	5.639	-0.004	136893447	50.0	52.8	
2	5.475	5.474	0.001	279878885	50.0	52.2	
						RPD = 1.17	
25 gamma-Chlordane							
1	5.746	5.750	-0.004	142395256	50.0	53.5	
2	5.631	5.630	0.001	295501184	50.0	54.4	
						RPD = 1.67	
15 alpha-Chlordane							
1	5.868	5.873	-0.005	138016162	50.0	53.0	
2	5.757	5.757	0.000	263284696	50.0	53.0	
						RPD = 0.06	
16 4,4'-DDE							
1	5.934	5.939	-0.005	129815820	50.0	54.0	
2	5.914	5.913	0.001	283122267	50.0	55.8	
						RPD = 3.28	
7 Endosulfan I							
1	6.001	6.006	-0.005	105418966	50.0	42.6	
2	5.811	5.810	0.001	211515899	50.0	43.0	
						RPD = 0.78	
29 Dieldrin							
1	6.251	6.256	-0.005	146654633	50.0	55.9	
2	6.078	6.077	0.001	310563843	50.0	56.8	
						RPD = 1.63	
13 Endrin							
1	6.518	6.524	-0.006	128250664	50.0	59.1	
2	6.416	6.414	0.002	256164354	50.0	56.6	
						RPD = 4.27	
12 4,4'-DDD							
1	6.592	6.599	-0.007	114350686	50.0	54.4	
2	6.559	6.559	0.000	242353094	50.0	55.0	
						RPD = 1.09	
10 Endosulfan II							
1	6.801	6.807	-0.006	105004823	50.0	51.6	
2	6.683	6.682	0.001	217583808	50.0	51.0	
						RPD = 1.11	
14 4,4'-DDT							
1	6.972	6.978	-0.006	112191227	50.0	65.6	
2	6.993	6.992	0.001	219344237	50.0	56.6	
						RPD = 14.64	
27 Endrin aldehyde							
1	7.367	7.372	-0.005	82934128	50.0	45.0	
2	7.165	7.164	0.001	173746285	50.0	45.3	
						RPD = 0.72	
9 Methoxychlor							
1	7.619	7.624	-0.005	55360429	50.0	58.0	
2	7.891	7.891	0.000	105859977	50.0	50.6	
						RPD = 13.68	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
30 Endosulfan sulfate							M
1	7.874	7.879	-0.005	109313965	50.0	52.3	M
2	7.526	7.526	0.000	230148448	50.0	52.9	
						RPD = 1.07	
1 Endrin ketone							
1	8.165	8.169	-0.004	122452447	50.0	54.2	
2	8.111	8.112	-0.001	242209180	50.0	51.7	
						RPD = 4.70	
$ 23 DCB Decachlorobiphenyl							
1	9.200	9.206	-0.006	53706077	40.0	29.8	
2	9.399	9.400	-0.001	111605961	40.0	30.7	
						RPD = 2.75	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

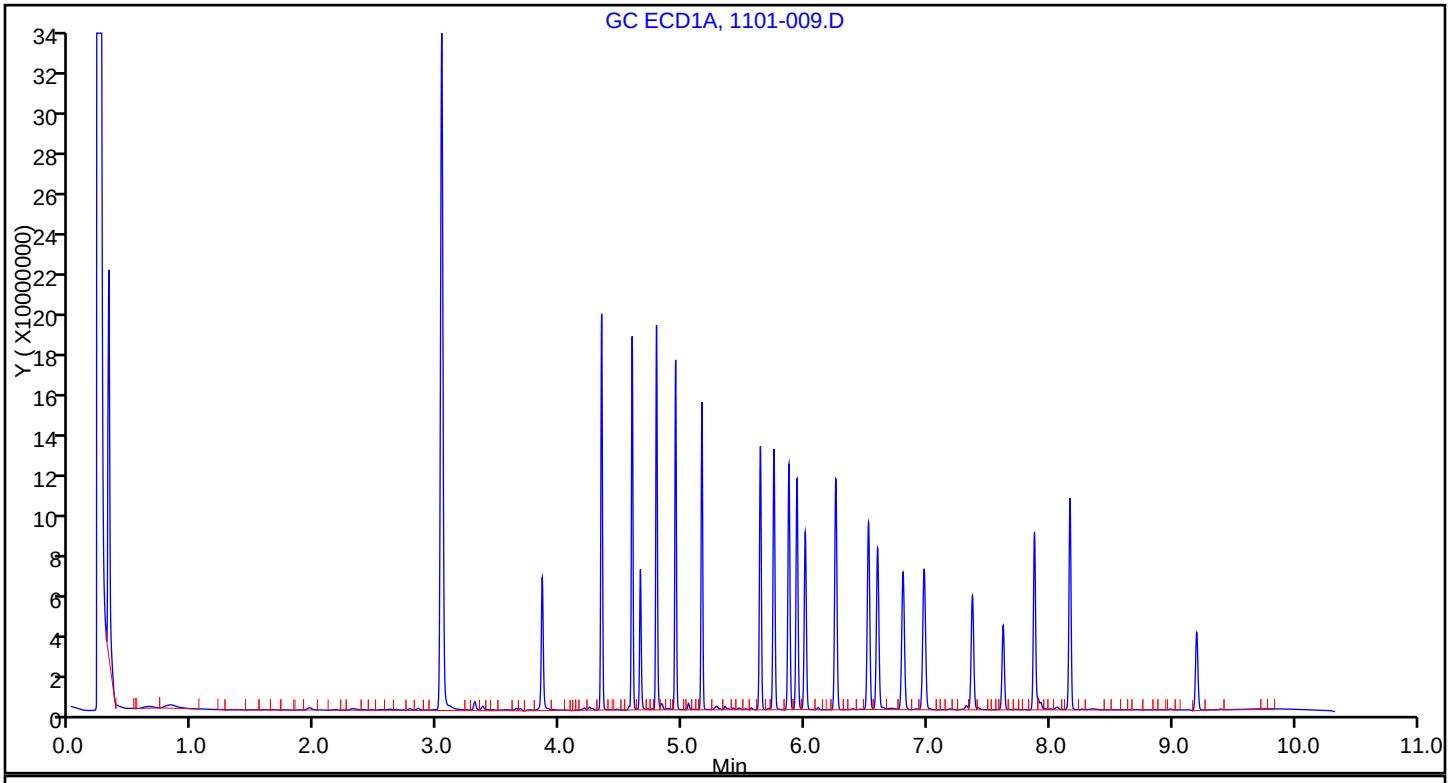
GCPESTISIM_00005 Amount Added: 10.00 Units: uL Run Reagent

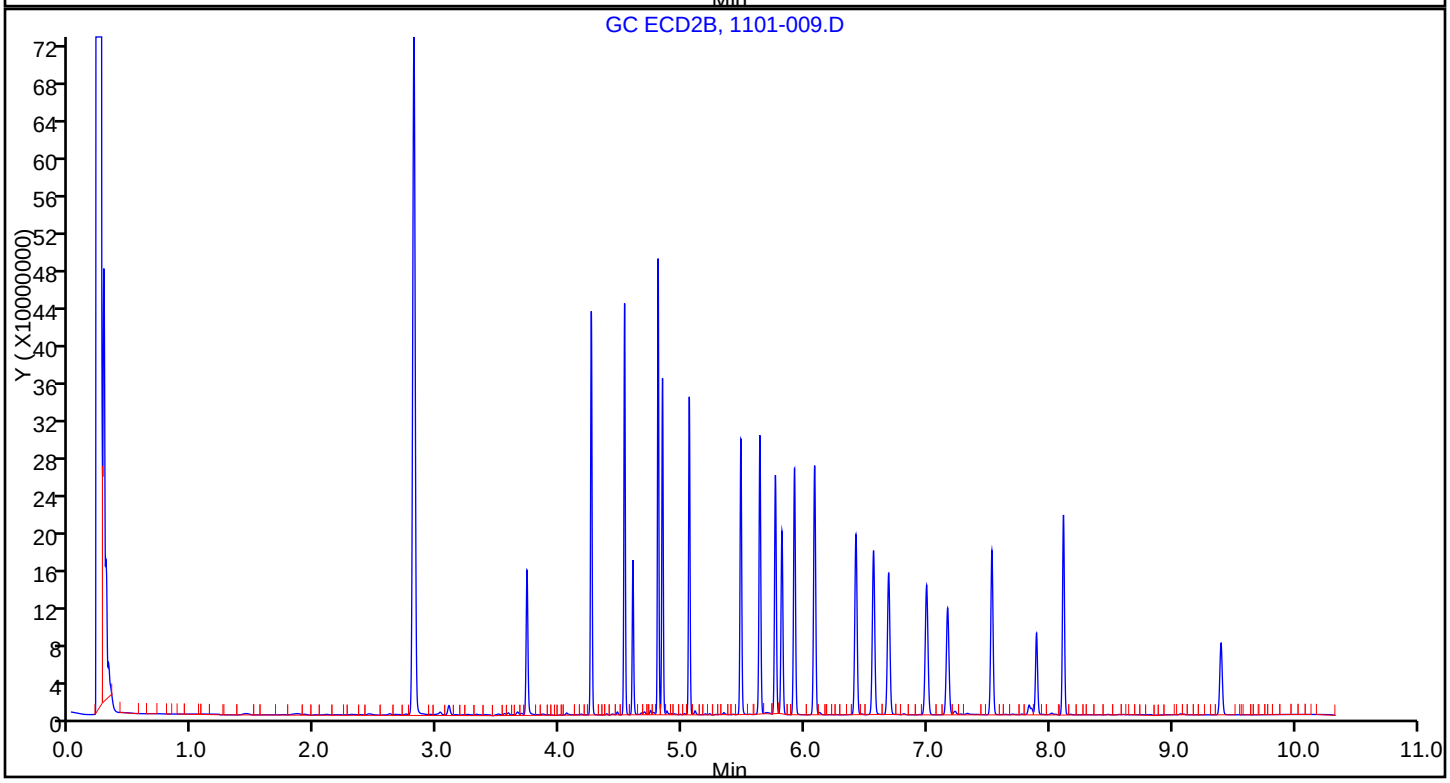
Report Date: 01-Nov-2016 16:53:26 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-009.D

Injection Date:	01-Nov-2016 12:21:58	Instrument ID:	GC75		
Lims ID:	LCS 320-134124/2-A				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	9	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		





TestAmerica Sacramento
Recovery Report

Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-009.D				
Lims ID:	LCS 320-134124/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	01-Nov-2016 12:21:58	ALS Bottle#:	9	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	134124 LCS/2				
Operator ID:	SMH	Instrument ID:	GC75		
Method:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m				
Limit Group:	GC 8081B_DOD ICAL				
Last Update:	01-Nov-2016 16:53:26	Calib Date:	29-Oct-2016 15:50:50		
Integrator:	Falcon				
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D				
Column 1 :			Det: GC ECD1A		
Column 2 :			Det: GC ECD2B		
Process Host:	XAWRK022				
First Level Reviewer: haques		Date:	01-Nov-2016 16:53:25		

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	35.9	89.74
$ 23 DCB Decachlorobiphenyl	40.0	29.8	74.62

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	35.6	88.97
$ 23 DCB Decachlorobiphenyl	40.0	30.7	76.70

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

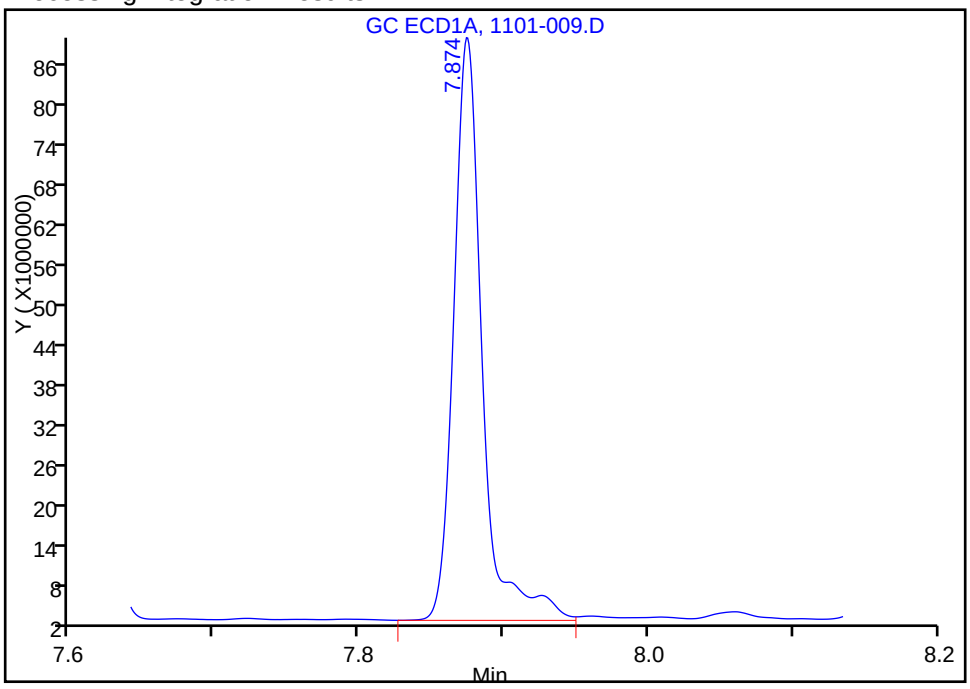
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-009.D				
Injection Date:	01-Nov-2016 12:21:58	Instrument ID:	GC75		
Lims ID:	LCS 320-134124/2-A				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	9	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

30 Endosulfan sulfate, CAS: 1031-07-8

Signal: 1

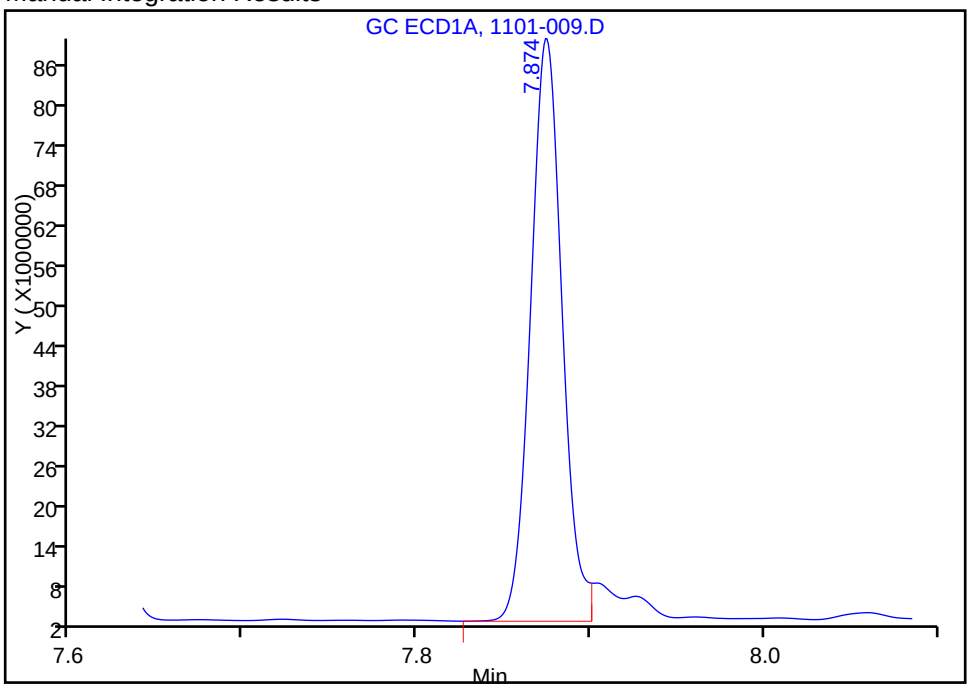
Processing Integration Results

RT: 7.87
Area: 118615278
Amount: 56.780117
Amount Units: ug/l



Manual Integration Results

RT: 7.87
Area: 109313965
Amount: 52.327659
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 16:53:25

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-134124/5-A

Matrix: Water | Lab File ID: 1101-011.D

Analysis Method: 8081B | Date Collected:

Extraction Method: 3510C | Date Extracted: 10/24/2016 11:28

Sample wt/vol: 1000(mL) | Date Analyzed: 11/01/2016 12:53

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: STX-CLP I ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 135416 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
8001-35-2	Toxaphene	5.57		2.0	1.0	0.51

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	85	M	44-124
2051-24-3	DCB Decachlorobiphenyl	29	M	12-131

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-011.D
Lims ID: LCS 320-134124/5-A
Client ID:
Sample Type: LCS
Inject. Date: 01-Nov-2016 12:53:21 ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 LCSD/5
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:26 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.029	3.036	-0.007	480687897	200.0	200.0	
2	2.803	2.800	0.003	1060483464	200.0	200.0	
$ 3 Tetrachloro-m-xylene							M
1	3.852	3.856	-0.004	74532727	40.0	34.0	M
2	3.728	3.726	0.002	159978210	40.0	34.3	M
						RPD = 0.89	
32 Toxaphene							M
1	6.785	6.798	-0.013	61868586	500.0	565.4	M
1	7.259	7.271	-0.012	36724963	500.0	571.7	M
1	7.533	7.538	-0.005	35048477	500.0	508.0	M
1	7.658	7.669	-0.011	46881090	500.0	563.3	M
1	7.768	7.779	-0.011	41794971	500.0	577.0	M
		Average of Peak Amounts =				557.1	
2	6.661	6.664	-0.003	76681979	500.0	509.6	M
2	6.794	6.797	-0.003	123974521	500.0	541.0	M
2	7.173	7.176	-0.003	85483784	500.0	521.6	M
2	7.798	7.800	-0.002	72342562	500.0	543.9	M
2	7.861	7.863	-0.002	40064687	500.0	524.0	M
		Average of Peak Amounts =				528.0	
						RPD = 5.36	
$ 23 DCB Decachlorobiphenyl							M
1	9.199	9.206	-0.007	20861520	40.0	11.6	M
2	9.398	9.400	-0.002	46320316	40.0	12.6	M
						RPD = 8.73	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

GCPESTISIM_00005 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 01-Nov-2016 16:53:49 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-011.D

Injection Date: 01-Nov-2016 12:53:21 Instrument ID: GC75

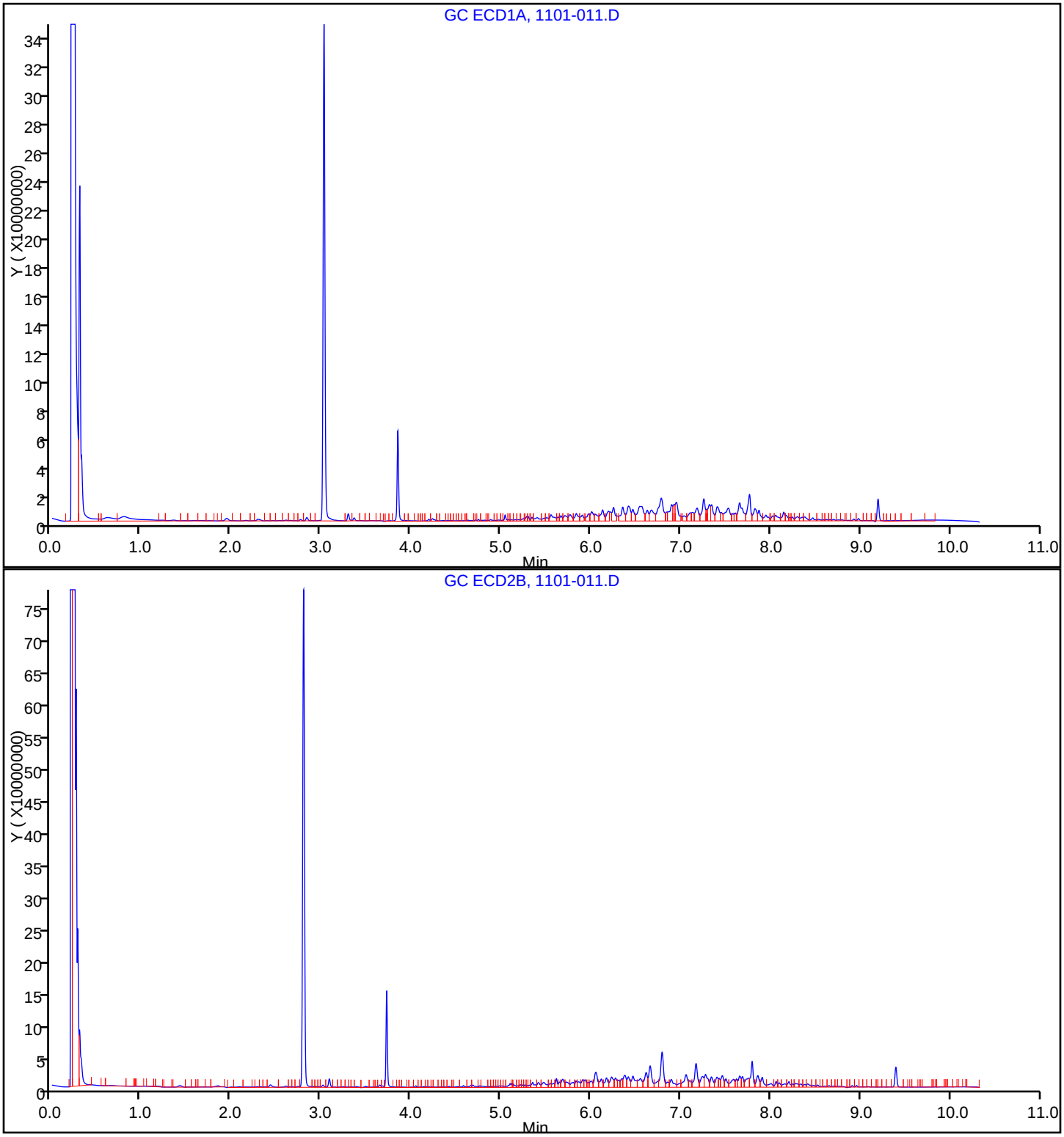
Lims ID: LCS 320-134124/5-A

Client ID:

Operator ID: SMH ALS Bottle#: 11 Worklist Smp#: 13

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-011.D
Lims ID: LCS 320-134124/5-A
Client ID:
Sample Type: LCS
Inject. Date: 01-Nov-2016 12:53:21 ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 LCSD/5
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:26 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:48

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	34.0	85.07
$ 23 DCB Decachlorobiphenyl	40.0	11.6	28.91

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	34.3	85.83
$ 23 DCB Decachlorobiphenyl	40.0	12.6	31.55

Report Date: 01-Nov-2016 16:53:49 Chrom Revision: 2.2 17-Oct-2016 09:27:18

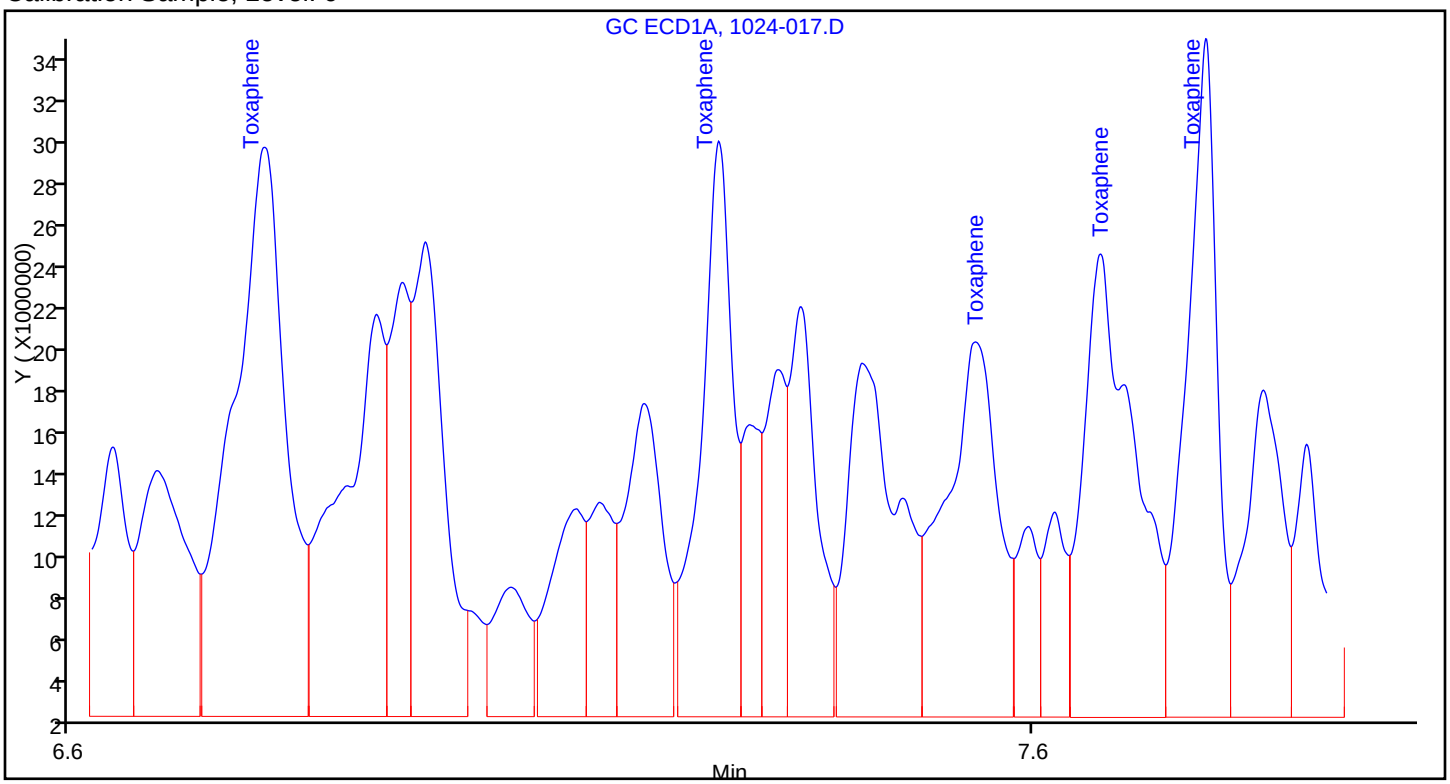
TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-011.D

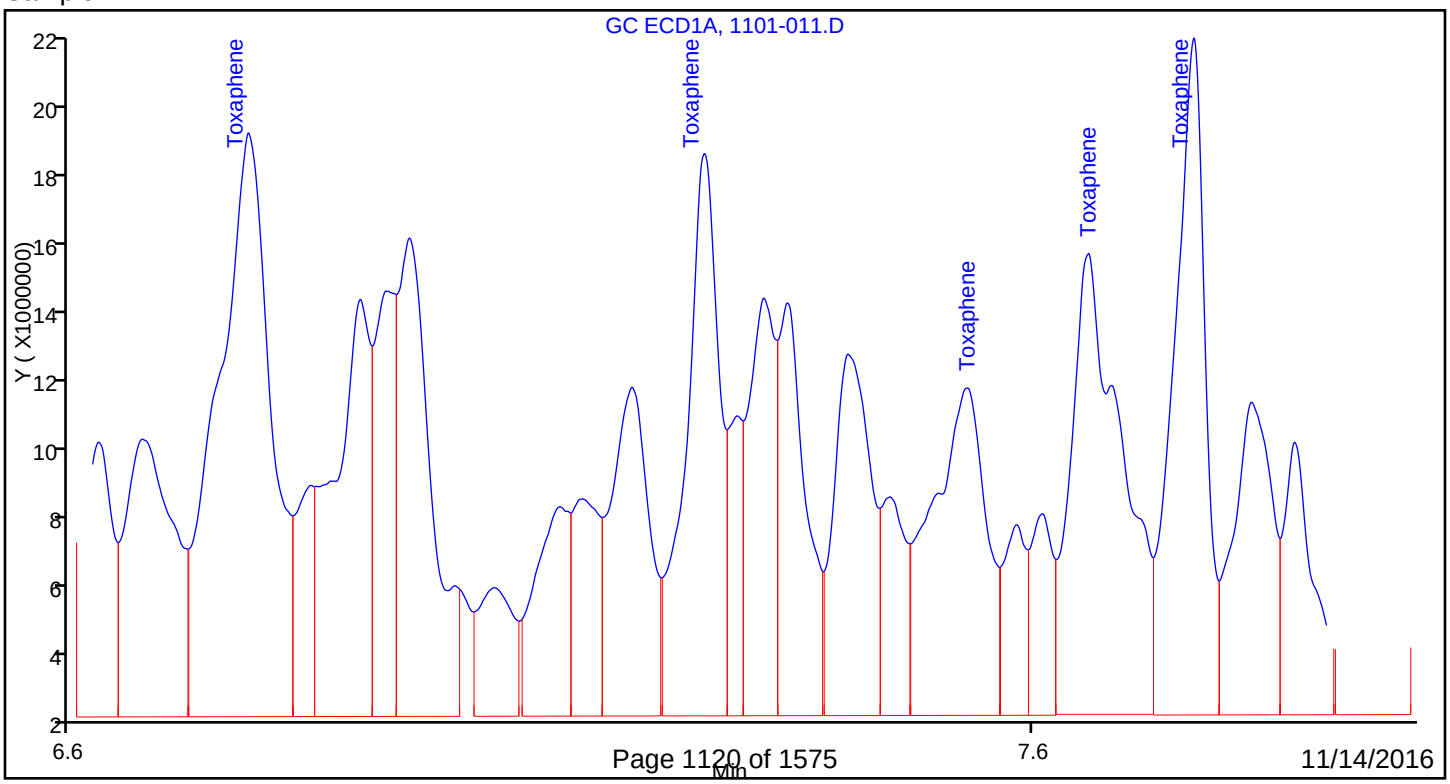
Injection Date:	01-Nov-2016 12:53:21	Instrument ID:	GC75		
Lims ID:	LCS 320-134124/5-A				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	11	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

32 Toxaphene, CAS: 8001-35-2

Calibration Sample, Level: 6



Sample



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

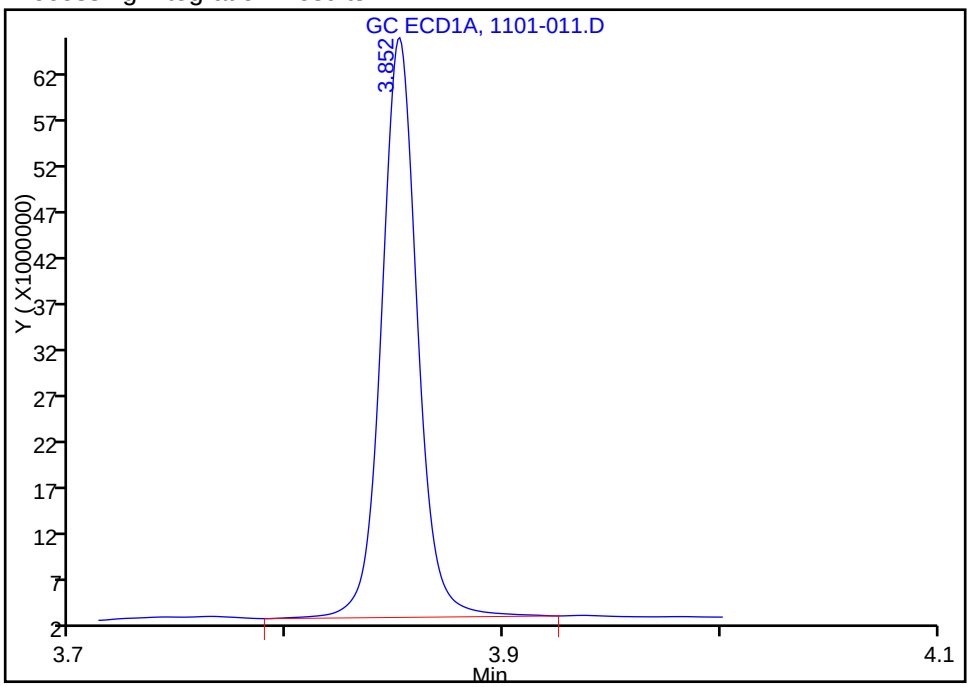
Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-011.D
Injection Date: 01-Nov-2016 12:53:21 Instrument ID: GC75
Lims ID: LCS 320-134124/5-A
Client ID:
Operator ID: SMH ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL
Column: Detector GC ECD1A

$ 3 Tetrachloro-m-xylene, CAS: 877-09-8

Signal: 1

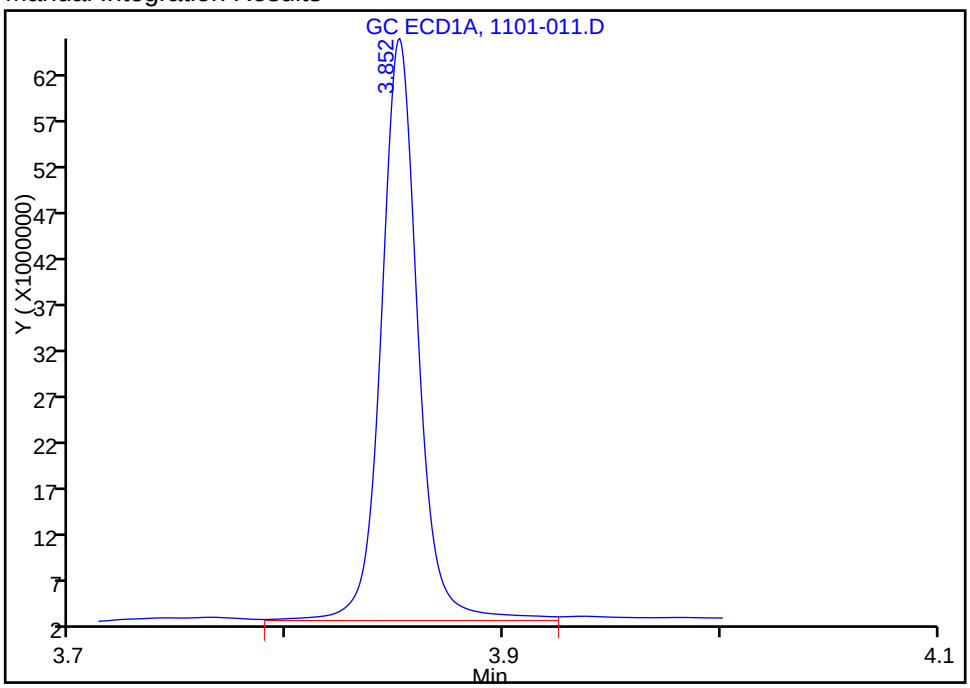
Processing Integration Results

RT: 3.85
Area: 72507754
Amount: 33.102986
Amount Units: ug/l



Manual Integration Results

RT: 3.85
Area: 74532727
Amount: 34.027475
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 13:29:22
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

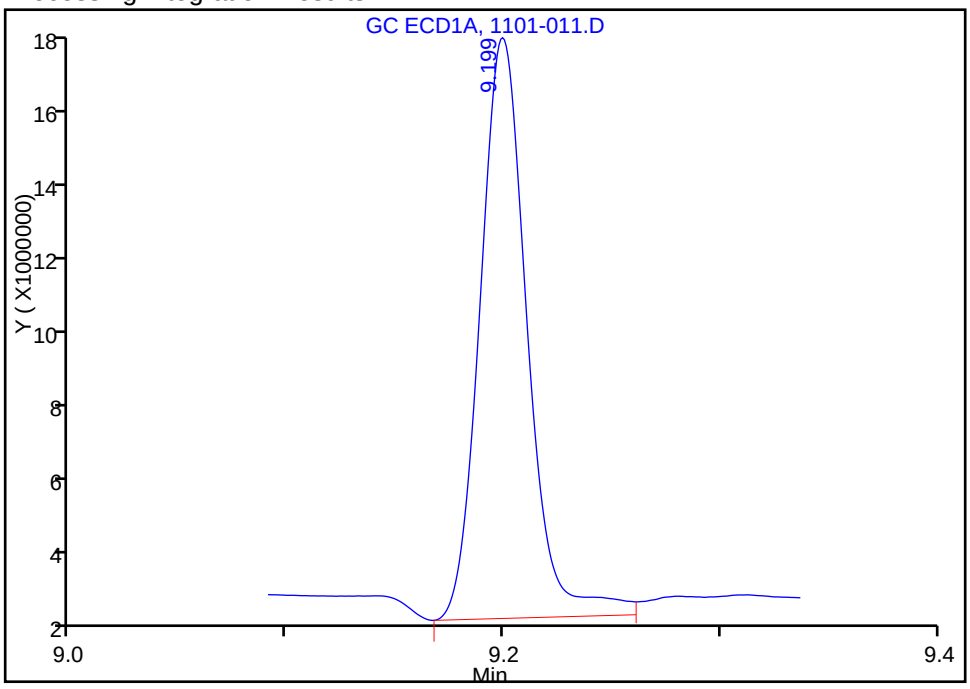
Data File:	\\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-011.D				
Injection Date:	01-Nov-2016 12:53:21	Instrument ID:	GC75		
Lims ID:	LCS 320-134124/5-A				
Client ID:					
Operator ID:	SMH	ALS Bottle#:	11	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	GC 8081 ICAL - IS_GC75	Limit Group:	GC 8081B_DOD ICAL		
Column:		Detector	GC ECD1A		

$ 23 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

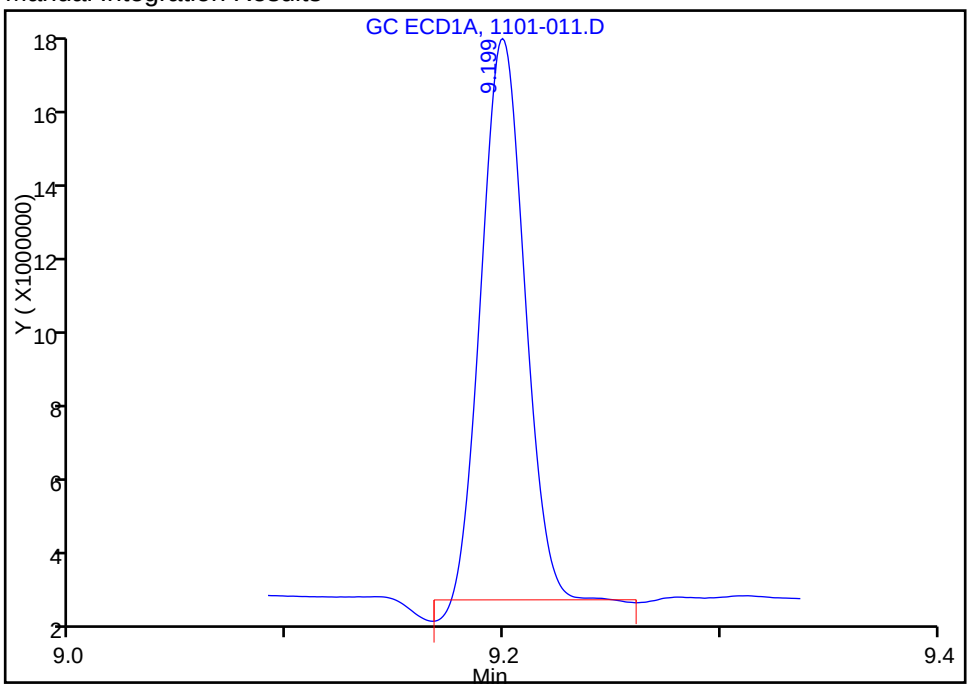
Processing Integration Results

RT: 9.20
Area: 23657175
Amount: 13.115943
Amount Units: ug/l



Manual Integration Results

RT: 9.20
Area: 20861520
Amount: 11.565984
Amount Units: ug/l



Reviewer: haques, 01-Nov-2016 13:29:22

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 01-Nov-2016 16:53:49 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-011.D

Injection Date: 01-Nov-2016 12:53:21 Instrument ID: GC75

Lims ID: LCS 320-134124/5-A

Client ID:

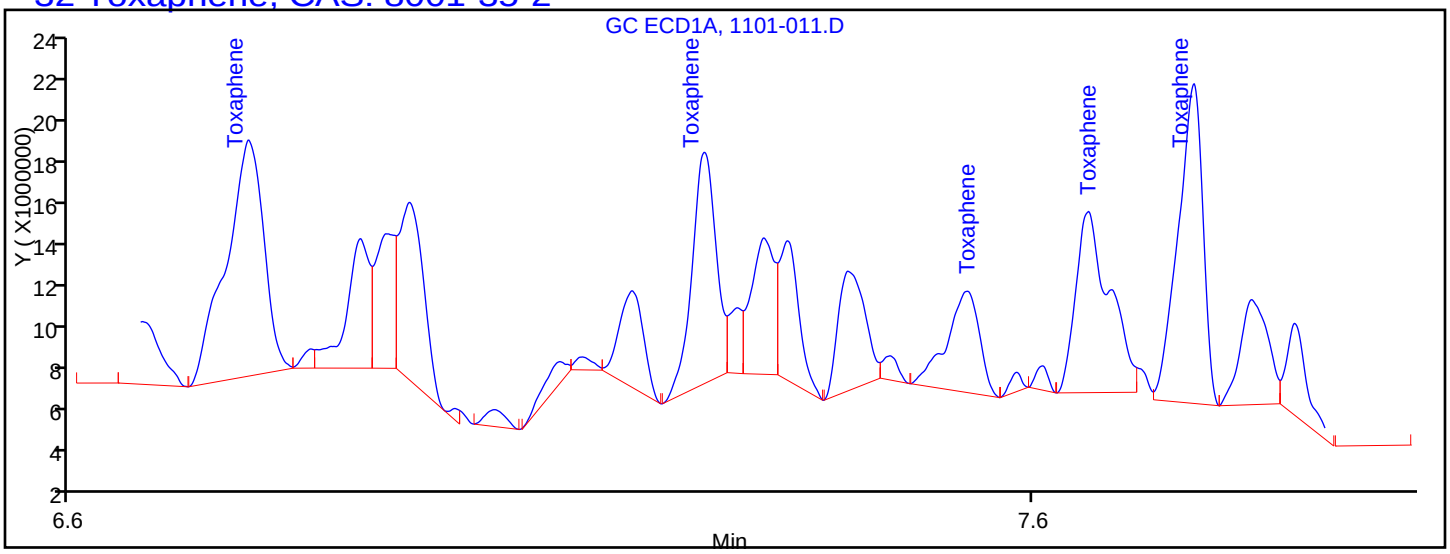
Operator ID: SMH ALS Bottle#: 11 Worklist Smp#: 13

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL

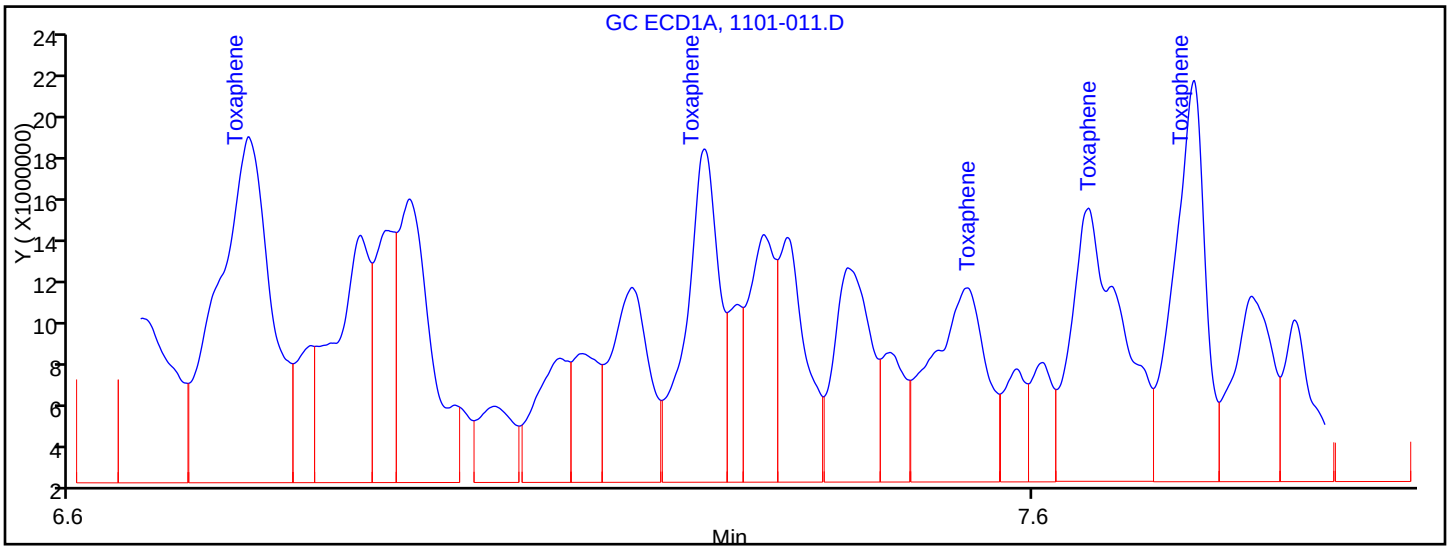
Column: Detector GC ECD1A

32 Toxaphene, CAS: 8001-35-2



Processing Integration Results

6.785	Response = 29485121
7.259	Response = 18633348
7.533	Response = 10945704
7.658	Response = 20370630
7.768	Response = 26308150



Manual Integration Results

6.785	Response = 61868586	M
7.259	Response = 36724963	M
7.533	Response = 35048477	M
7.658	Response = 46881090	M
7.768	Response = 41794971	M

Reviewer: haques, 01-Nov-2016 13:29:22

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-134124/3-A

Matrix: Water | Lab File ID: 1101-010.D

Analysis Method: 8081B | Date Collected:

Extraction Method: 3510C | Date Extracted: 10/24/2016 10:43

Sample wt/vol: 1000(mL) | Date Analyzed: 11/01/2016 12:37

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: STX-CLP I ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 135416 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
319-84-6	alpha-BHC	0.555		0.050	0.025	0.0070
58-89-9	gamma-BHC (Lindane)	0.531		0.050	0.012	0.0060
319-85-7	beta-BHC	0.481		0.050	0.025	0.0070
319-86-8	delta-BHC	0.578		0.050	0.025	0.011
76-44-8	Heptachlor	0.519		0.050	0.025	0.0070
309-00-2	Aldrin	0.485		0.050	0.012	0.0060
1024-57-3	Heptachlor epoxide	0.522		0.050	0.012	0.0060
5103-74-2	gamma-Chlordane	0.530		0.050	0.025	0.012
5103-71-9	alpha-Chlordane	0.526		0.050	0.012	0.0060
959-98-8	Endosulfan I	0.425		0.050	0.012	0.0060
72-55-9	4,4'-DDE	0.532		0.050	0.025	0.012
60-57-1	Dieldrin	0.559		0.050	0.025	0.012
72-20-8	Endrin	0.596		0.050	0.025	0.012
72-54-8	4,4'-DDD	0.542		0.050	0.025	0.012
33213-65-9	Endosulfan II	0.518		0.050	0.025	0.012
50-29-3	4,4'-DDT	0.657		0.050	0.025	0.012
7421-93-4	Endrin aldehyde	0.468		0.10	0.080	0.025
1031-07-8	Endosulfan sulfate	0.562		0.050	0.025	0.012
72-43-5	Methoxychlor	0.590		0.10	0.080	0.042
53494-70-5	Endrin ketone	0.547		0.10	0.080	0.020

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	87		44-124
2051-24-3	DCB Decachlorobiphenyl	70		12-131

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-010.D
Lims ID: LCSD 320-134124/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 01-Nov-2016 12:37:39 ALS Bottle#: 10 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 LCS/3
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:26 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:39

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 34 1-Bromo-2-nitrobenzene							
1	3.028	3.036	-0.008	458804445	200.0	200.0	
2	2.801	2.800	0.001	1015975828	200.0	200.0	
$ 3 Tetrachloro-m-xylene							
1	3.851	3.856	-0.005	72620095	40.0	34.7	
2	3.727	3.726	0.001	154268778	40.0	34.6	
						RPD = 0.51	
11 alpha-BHC							
1	4.337	4.341	-0.004	170828409	50.0	55.5	
2	4.252	4.252	0.000	342250434	50.0	50.9	
						RPD = 8.70	
2 gamma-BHC (Lindane)							
1	4.586	4.590	-0.004	154509488	50.0	53.1	
2	4.524	4.524	0.000	320780897	50.0	50.9	
						RPD = 4.36	
6 beta-BHC							
1	4.654	4.657	-0.003	59753102	50.0	48.1	
2	4.592	4.592	0.000	124003064	50.0	48.1	
						RPD = 0.05	
18 delta-BHC							
1	4.785	4.789	-0.004	157344639	50.0	57.8	
2	4.799	4.799	0.000	342887620	50.0	55.3	
						RPD = 4.37	
19 Heptachlor							
1	4.941	4.945	-0.004	140707851	50.0	51.9	
2	4.834	4.834	0.000	278092673	50.0	48.5	
						RPD = 6.76	
8 Aldrin							
1	5.156	5.160	-0.004	131232514	50.0	48.5	
2	5.053	5.053	0.000	265529447	50.0	46.7	
						RPD = 3.67	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
26 Heptachlor epoxide							
1	5.634	5.639	-0.005	129458116	50.0	52.2	
2	5.474	5.474	0.000	263815098	50.0	50.9	
						RPD = 2.50	
25 gamma-Chlordane							
1	5.745	5.750	-0.005	135007826	50.0	53.0	
2	5.630	5.630	0.000	282302003	50.0	53.8	
						RPD = 1.42	
15 alpha-Chlordane							
1	5.867	5.873	-0.006	131095937	50.0	52.6	
2	5.757	5.757	0.000	249205322	50.0	51.9	
						RPD = 1.30	
16 4,4'-DDE							
1	5.933	5.939	-0.006	122477406	50.0	53.2	
2	5.913	5.913	0.000	267306666	50.0	54.5	
						RPD = 2.34	
7 Endosulfan I							
1	6.000	6.006	-0.006	100631498	50.0	42.5	
2	5.810	5.810	0.000	200490376	50.0	42.1	
						RPD = 0.93	
29 Dieldrin							
1	6.250	6.256	-0.006	140393942	50.0	55.9	
2	6.078	6.077	0.001	295869841	50.0	56.0	
						RPD = 0.14	
13 Endrin							
1	6.517	6.524	-0.007	123785840	50.0	59.6	
2	6.414	6.414	0.000	245087708	50.0	56.0	
						RPD = 6.15	
12 4,4'-DDD							
1	6.592	6.599	-0.007	109027951	50.0	54.2	
2	6.559	6.559	0.000	229694116	50.0	53.9	
						RPD = 0.52	
10 Endosulfan II							
1	6.799	6.807	-0.008	100886083	50.0	51.8	
2	6.683	6.682	0.001	206933777	50.0	50.2	
						RPD = 3.13	
14 4,4'-DDT							
1	6.971	6.978	-0.007	107569170	50.0	65.7	
2	6.993	6.992	0.001	204629494	50.0	54.7	
						RPD = 18.36	
27 Endrin aldehyde							
1	7.366	7.372	-0.006	82534006	50.0	46.8	
2	7.164	7.164	0.000	171720112	50.0	46.3	
						RPD = 0.97	
9 Methoxychlor							
1	7.617	7.624	-0.007	53866999	50.0	59.0	
2	7.891	7.891	0.000	102799763	50.0	50.9	
						RPD = 14.88	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
30 Endosulfan sulfate							
1	7.874	7.879	-0.005	112404085	50.0	56.2	
2	7.526	7.526	0.000	222090099	50.0	52.8	
						RPD = 6.29	
1 Endrin ketone							
1	8.164	8.169	-0.005	118360411	50.0	54.7	
2	8.111	8.112	-0.001	232762028	50.0	51.4	
						RPD = 6.29	
$ 23 DCB Decachlorobiphenyl							
1	9.199	9.206	-0.007	48148890	40.0	28.0	
2	9.398	9.400	-0.002	99302277	40.0	28.2	
						RPD = 0.98	

Reagents:

GCPESTISIM_00005 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 01-Nov-2016 16:53:39 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-010.D

Injection Date: 01-Nov-2016 12:37:39 Instrument ID: GC75

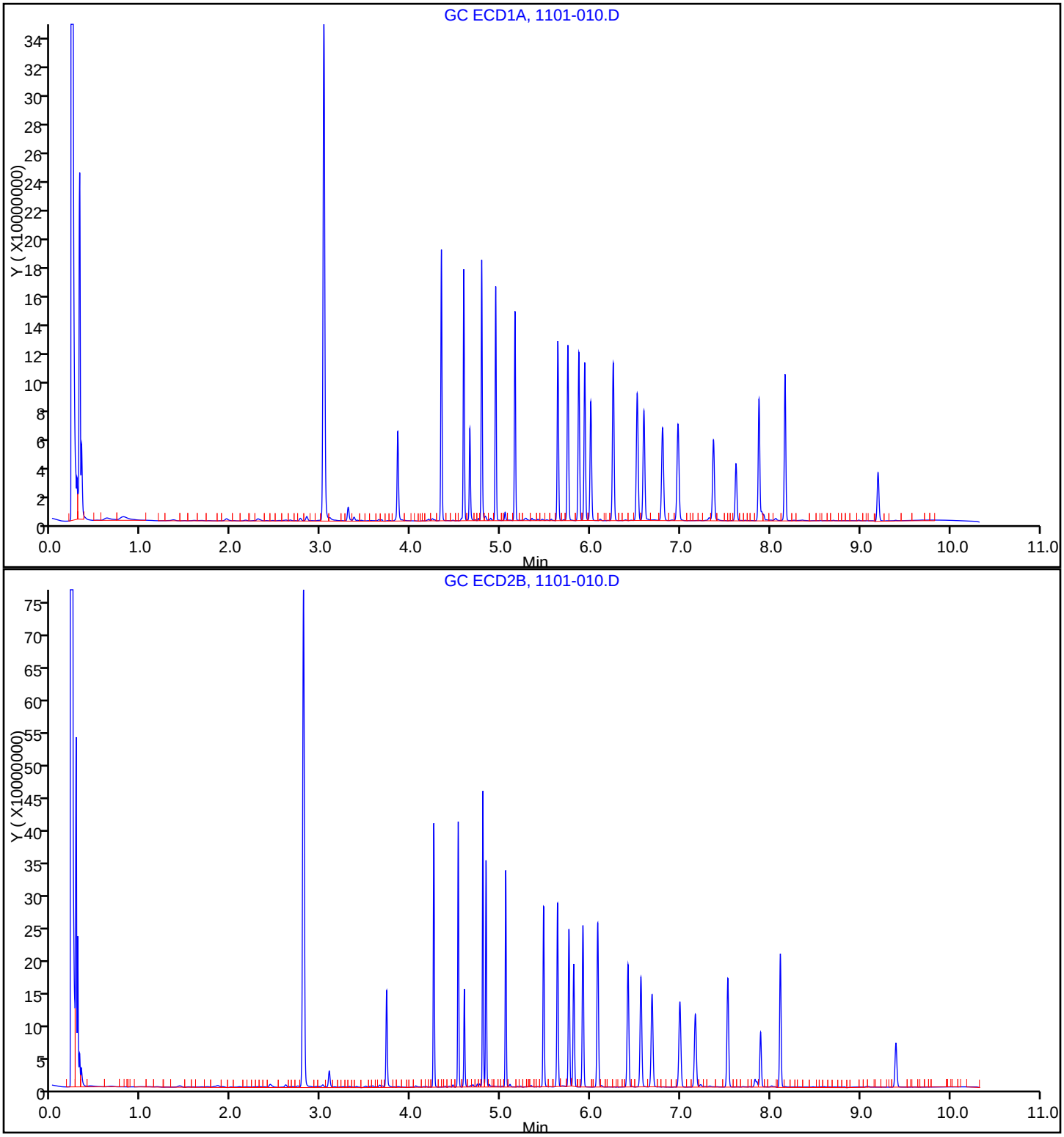
Lims ID: LCSD 320-134124/3-A

Client ID:

Operator ID: SMH ALS Bottle#: 10 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: GC 8081 ICAL - IS_GC75 Limit Group: GC 8081B_DOD ICAL



TestAmerica Sacramento
Recovery Report

Data File: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\1101-010.D
Lims ID: LCSD 320-134124/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 01-Nov-2016 12:37:39 ALS Bottle#: 10 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 134124 LCS/3
Operator ID: SMH Instrument ID: GC75

Method: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b\GC 8081 ICAL - IS_GC75.m
Limit Group: GC 8081B_DOD ICAL
Last Update: 01-Nov-2016 16:53:26 Calib Date: 29-Oct-2016 15:50:50
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\GC75\20161029-36262.b\1029-015.D

Column 1 : Det: GC ECD1A
Column 2 : Det: GC ECD2B
Process Host: XAWRK022

First Level Reviewer: haques Date: 01-Nov-2016 16:53:39

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	34.7	86.84
$ 23 DCB Decachlorobiphenyl	40.0	28.0	69.92

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
$ 3 Tetrachloro-m-xylene	40.0	34.6	86.39
$ 23 DCB Decachlorobiphenyl	40.0	28.2	70.61

PESTICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Start Date: 10/24/2016 13:40

Analysis Batch Number: 134186 End Date: 10/24/2016 20:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
PEM 320-134186/2		10/24/2016 13:40	1		STX-CLP I 0.32(mm)
PEM 320-134186/2		10/24/2016 13:40	1		STX-CLP II 0.32(mm)
STD001 320-134186/3 IC		10/24/2016 14:10	1		STX-CLP I 0.32(mm)
STD001 320-134186/3 IC		10/24/2016 14:10	1		STX-CLP II 0.32(mm)
STD002 320-134186/4 IC		10/24/2016 14:26	1		STX-CLP I 0.32(mm)
STD002 320-134186/4 IC		10/24/2016 14:26	1		STX-CLP II 0.32(mm)
STD003 320-134186/5 IC		10/24/2016 14:42	1		STX-CLP I 0.32(mm)
STD003 320-134186/5 IC		10/24/2016 14:42	1		STX-CLP II 0.32(mm)
STD004 320-134186/6 IC		10/24/2016 14:57	1		STX-CLP I 0.32(mm)
STD004 320-134186/6 IC		10/24/2016 14:57	1		STX-CLP II 0.32(mm)
STD005 320-134186/7 IC		10/24/2016 15:13	1		STX-CLP I 0.32(mm)
STD005 320-134186/7 IC		10/24/2016 15:13	1		STX-CLP II 0.32(mm)
STD006 320-134186/8 IC		10/24/2016 15:29	1		STX-CLP I 0.32(mm)
STD006 320-134186/8 IC		10/24/2016 15:29	1		STX-CLP II 0.32(mm)
ICV 320-134186/10		10/24/2016 16:00	1		STX-CLP I 0.32(mm)
ICV 320-134186/10		10/24/2016 16:00	1		STX-CLP II 0.32(mm)
STD001 320-134186/12 IC		10/24/2016 16:32	1	1024-012.D	STX-CLP I 0.32(mm)
STD001 320-134186/12 IC		10/24/2016 16:32	1	1024-012.D	STX-CLP II 0.32(mm)
STD002 320-134186/13 IC		10/24/2016 16:47	1	1024-013.D	STX-CLP I 0.32(mm)
STD002 320-134186/13 IC		10/24/2016 16:47	1	1024-013.D	STX-CLP II 0.32(mm)
STD003 320-134186/14 IC		10/24/2016 17:03	1	1024-014.D	STX-CLP I 0.32(mm)
STD003 320-134186/14 IC		10/24/2016 17:03	1	1024-014.D	STX-CLP II 0.32(mm)
STD004 320-134186/15 IC		10/24/2016 17:19	1	1024-015.D	STX-CLP I 0.32(mm)
STD004 320-134186/15 IC		10/24/2016 17:19	1	1024-015.D	STX-CLP II 0.32(mm)
STD005 320-134186/16 IC		10/24/2016 17:34	1	1024-016.D	STX-CLP I 0.32(mm)
STD005 320-134186/16 IC		10/24/2016 17:34	1	1024-016.D	STX-CLP II 0.32(mm)
STD006 320-134186/17 IC		10/24/2016 17:50	1	1024-017.D	STX-CLP I 0.32(mm)
STD006 320-134186/17 IC		10/24/2016 17:50	1	1024-017.D	STX-CLP II 0.32(mm)
ICV 320-134186/19		10/24/2016 18:21	1	1024-019.D	STX-CLP I 0.32(mm)
ICV 320-134186/19		10/24/2016 18:21	1	1024-019.D	STX-CLP II 0.32(mm)
STD001 320-134186/21 IC		10/24/2016 18:53	1		STX-CLP I 0.32(mm)
STD001 320-134186/21 IC		10/24/2016 18:53	1		STX-CLP II 0.32(mm)
STD002 320-134186/22 IC		10/24/2016 19:08	1		STX-CLP I 0.32(mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Start Date: 10/24/2016 13:40

Analysis Batch Number: 134186 End Date: 10/24/2016 20:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD002 320-134186/22 IC		10/24/2016 19:08	1		STX-CLP II 0.32(mm)
STD003 320-134186/23 IC		10/24/2016 19:24	1		STX-CLP I 0.32(mm)
STD003 320-134186/23 IC		10/24/2016 19:24	1		STX-CLP II 0.32(mm)
STD004 320-134186/24 IC		10/24/2016 19:40	1		STX-CLP I 0.32(mm)
STD004 320-134186/24 IC		10/24/2016 19:40	1		STX-CLP II 0.32(mm)
STD005 320-134186/25 ICRT		10/24/2016 19:55	1		STX-CLP I 0.32(mm)
STD005 320-134186/25 ICRT		10/24/2016 19:55	1		STX-CLP II 0.32(mm)
STD006 320-134186/26 IC		10/24/2016 20:11	1		STX-CLP I 0.32(mm)
STD006 320-134186/26 IC		10/24/2016 20:11	1		STX-CLP II 0.32(mm)
STD007 320-134186/27 IC		10/24/2016 20:27	1		STX-CLP I 0.32(mm)
STD007 320-134186/27 IC		10/24/2016 20:27	1		STX-CLP II 0.32(mm)
ICV 320-134186/29		10/24/2016 20:58	1		STX-CLP I 0.32(mm)
ICV 320-134186/29		10/24/2016 20:58	1		STX-CLP II 0.32(mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Start Date: 10/29/2016 10:39

Analysis Batch Number: 135054 End Date: 10/29/2016 16:22

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
PEM 320-135054/3		10/29/2016 10:39	1	1029-003.D	STX-CLP I 0.32(mm)
PEM 320-135054/3		10/29/2016 10:39	1	1029-003.D	STX-CLP II 0.32(mm)
STD001 320-135054/9 IC		10/29/2016 14:16	1	1029-009.D	STX-CLP I 0.32(mm)
STD001 320-135054/9 IC		10/29/2016 14:16	1	1029-009.D	STX-CLP II 0.32(mm)
STD002 320-135054/10 IC		10/29/2016 14:32	1	1029-010.D	STX-CLP I 0.32(mm)
STD002 320-135054/10 IC		10/29/2016 14:32	1	1029-010.D	STX-CLP II 0.32(mm)
STD003 320-135054/11 IC		10/29/2016 14:48	1	1029-011.D	STX-CLP I 0.32(mm)
STD003 320-135054/11 IC		10/29/2016 14:48	1	1029-011.D	STX-CLP II 0.32(mm)
STD004 320-135054/12 IC		10/29/2016 15:03	1	1029-012.D	STX-CLP I 0.32(mm)
STD004 320-135054/12 IC		10/29/2016 15:03	1	1029-012.D	STX-CLP II 0.32(mm)
STD005 320-135054/13 ICRT		10/29/2016 15:19	1	1029-013.D	STX-CLP I 0.32(mm)
STD005 320-135054/13 ICRT		10/29/2016 15:19	1	1029-013.D	STX-CLP II 0.32(mm)
STD006 320-135054/14 IC		10/29/2016 15:35	1	1029-014.D	STX-CLP I 0.32(mm)
STD006 320-135054/14 IC		10/29/2016 15:35	1	1029-014.D	STX-CLP II 0.32(mm)
STD007 320-135054/15 IC		10/29/2016 15:50	1	1029-015.D	STX-CLP I 0.32(mm)
STD007 320-135054/15 IC		10/29/2016 15:50	1	1029-015.D	STX-CLP II 0.32(mm)
ICV 320-135054/17		10/29/2016 16:22	1	1029-017.D	STX-CLP I 0.32(mm)
ICV 320-135054/17		10/29/2016 16:22	1	1029-017.D	STX-CLP II 0.32(mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: GC75 Start Date: 11/01/2016 10:02

Analysis Batch Number: 135416 End Date: 11/01/2016 15:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
PEM 320-135416/2		11/01/2016 10:02	1	1101-002.D	STX-CLP I 0.32(mm)
PEM 320-135416/2		11/01/2016 10:02	1	1101-002.D	STX-CLP II 0.32(mm)
CCVRT 320-135416/3		11/01/2016 10:22	1	1101-003.D	STX-CLP I 0.32(mm)
CCVRT 320-135416/3		11/01/2016 10:22	1	1101-003.D	STX-CLP II 0.32(mm)
CCV 320-135416/4		11/01/2016 10:53	1	1101-004.D	STX-CLP I 0.32(mm)
CCV 320-135416/4		11/01/2016 10:53	1	1101-004.D	STX-CLP II 0.32(mm)
MB 320-134124/1-A		11/01/2016 12:06	1	1101-008.D	STX-CLP I 0.32(mm)
MB 320-134124/1-A		11/01/2016 12:06	1	1101-008.D	STX-CLP II 0.32(mm)
LCS 320-134124/2-A		11/01/2016 12:21	1	1101-009.D	STX-CLP I 0.32(mm)
LCS 320-134124/2-A		11/01/2016 12:21	1	1101-009.D	STX-CLP II 0.32(mm)
LCSD 320-134124/3-A		11/01/2016 12:37	1	1101-010.D	STX-CLP I 0.32(mm)
LCSD 320-134124/3-A		11/01/2016 12:37	1	1101-010.D	STX-CLP II 0.32(mm)
LCS 320-134124/5-A		11/01/2016 12:53	1	1101-011.D	STX-CLP I 0.32(mm)
LCS 320-134124/5-A		11/01/2016 12:53	1	1101-011.D	STX-CLP II 0.32(mm)
320-22881-1		11/01/2016 14:49	1	1101-016.D	STX-CLP I 0.32(mm)
320-22881-1		11/01/2016 14:49	1	1101-016.D	STX-CLP II 0.32(mm)
CCV 320-135416/20		11/01/2016 15:05	1	1101-017.D	STX-CLP I 0.32(mm)
CCV 320-135416/20		11/01/2016 15:05	1	1101-017.D	STX-CLP II 0.32(mm)
CCV 320-135416/21		11/01/2016 15:20	1	1101-018.D	STX-CLP I 0.32(mm)
CCV 320-135416/21		11/01/2016 15:20	1	1101-018.D	STX-CLP II 0.32(mm)

PESTICIDES BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Batch Number: 134124 Batch Start Date: 10/24/16 10:43 Batch Analyst: Kuzmenko, Natalia

Batch Method: 3510C Batch End Date: 10/25/16 12:34

Lab Sample ID	Client Sample ID	Method Chain	Basis	ReceivedpH	GrossWeight	TareWeight	InitialAmount	FinalAmount	GCPCBSU 00071
MB 320-134124/1		3510C, 8081B		7 SU			1000 mL	10 mL	0.5 mL
LCS 320-134124/2		3510C, 8081B		7 SU			1000 mL	10 mL	0.5 mL
LCSD 320-134124/3		3510C, 8081B		7 SU			1000 mL	10 mL	0.5 mL
320-22881-G-1	JBER-WW001	3510C, 8081B	T	7 SU	1560.7 g	503.17 g	1057.5 mL	10 mL	0.5 mL
LCS 320-134124/5		3510C, 8081B		7 SU			1000 mL	10 mL	0.5 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	GCPestSP 00119	GCTOXSP 00019				
MB 320-134124/1		3510C, 8081B							
LCS 320-134124/2		3510C, 8081B		500 uL					
LCSD 320-134124/3		3510C, 8081B		500 uL					
320-22881-G-1	JBER-WW001	3510C, 8081B	T						
LCS 320-134124/5		3510C, 8081B			1 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PESTICIDES BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Batch Number: 134124 Batch Start Date: 10/24/16 10:43 Batch Analyst: Kuzmenko, Natalia

Batch Method: 3510C Batch End Date: 10/25/16 12:34

Batch Notes	
Balance ID	QA-036
Analyst ID - Concentration	NGK 10/25/16 FV-10mL tubes # 28052016
Analyst ID - Clean Up	NGK 10/25/16
Exchange Solvent ID	# 0000140376
Exchange Solvent Name	hexane
Florisil ID	# S213-0060
Florisil Solution Reagent ID	#000013
Mercury ID	# 0000142098
Na2SO4 ID	SS00318
Oven, Bath or Block Temperature 1	85-90 C
Pipette ID	K35057E
Prep Solvent ID	0000151763
Prep Solvent Name	DCM
Prep Solvent Volume Used	180 mL
Person's name who did the prep	VY 10/24/16
Analyst ID - Reagent Drop Witness	ERW 10/24/16
Analyst ID - Reagent Drop	VY 10/24/16
Water Bath ID	BT-021

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC Semivolatile Pesticide Data Review Checklist-CCV

(Pages 1 – 2)

LIMS Batch Number: 135416		**Instrument ID (circle one):** GC 75
Analyst/1st Reviewer: BMM	**Method (circle):** 8081A (8081B) 608	**QC Type (circle):** Standard (QAPP) Other
Matrix (circle one): (Non-potable Water) Solid Leachate	**Work List:** 36344	**Primary Column Circle:** Stx-CLP Stx-CLP II
Job Number: 22881		**Prep Batch:** 134124

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. Calibration Verification					
1. Is a PEM (Endrin/DDT degradation) standard run at beginning and every 12 hours to check for breakdown? (Method 8081A/B both Endrin and DDT ≤15)		✓		✓	If no, list details:
2. Are appropriate standards run according to the requested requirements, including Technical Chlordane, Toxaphene, and 2,4 isomers?		✓		✓	If no, list details:
3. Do the standards include the Method specific surrogate, and Internal Standard (optional)?		✓		✓	If no, list details:
4. Is the elution order checked per column?		✓		✓	If no, list details:
5. Are the relative retention times for each analyte within retention time windows? Are Retention times updated for the initial CCV?		✓		✓	If no, list details:
6. Was the correct ICAL used for quantitation? Date and instrument ID of ICAL verified? Pest 135054 Tox 134486/19 (Check in both Chrom/Target and TALS)		✓		✓	If no, list details:
7. Primary column: Is the %D (difference or drift) for all analytes ≤20% (8000B/C); %D ≤15% for all analyte? (608)		✓		✓	If no, list details: (8000C: %D high, samples ND?)
8. Confirmation column: Is the %D (difference or drift) for all analytes ≤ 40% (DOD ≤ 20%);		✓		✓	If no, list details:
9. For any compound > 20% D (low), was RL standard analyzed and detected? (8000C)(or second column meets criteria, samples ND)	✓				If no, list details:
10. **Note:** For any compounds > 20% D (high or low), detects will be flagged as "EST" & narrated.	✓				□ Must be done in consultation with client.
11. Is a bracketing CCV run every 12 hours or 20 samples, and at the end of the sequence? (CCV every 10 samples for DOD)		✓		✓	If no, list details:
12. Do all bracketing CCVs meet all criteria noted in 6-10?		✓		✓	If no, list details: _____ CCV2_____ CCV3_____ CCV4_____

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
					CCV5_____ CCV6_____
13. Are any CCVs duplicated or rerun within a bracket? (back to back runs)? If yes, does first CCV close bracket, second CCV start next bracket? Or both pass?			✓	✓	If **yes**, list details:
14. Are samples flagged appropriately for rerun based on bracketing CCV failures?	✓				List details: _____
15. If any criteria from items above were not met, was a NCM generated & approved by supervisor?	✓				
16. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	
17. Are the ICV calibration standards and the CCV check standards from separate sources?		✓		✓	ICV vendor / lot#_____ CCV vendor / lot#:_____

2nd Reviewer: KRussell **Review Date:** 11-2-16

Comments: _____

GC Pesticide Data Review Checklist- Samples and QC

(Pages 3 – 5)

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
B. Client Sample and QC Sample Results					
1. All samples & QC injected within method time criteria? (8081A/B, 12 hr. of PEM/CCV; 625=24 hr.)		✓		✓	Time of last injection:_____
2. LCS (LFB) %recovery within limits? (8081A/B= lab statistical limits) (608, Method limits)		✓		✓	
3. MS/MSD (LFM/LFMD) %recoveries within limits? (8081A/B= lab statistical limits) (608, Method limits)	✓				
4. MS/MSD RPD within limits? (8081A/B= lab statistical limits) (608, Method limits)	✓				
5. Do all spiked samples (LCS, MS, MSD) yield positive detections? Concentrations of ND require evaluation, correction or explanation.		✓		✓	
6. Are all duplicate or spiked duplicate sample RPDs <75%? Excessive RPDs (>75%) require evaluation, correction or explanation.	✓				
7. Target cmpds in Method Blank are below required concentration.		✓		✓	
8. Surrogates within %Recovery acceptance limits for all samples and QC? *If no, list details:*		✓		✓	□ Samples submitted for re-extraction □ Confirmed by re-extraction □ Insufficient sample for re-extraction □ Surrogates high, samples ND □ Visual Matrix interference-Client notified- Explain_____
9. If applicable, Internal standard (IS) response between -50% and +100% of the CCV standard? *10. If no, list details:*		✓		✓	□ High IS response. Sample(s) rerun to confirm, or at dilution. □ Low IS response. Sample(s) reanalyzed.
11. Are internal standards <0.5 min of IS in last CCV?		✓		✓	
12. Samples with target analyte concentrations > calibration range diluted and reanalyzed? *If no, list details:*	✓				□ Results E flagged
13. Are peaks evaluated to assure there are no saturated peaks?		✓		✓	

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
14. Were prep and dilution factors verified between Chrom and TALs and final report?		✓		✓	Comments:
15. Are all positive results confirmed by confirmation column?	✓				Comments:
16. Are confirmation results within 40% RSD, or flagged?	✓				Comments:
17. Was a review performed of all chromatographic peaks that were deleted to verify removal was appropriate?		✓		✓	Comments:
18. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	
19. Are technical Chlordane and Toxaphene identified by pattern or predominant peaks? **Note:** Heptachlor Epoxide is often mis-identified as a component, octachloro epoxide, in Technical Chlordane.			✓	✓	Comments:
20. Were results from diluted & undiluted runs compared?	✓				
21. Dilution: Is highest target analyte >20% of calibration range?	✓				□ Is there matrix preventing? □ Are clean ups required?
C. Other – – Final Report Data Review					
22. Were all project requirements met?		✓		✓	
23. Samples checked to ensure all requested targets uploaded and reported correctly?		✓		✓	
24. Results for Samples/LCS/MS/MSD calculated/reported correctly in TALS and in final report? Are recovery & RPD limits present in final report?		✓		✓	(Reagents associated correctly?) (Limits in reference data?)
25. NCMs reviewed for applicability, correct references to batches/analytes, grammatical/typographical errors?		✓		✓	
26. Raw Data					
a. Unused data is clearly identified	✓				
b. All crossed out data is initialed and dated	✓				
c. Out of control QC is clearly identified	✓				
d. Any data that has a qualifier tick is commented on with appropriate action taken	✓				
e. The first page of the run includes the filename, instrument, and analyst initials/signature		✓		✓	
27. Run Log					If Chrom work list is used for run log, all runs upload to Work List
a. Unused data is clearly identified	✓	'			
b. All crossed out data is initialed and dated, not obliterated	✓				
c. Analyst initials/signature provided		✓		✓	

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
28. TALS Samples Tab					
a. LIMS Sample IDs / Containers are correct		✓		✓	
b. Method and matrix are correct		✓		✓	
c. Date and time match raw data		✓		✓	
• Dilutions are correct		✓		✓	
• Correct suffix designated (where applicable)	✓				
29. TALS Worksheet Tab is complete and correct		✓		✓	
30. TALS Reagent Tab is complete and correct		✓		✓	
31. TALS QC Links Tab is correct		✓		✓	Missing QC? □ Check QC links, to samples and duplicates □ Check cross batch links □QC at second level review? Missing limits? □ Check QC links □ Check spike (reagents) associated with appropriate analytes □ check limits in ref. data-QA
32. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted		✓		✓	
b. All reported analytes are marked Primary or Secondary		✓		✓	
c. Flags are correctly applied (no flags missing)		✓		✓	□ Apply manually □ Failing condition not propagated to samples- Re-calc
33. TALS Batch Information Screen documentation is complete		✓		✓	
34. TALS Status set to appropriate review level		✓		✓	□ Check for "yellow calculator"

2nd Reviewer: KRussell **Review Date:** 11-2-16

Comments:

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GC Semivolatile Pesticide Initial Calibration Data Review Checklist

LIMS Batch Number: 134185, 134186		**Instrument ID (circle one):** GC 75
Analyst/1st Reviewer: SMH	**Method (circle):** ~~8081A~~ 8081B 608	**QC Type (circle):** ~~Standard~~ ~~QAPP~~ ~~Other~~
Work List: 36049 (pest, tox, TC multipoint - 10/24)		**Primary Column Circle:** ~~Stx-CLP~~ Stx-CLP II

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. PEM/Calibration Verification					
1. Is a PEM (Endrin/DDT degradation) standard run with ICAL to check for breakdown? (Method 8081A/B both Endrin and DDT ≤15)		✓		✓	If no, list details:
2. Is the elution order checked per column and RT updated?		✓		✓	If no, list details:
3. Are multi-point calibrations run for multi-component analytes (Technical Chlordane, Toxaphene).		✓		✓	If no, list details:
4. Do the standards include the Method surrogate?		✓		✓	If no, list details:
5. Were ≥ 5 levels of each compound analyzed? (≥ 5 levels of surrogate analyzed for DoD?)		✓		✓	
6. Was low level standard at or below RL?		✓		✓	
7. If calibration points removed, were reasons for removal documented? Did sufficient calibration points remain? (removal from middle of curve not allowed)	✓				If no, list details: (e.g.; some points <RL removed)
8. Did the calibration %RSD meet method requirements? (8000B/C: ≤20% for for all other cmpds/surrogates) (Method 608: ≤10 % for all cmpds/surrogates)		✓		✓	
9. Was a linear or quadratic regression fit used for analytes that exceeded the %RSD requirements?			✓	✓	
10. If regression fit used, is correlation coefficient ≥0.990?	✓				If no, list details:
11. Does the low point of a linear regression fit meet the ±20% read-back criteria? (8000C)	✓				
12. At least 6 consecutive points used for quadratic curves?	✓				
13. For quadratic – examine plot: Is a tangent's slope to the curve entirely positive or negative and continuous? (does not flatten or recurve within the range of calibration)	✓				
14. For quadratic – evaluate curve fitting errors: Does each point fall within criteria when 'read-back' against the curve? (TA requirement – CA-Q-P-003; recommended limits ±30% low point & ±20% all other points) (Chrom Report = Details of Calibration per Analyte)	✓				
15. Is the concentration intercept <|RL| for each cmpd?	✓				

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
("X" intercept in Chrom; "Y" intercept in Target)					
16. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	Reasons: 1)Split Peak; 2)Undetected peak; 3)Tailing; 4)RT shift; 5)Wrong peak selected; 6)Baseline Correction; 7)Other-explain
17. Was the high point checked for detector saturation?		✓		✓	
18. Was the 2nd source initial calibration verification standard (ICV) within required criteria? (8000B/C = SOP defined) (DoD or QAPP specific = ±20%)		✓		✓	
19. If any criteria from items above were not met, was a NCM generated & approved by supervisor?		✓		✓	
20. Are all files and QC linked and processed correctly?		✓		✓	□ Files linked properly to calibration levels? □ All points are in the most recent active calibration event? [Calibration Events – 'Fix ICAL linkage' if needed] □ Runs linked to PEM? [QC links] □ Checklist & run log scanned, attached & assigned properly?
22. Is the ICAL locked?		✓		✓	

2nd Reviewer: K Russell **Review Date:** 10-31-16

Comments:

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GC Semivolatile Pesticide Initial Calibration Data Review Checklist

LIMS Batch Number: 135053, 135054		**Instrument ID (circle one):** GC 75
Analyst/1st Reviewer: SMH	**Method (circle):** 8081A 8081B 608	**QC Type (circle):** Standard QAPP Other
Work List: 36262 (pesA multipoint - 10/29)		**Primary Column Circle:** Stx-CLP Stx-CLP II

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. PEM/Calibration Verification					
1. Is a PEM (Endrin/DDT degradation) standard run with ICAL to check for breakdown? (Method 8081A/B both Endrin and DDT ≤15)		✓		✓	If no, list details:
2. Is the elution order checked per column and RT updated?		✓		✓	If no, list details:
3. Are multi-point calibrations run for multi-component analytes (Technical Chlordane, Toxaphene).	✓				If no, list details:
4. Do the standards include the Method surrogate?		✓		✓	If no, list details:
5. Were ≥ 5 levels of each compound analyzed? (≥ 5 levels of surrogate analyzed for DoD?)		✓		✓	
6. Was low level standard at or below RL?		✓		✓	
7. If calibration points removed, were reasons for removal documented? Did sufficient calibration points remain? (removal from middle of curve not allowed)	✓				If no, list details: (e.g.; some points <RL removed)
8. Did the calibration %RSD meet method requirements? (8000B/C: ≤20% for for all other cmpds/surrogates) (Method 608: ≤10 % for all cmpds/surrogates)		✓		✓	
9. Was a linear or quadratic regression fit used for analytes that exceeded the %RSD requirements?			✓	✓	
10. If regression fit used, is correlation coefficient ≥0.990?	✓				If no, list details:
11. Does the low point of a linear regression fit meet the ±20% read-back criteria? (8000C)	✓				
12. At least 6 consecutive points used for quadratic curves?	✓				
13. For quadratic – examine plot: Is a tangent's slope to the curve entirely positive or negative and continuous? (does not flatten or recurve within the range of calibration)	✓				
14. For quadratic – evaluate curve fitting errors: Does each point fall within criteria when 'read-back' against the curve? (TA requirement – CA-Q-P-003; recommended limits ±30% low point & ±20% all other points) (Chrom Report = Details of Calibration per Analyte)	✓				
15. Is the concentration intercept <|RL| for each cmpd?	✓				

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
("X" intercept in Chrom; "Y" intercept in Target)					
16. Were manual integrations performed correctly and properly documented? (dated, initialed and reason given; 2nd review of all MIs required)		✓		✓	Reasons: 1)Split Peak; 2)Undetected peak; 3)Tailing; 4)RT shift; 5)Wrong peak selected; 6)Baseline Correction; 7)Other-explain
17. Was the high point checked for detector saturation?		✓		✓	
18. Was the 2nd source initial calibration verification standard (ICV) within required criteria? (8000B/C = SOP defined) (DoD or QAPP specific = ±20%)		✓		✓	
19. If any criteria from items above were not met, was a NCM generated & approved by supervisor?		✓		✓	
20. Are all files and QC linked and processed correctly?		✓ ✓		✓	□ Files linked properly to calibration levels? □ All points are in the most recent active calibration event? [Calibration Events – 'Fix ICAL linkage' if needed] □ Runs linked to PEM? [QC links] □ Checklist & run log scanned, attached & assigned properly?
22. Is the ICAL locked?		✓		✓	

2nd Reviewer: KRussell **Review Date:** 11-1-16

Comments:

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 110116 Worklist Num: 36344
Instrument: GC75 Method: GC 8081 ICAL - IS_GC75
Batch Directory: \\ChromNA\Sacramento\ChromData\GC75\20161101-36344.b
Anaylysis Type: SemiVOA Creator: Ziemer, Sarah
Inj Volume: 2.00 Inj Vol Units: ul
Run Reagents:
GCPESTISIM_00005, Amount Added: 10.00 , Units: uL

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
PRIMER	320-0036344-001	Client	01-Nov-2016 09:47:16	1101-001.D	1	1.0		sv
PEM	320-0036344-002	PEM	01-Nov-2016 10:02:52	1101-002.D	2	1.0		sv
CCVRT PESTL5	320-0036344-003	CCVRT	01-Nov-2016 10:22:55	1101-003.D	3	1.0		sv
CCV TOXL5	320-0036344-004	CCV	01-Nov-2016 10:53:36	1101-004.D	4	1.0		sv
LCS 320-135359/2-A	320-0036344-006	LCS	01-Nov-2016 11:15:27	1101-005.D	5	1.0		sv
LCS 320-135359/3-A	320-0036344-007	LCS	01-Nov-2016 11:31:06	1101-006.D	6	1.0		sv
LCSD 320-135359/4-A	320-0036344-008	LCSD	01-Nov-2016 11:46:46	1101-007.D	7	1.0		sv
MB 320-134124/1-A	320-0036344-010	MB	01-Nov-2016 12:06:19	1101-008.D	8	1.0		sv
LCS 320-134124/2-A	320-0036344-011	LCS	01-Nov-2016 12:21:58	1101-009.D	9	1.0		sv
LCSD 320-134124/3-A	320-0036344-012	LCSD	01-Nov-2016 12:37:39	1101-010.D	10	1.0		sv
LCS 320-134124/5-A	320-0036344-013	LCS	01-Nov-2016 12:53:21	1101-011.D	11	1.0		sv
MB 320-133280/1-A	320-0036344-015	MB	01-Nov-2016 13:12:57	1101-012.D	12	1.0		sv
LCS 320-133280/2-A	320-0036344-016	LCS	01-Nov-2016 13:28:35	1101-013.D	13	1.0		sv
LCS 320-133280/3-A	320-0036344-017	LCS	01-Nov-2016 13:44:11	1101-014.D	14	1.0		sv
LCSD 320-133280/4-A	320-0036344-018	LCSD	01-Nov-2016 13:59:49	1101-015.D	15	1.0		sv
320-22881-G-1-A	320-0036344-014	Client	01-Nov-2016 14:49:32	1101-016.D	16	1.0	JBER-WW001	sv
CCV TOXL5	320-0036344-020	CCV	01-Nov-2016 15:05:12	1101-017.D	17	1.0		sv
CCV PESTL5	320-0036344-021	CCV	01-Nov-2016 15:20:50	1101-018.D	18	1.0		sv
320-22315-A-4-P	320-0036344-022	Client	01-Nov-2016 15:51:26	1101-019.D	19	1.0	MIS-DU-F02-0100	sv
320-22315-A-1-J	320-0036344-023	Client	01-Nov-2016 16:17:30	1101-020.D	20	20.0	MIS-DU-F01-0100	sv
320-22315-A-2-K	320-0036344-024	Client	01-Nov-2016 16:33:10	1101-021.D	21	20.0	MIS-DU-F01-0200	sv
320-22315-A-3-R	320-0036344-025	Client	01-Nov-2016 16:48:51	1101-022.D	22	20.0	MIS-DU-F01-0300	sv

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134124 Analyst: Yan, Vincent Batch Open: 10/24/2016 10:43:00AM

Method Code: 320-3510C_IVWT-320 Batch End:

Liquid-Liquid Extraction (Separatory Funnel)

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-134124/1 N/A	N/A		1000 mL	7			N/A	N/A	N/A		
				10 mL ✓								
2	LCS~320-134124/2 N/A	N/A		1000 mL	7			N/A	N/A	N/A		
				10 mL ✓								
3	LCSD~320-134124/3 N/A	N/A		1000 mL	7			N/A	N/A	N/A		
				10 mL ✓								
4	320-22881-G-1 (8081B_DOD5)	N/A (320-22881-1)	1560.7 g		7			10/26/16	8 Days	4		
				10 mL ✓								
5	LCS~320-134124/5 N/A	N/A		1000 mL	7			N/A	N/A	N/A		
				10 mL ✓								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134124
Method Code: 320-3510C_IVWT-320

Analyst: Yan, Vincent

Batch Open: 10/24/2016 10:43:00AM
Batch End:

Batch Notes

Person's name who did the prep	VY 10/24/16
Prep Solvent Name	DCM
Prep Solvent ID	0000151763
Prep Solvent Volume Used	180
Analyst ID - Reagent Drop	VY 10/24/16
Analyst ID - Reagent Drop Witness	ERW 10/24/16
Analyst ID - SU Reagent Drop	
Analyst ID - SU Reagent Drop Witness	
Acid used for pH adjustment	
Acid Used for pH Adjustment ID	
Base used for pH adjustment	
Base Used to Adjust pH ID	
Silica Gel ID	
Analyst ID - Concentration	
Exchange Solvent Name	
Exchange Solvent ID	
Concentration Start Time	
Concentration End Time	
Na2SO4 ID	
Water Bath ID	
Uncorrected Temperature	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134124 Analyst: Yan, Vincent Batch Open: 10/24/2016 10:43:00AM

Method Code: 320-3510C_IVWT-320 Batch End:

Oven, Bath or Block Temperature 1	
Sufficient volume for MS/MSD?	
Analyst ID - Clean Up	
Florisil ID	
Acid used for Clean Up ID	
Sulfuric Acid ID	
TBA ID	
HPLC H2O ID	
NaCl ID	
Balance ID	QA-036
Florisil Solution Reagent ID	
Mercury ID	
Filter Paper ID	
Pipette ID	K35057E
Syringe ID	
N-evap ID	
N-evap Temperature	
Uncorrected N-evap Temperature	
pH Paper ID	
Thermometer ID	
Analyst ID - Spike Analyst	
Analyst ID - Spike Witness Analyst	
Vial ID	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134124

Analyst: Yan, Vincent

Batch Open: 10/24/2016 10:43:00AM

Method Code: 320-3510C_IVWT-320

Batch End:

Batch Comment

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-134124

Analyst: Yan, Vincent

Batch Open: 10/24/2016 10:43:00AM

Method Code: 320-3510C_IVWT-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-134124/1	GCPCBSU_00071	0.5 mL	10 mL		
LCS 320-134124/2	GCPCBSU_00071	0.5 mL	10 mL		
LCS 320-134124/2	GCPestSP_00119	500 uL	10 mL		
LCSD 320-134124/3	GCPCBSU_00071	0.5 mL	10 mL		
LCSD 320-134124/3	GCPestSP_00119	500 uL	10 mL		
320-22881-G-1	GCPCBSU_00071	0.5 mL	10 mL		
LCS 320-134124/5	GCPCBSU_00071	0.5 mL	10 mL		
LCS 320-134124/5	GCTOXSP_00019	1 mL	10 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

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Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134124 Test: 8081

Earliest Holding Time: 10/27/16

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: NOM Date: 10/25/16

2nd Level Reviewer: V. Nihart Date: 10/25/16

Comments:

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Sacramento Job Number: 320-22881-1

SDG No.:

Project: JBER Soil/Water

Client Sample ID	Lab Sample ID
JBER-WW001	320-22881-1

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: JBER-WW001 Lab Sample ID: 320-22881-1

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG ID.:

Matrix: Water Date Sampled: 10/20/2016 10:40

Reporting Basis: WET Date Received: 10/21/2016 09:10

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Mercury	0.00026	0.00025	0.00020	0.00010	mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: JBER-WW001 Lab Sample ID: 320-22881-1

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG ID.:

Matrix: Water Date Sampled: 10/20/2016 10:40

Reporting Basis: WET Date Received: 10/21/2016 09:10

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Silver	0.00098	0.0010	0.00060	0.00030	mg/L	J		1	6020
Arsenic	0.017	0.0050	0.0030	0.0010	mg/L			1	6020
Barium	0.12	0.0030	0.0020	0.00050	mg/L			1	6020
Cadmium	0.00083	0.0015	0.0010	0.00050	mg/L	J	J	1	6020
Chromium	0.17	0.0050	0.0045	0.0015	mg/L			1	6020
Lead	0.015	0.0020	0.0012	0.00060	mg/L		J	1	6020
Selenium	0.0020	0.0030	0.0020	0.0010	mg/L	U		1	6020

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

ICV Source: MT6020ICV_00056 Concentration Units: mg/L

CCV Source: MT6020CCV_00147

Analyte	ICV 320-135189/15 10/28/2016 10:12				CCV 320-135189/41 10/28/2016 11:43				CCV 320-135189/49 10/28/2016 12:12			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Arsenic	0.0761		0.0800	95	0.101		0.100	101	0.0984		0.100	98
Barium	0.0781		0.0800	98	0.0985		0.100	99	0.0994		0.100	99
Cadmium	0.0776		0.0800	97	0.0965		0.100	96	0.0984		0.100	98
Chromium	0.0791		0.0800	99	0.101		0.100	101	0.102		0.100	102
Lead	0.0804		0.0800	101	0.101		0.100	101	0.103		0.100	103
Selenium	0.0810		0.0800	101	0.103		0.100	103	0.103		0.100	103
Silver	0.0394		0.0400	98	0.0484		0.0500	97	0.0490		0.0500	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

ICV Source: MT6020ICV_00056 Concentration Units: mg/L

CCV Source: MT6020CCV_00147

Analyte	CCV 320-135189/89 10/28/2016 14:30				CCV 320-135189/96 10/28/2016 14:54							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Arsenic	0.0982		0.100	98	0.0989		0.100	99				
Barium	0.101		0.100	101	0.101		0.100	101				
Cadmium	0.0996		0.100	100	0.0997		0.100	100				
Chromium	0.103		0.100	103	0.104		0.100	104				
Lead	0.101		0.100	101	0.103		0.100	103				
Selenium	0.102		0.100	102	0.107		0.100	107				
Silver	0.0510		0.0500	102	0.0514		0.0500	103				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

ICV Source: HGIM_01165 Concentration Units: mg/L

CCV Source: HGIM_01166

Analyte	ICV 320-134327/7-A 10/25/2016 14:28				CCV 320-134327/9-A 10/25/2016 14:55				CCV 320-134327/9-A 10/25/2016 15:22			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	0.00198		0.00200	99	0.00527		0.00500	105	0.00547		0.00500	109

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Method: 6020 Instrument ID: M04

Lab Sample ID: CRI 320-135189/18 Concentration Units: mg/L

CRQL Check Standard Source: MT6020LL_00073

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Silver	0.00100	0.000952	J	95	80-120
Arsenic	0.00200	0.00180	J	90	80-120
Barium	0.00100	0.00105	J	105	80-120
Cadmium	0.00100	0.000937	J	94	80-120
Chromium	0.00200	0.00170	J	85	80-120
Lead	0.00100	0.00103	J	103	80-120
Selenium	0.00200	0.00189	J	94	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICB 320-135189/16 10/28/2016 10:16		CCB 320-135189/42 10/28/2016 11:47		CCB 320-135189/50 10/28/2016 12:15		CCB 320-135189/90 10/28/2016 14:33	
		Found	C	Found	C	Found	C	Found	C
Arsenic	0.0030	0.0020	U	0.0020	U	0.0020	U	0.0020	U
Barium	0.0015	0.0010	U	0.0010	U	0.0010	U	0.0010	U
Cadmium	0.0015	0.0010	U	0.0010	U	0.0010	U	0.0010	U
Chromium	0.0050	0.0040	U	0.0040	U	0.0040	U	0.0040	U
Lead	0.0025	0.0010	U	0.0010	U	0.0010	U	0.0010	U
Selenium	0.0030	0.0025	U	0.0025	U	0.0025	U	0.0025	U
Silver	0.0010	0.00050	U	0.00050	U	0.00050	U	0.00050	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	CCB 320-135189/97 10/28/2016 14:57							
		Found	C	Found	C	Found	C	Found	C
Arsenic	0.0030	0.0020	U						
Barium	0.0015	0.0010	U						
Cadmium	0.0015	0.0010	U						
Chromium	0.0050	0.0040	U						
Lead	0.0025	0.0010	U						
Selenium	0.0030	0.0025	U						
Silver	0.0010	0.00050	U						

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICB 320-134327/8-A 10/25/2016 14:31		CCB 320-134327/10-A 10/25/2016 14:58		CCB 320-134327/10-A 10/25/2016 15:24			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.00025	0.00020	U	0.00020	U	0.00020	U		

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS - TOTAL RECOVERABLE

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Concentration Units: mg/L Lab Sample ID: MB 320-134512/1-A

Instrument Code: M04 Batch No.: 135189

CAS No.	Analyte	Concentration	C	Q	Method
7440-22-4	Silver	0.00060	U		6020_DOD5
7440-38-2	Arsenic	0.0030	U		6020_DOD5
7440-39-3	Barium	0.0020	U		6020_DOD5
7440-43-9	Cadmium	0.0010	U		6020_DOD5
7440-47-3	Chromium	0.0045	U		6020_DOD5
7439-92-1	Lead	0.0012	U		6020_DOD5
7782-49-2	Selenium	0.0020	U		6020_DOD5

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Concentration Units: mg/L Lab Sample ID: MB 320-134327/11-A

Instrument Code: H04 Batch No.: 134475

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.00020	U		7470A_DOD5

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICSA 320-135189/19 Instrument ID: M04

Lab File ID: 019ICSA.d ICS Source: MT6020ICSA_00026

Concentration Units: mg/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Arsenic		**0.0000**	
Barium		**0.0001**	
Cadmium		**0.0003**	
Chromium		**0.0011**	
Lead		**0.0001**	
Selenium		**0.0000**	
Silver		**0.0000**	
Aluminum	*100*	*98.2*	*98*
Antimony		*-0.0004*	
Beryllium		*0.0000*	
Boron		*0.0030*	
Calcium	*100*	*103*	*103*
Cobalt		*0.0001*	
Copper		*-0.0014*	
Iron	*100*	*96.9*	*97*
Li		*0.0004*	
Magnesium	*100*	*91.8*	*92*
Manganese		*0.0008*	
Molybdenum	*2.00*	*2.08*	*104*
Nickel		*0.0002*	
Phosphorus	*100*	*95.3*	*95*
Potassium	*100*	*97.6*	*98*
Sodium	*100*	*95.1*	*95*
Strontium		*0.0011*	
Thallium		*0.0000*	
Tin		*0.0001*	
Titanium	*2.00*	*1.99*	*99*
Uranium		*0.0000*	
Vanadium		*-0.0002*	
Zinc		*0.0004*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Lab Sample ID: ICSAB 320-135189/20 Instrument ID: M04

Lab File ID: 020ICSB.d ICS Source: MT6020ICSAB_00046

Concentration Units: mg/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Arsenic	**0.100**	**0.0972**	**97**
Barium	**0.100**	**0.102**	**102**
Cadmium	**0.100**	**0.0932**	**93**
Chromium	**0.100**	**0.0981**	**98**
Lead	**0.100**	**0.0956**	**96**
Selenium	**0.100**	**0.0935**	**94**
Silver	**0.0500**	**0.0467**	**93**
Aluminum	*100*	*101*	*101*
Antimony	*0.0500*	*0.0532*	*106*
Beryllium	*0.100*	*0.0996*	*100*
Boron	*0.200*	*0.203*	*101*
Calcium	*100*	*104*	*104*
Cobalt	*0.100*	*0.0961*	*96*
Copper	*0.100*	*0.0925*	*92*
Iron	*100*	*97.6*	*98*
Li	*0.100*	*0.0993*	*99*
Magnesium	*100*	*93.5*	*94*
Manganese	*0.100*	*0.0998*	*100*
Molybdenum	*2.10*	*2.13*	*101*
Nickel	*0.100*	*0.0946*	*95*
Phosphorus	*100*	*97.5*	*98*
Potassium	*100*	*96.1*	*96*
Sodium	*100*	*97.2*	*97*
Strontium	*0.100*	*0.104*	*104*
Thallium	*0.0500*	*0.0468*	*94*
Tin	*0.100*	*0.102*	*102*
Titanium	*2.10*	*2.11*	*100*
Uranium	*0.100*	*0.0980*	*98*
Vanadium	*0.100*	*0.100*	*100*
Zinc	*0.100*	*0.0925*	*93*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: JBER-WW001 MS
Lab ID: 320-22881-1 MS
Lab Name: TestAmerica Sacramento
Job No.: 320-22881-1
SDG No.:
Matrix: Water
Concentration Units: mg/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	0.00145		0.00026		0.00100	119	82-119		7470A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - TOTAL RECOVERABLE

Client ID: JBER-WW001 MS | Lab ID: 320-22881-1 MS

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Matrix: Water | Concentration Units: mg/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Silver	0.0445		0.00098	J	0.0500	87	85-116		6020
Arsenic	0.189		0.017		0.200	86	84-116		6020
Barium	0.299		0.12		0.200	89	86-114		6020
Cadmium	0.170		0.00083	J	0.200	85	87-115	J	6020
Chromium	0.346		0.17		0.200	86	85-116		6020
Lead	0.186		0.015		0.200	85	88-115	J	6020
Selenium	0.175		0.0020	U	0.200	88	80-120		6020

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: JBER-WW001 MSD
Lab ID: 320-22881-1 MSD
Lab Name: TestAmerica Sacramento
Job No.: 320-22881-1
SDG No.:
Matrix: Water
Concentration Units: mg/L
% Solids:

Analyte	(SDR) C		Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	0.00143		0.00100	117	82-119	1	20		7470A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - TOTAL RECOVERABLE

Client ID: JBER-WW001 MSD
Lab ID: 320-22881-1 MSD
Lab Name: TestAmerica Sacramento
Job No.: 320-22881-1
SDG No.:
Matrix: Water
Concentration Units: mg/L
% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Silver	0.0451		0.0500	88	85-116	1	20		6020
Arsenic	0.193		0.200	88	84-116	2	20		6020
Barium	0.302		0.200	90	86-114	1	20		6020
Cadmium	0.172		0.200	86	87-115	1	20	J	6020
Chromium	0.356		0.200	91	85-116	3	20		6020
Lead	0.187		0.200	86	88-115	0	20	J	6020
Selenium	0.181		0.200	90	80-120	3	20		6020

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS - TOTAL RECOVERABLE

Client ID: JBER-WW001 PDS | Lab ID: 320-22881-1 PDS

Lab Name: TestAmerica Sacramento | Job No.: 320-22881-1

SDG No.:

Matrix: Water | Concentration Units: mg/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Silver	0.102		0.00098	J	0.100	101	75-125		6020
Arsenic	0.414		0.017		0.400	99	75-125		6020
Barium	0.533		0.12		0.400	103	75-125		6020
Cadmium	0.399		0.00083	J	0.400	99	75-125		6020
Chromium	0.593		0.17		0.400	105	75-125		6020
Lead	0.428		0.015		0.400	103	75-125		6020
Selenium	0.418		0.0020	U	0.400	105	75-125		6020

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS - TOTAL RECOVERABLE

Lab ID: LCS 320-134512/2-A

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

Sample Matrix: Water LCS Source: TACA 1_00007

Analyte	Water(mg/L)							
	True	Found	C	%R	Limits		Q	Method
Silver	0.0500	0.0509		102	85	116		6020
Arsenic	0.200	0.193		97	84	116		6020
Barium	0.200	0.201		101	86	114		6020
Cadmium	0.200	0.200		100	87	115		6020
Chromium	0.200	0.198		99	85	116		6020
Lead	0.200	0.204		102	88	115		6020
Selenium	0.200	0.202		101	80	120		6020

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 320-134327/12-A

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

Sample Matrix: Water LCS Source: HGIM_01166

Analyte	Water(mg/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.00100	0.00110		110	82	119		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - TOTAL RECOVERABLE

Lab ID: 320-22881-1

SDG No:

Lab Name: TestAmerica Sacramento Job No: 320-22881-1

Matrix: Water Concentration Units: mg/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Silver	0.00098	J	0.0030	U	NC		6020
Arsenic	0.017		0.0181	J	NC	D	6020
Barium	0.12		0.121		NC	D	6020
Cadmium	0.00083	J	0.0050	U	NC		6020
Chromium	0.17		0.178		NC	D	6020
Lead	0.015		0.0155		NC	D	6020
Selenium	0.0020	U	0.010	U	NC		6020

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 320-22881-1

SDG No:

Lab Name: TestAmerica Sacramento Job No: 320-22881-1

Matrix: Water Concentration Units: mg/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Mercury	0.00026		0.0010	U	NC		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS - TOTAL RECOVERABLE

Lab Name: TestAmerica Sacramento Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: M04

Method: 6020 DL Date: 10/28/2014 10:28

Prep Method: 3005A

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Arsenic	75	0.005	0.001
Barium	135	0.003	0.0005
Cadmium	111	0.0015	0.0005
Chromium	52	0.005	0.0015
Lead	208	0.002	0.0006
Selenium	82	0.003	0.001
Silver	107	0.001	0.0003

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - TOTAL RECOVERABLE

Lab Name: TestAmerica Sacramento Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: M04

Method: 6020 XMDL Date: 02/13/2014 09:23

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Arsenic	75	0.003	0.001
Barium	135	0.0015	0.0005
Cadmium	111	0.0015	0.0005
Chromium	52	0.005	0.0015
Lead	208	0.0025	0.0006
Selenium	82	0.003	0.001
Silver	107	0.001	0.0003

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Sacramento Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: H04

Method: 7470A DL Date: 01/01/2013 10:45

Prep Method: 7470A

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Mercury		0.00025	0.0001

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Sacramento Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: H04

Method: 7470A XMDL Date: 01/01/2013 10:45

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Mercury		0.00025	0.0001

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Sacramento Job No: 320-22881-1

SDG No.:

Instrument ID: M04 Date: 01/01/2013 08:48

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Silver		1000	6020
Arsenic		20000	6020
Barium		20000	6020
Cadmium		20000	6020
Chromium		20000	6020
Lead		20000	6020
Selenium		20000	6020

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Sacramento Job No: 320-22881-1

SDG No.:

Instrument ID: H04 Date: 01/01/2012 15:32

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury		10	7470A

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Prep Method: 3005A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 320-134512/1-A	10/26/2016 07:00	134512		50	50
LCS 320-134512/2-A	10/26/2016 07:00	134512		50	50
320-22881-1	10/26/2016 07:00	134512		50	50
320-22881-1 MS	10/26/2016 07:00	134512		50	50
320-22881-1 MSD	10/26/2016 07:00	134512		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 320-134327/11-A	10/25/2016 11:14	134327		30	30
LCS 320-134327/12-A	10/25/2016 11:14	134327		30	30
320-22881-1	10/25/2016 11:14	134327		30	30
320-22881-1 MS	10/25/2016 11:14	134327		30	30
320-22881-1 MSD	10/25/2016 11:14	134327		30	30

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ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: M04 Analysis Method: 6020

Start Date: 10/28/2016 09:20 End Date: 10/29/2016 01:26

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	As	Ba	Cd	Cr	Pb	Se																		
RINSE 320-135189/1			09:20																									
RINSE 320-135189/2			09:23																									
RINSE 320-135189/3			09:27																									
RINSE 320-135189/4			09:31																									
RINSE 320-135189/5			09:34																									
ZZZZZZ			09:38																									
ZZZZZZ			09:41																									
RINSE 320-135189/8			09:46																									
RINSE 320-135189/9			09:50																									
RINSE 320-135189/10			09:53																									
ZZZZZZ			09:57																									
ZZZZZZ			10:01																									
ZZZZZZ			10:05																									
ZZZZZZ			10:08																									
ICV 320-135189/15	1		10:12	X	X	X	X	X	X	X																		
ICB 320-135189/16	1		10:16	X	X	X	X	X	X	X																		
ZZZZZZ			10:19																									
CRI 320-135189/18	1		10:23	X	X	X	X	X	X	X																		
ICSA 320-135189/19	1		10:26	X	X	X	X	X	X	X																		
ICSAB 320-135189/20	1		10:30	X	X	X	X	X	X	X																		
ZZZZZZ			10:33																									
ZZZZZZ			10:37																									
ZZZZZZ			10:40																									
ZZZZZZ			10:44																									
ZZZZZZ			10:47																									
ZZZZZZ			10:50																									
ZZZZZZ			10:54																									
ZZZZZZ			10:58																									
CCV 320-135189/29			11:01																									
CCB 320-135189/30			11:05																									
CCV 320-135189/31			11:08																									
CCB 320-135189/32			11:12																									
ZZZZZZ			11:15																									
ZZZZZZ			11:19																									
ZZZZZZ			11:22																									
ZZZZZZ			11:26																									
ZZZZZZ			11:29																									
ZZZZZZ			11:33																									
CCV 320-135189/39			11:36																									
CCB 320-135189/40			11:40																									
CCV 320-135189/41	1		11:43	X	X	X	X	X	X	X																		
CCB 320-135189/42	1		11:47	X	X	X	X	X	X	X																		

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: M04 Analysis Method: 6020

Start Date: 10/28/2016 09:20 End Date: 10/29/2016 01:26

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	As	Ba	Cd	Cr	Pb	Se																		
MB 320-134512/1-A	1	R	11:51	X	X	X	X	X	X	X																		
LCS 320-134512/2-A	1	R	11:54	X	X	X	X	X	X	X																		
ZZZZZZ			11:58																									
ZZZZZZ			12:01																									
ZZZZZZ			12:05																									
ZZZZZZ			12:08																									
CCV 320-135189/49	1		12:12	X	X	X	X	X	X	X																		
CCB 320-135189/50	1		12:15	X	X	X	X	X	X	X																		
CCV 320-135189/51			12:19																									
CCB 320-135189/52			12:22																									
ZZZZZZ			12:26																									
ZZZZZZ			12:29																									
ZZZZZZ			12:33																									
ZZZZZZ			12:36																									
ZZZZZZ			12:40																									
ZZZZZZ			12:43																									
ZZZZZZ			12:47																									
CCV 320-135189/60			12:50																									
CCB 320-135189/61			12:54																									
CCV 320-135189/62			12:57																									
CCB 320-135189/63			13:01																									
ZZZZZZ			13:04																									
ZZZZZZ			13:08																									
ZZZZZZ			13:12																									
ZZZZZZ			13:15																									
ZZZZZZ			13:18																									
ZZZZZZ			13:22																									
CCV 320-135189/70			13:25																									
CCB 320-135189/71			13:29																									
CCV 320-135189/72			13:32																									
CCB 320-135189/73			13:36																									
ZZZZZZ			13:39																									
ZZZZZZ			13:43																									
ZZZZZZ			13:46																									
ZZZZZZ			13:49																									
ZZZZZZ			13:52																									
ZZZZZZ			13:55																									
ZZZZZZ			13:59																									
CCV 320-135189/81			14:02																									
CCB 320-135189/82			14:05																									
CCV 320-135189/83			14:09																									
CCB 320-135189/84			14:12																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: M04 Analysis Method: 6020

Start Date: 10/28/2016 09:20 End Date: 10/29/2016 01:26

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	As	Ba	Cd	Cr	Pb	Se																		
CCVL 320-135189/85			14:16																									
CCVL 320-135189/86			14:19																									
CCV 320-135189/87			14:23																									
CCB 320-135189/88			14:26																									
CCV 320-135189/89	1		14:30	X	X	X	X	X	X	X																		
CCB 320-135189/90	1		14:33	X	X	X	X	X	X	X																		
320-22881-1	1	R	14:37	X	X	X	X	X	X	X																		
320-22881-1 SD	5	R	14:40	X	X	X	X	X	X	X																		
320-22881-1 PDS	1	R	14:44	X	X	X	X	X	X	X																		
320-22881-1 MS	1	R	14:47	X	X	X	X	X	X	X																		
320-22881-1 MSD	1	R	14:50	X	X	X	X	X	X	X																		
CCV 320-135189/96	1		14:54	X	X	X	X	X	X	X																		
CCB 320-135189/97	1		14:57	X	X	X	X	X	X	X																		
CCV 320-135189/98			15:01																									
CCB 320-135189/99			15:04																									
ZZZZZZ			15:08																									
ZZZZZZ			15:11																									
ZZZZZZ			15:15																									
ZZZZZZ			15:18																									
ZZZZZZ			15:21																									
ZZZZZZ			15:24																									
CCV 320-135189/106			15:28																									
CCB 320-135189/107			15:31																									
CCV 320-135189/108			15:35																									
CCB 320-135189/109			15:38																									
ZZZZZZ			15:42																									
ZZZZZZ			15:45																									
ZZZZZZ			15:49																									
ZZZZZZ			15:52																									
CCV 320-135189/114			15:55																									
CCB 320-135189/115			15:59																									
CCV 320-135189/116			16:03																									
CCB 320-135189/117			16:06																									
ZZZZZZ			16:10																									
ZZZZZZ			16:13																									
ZZZZZZ			16:16																									
ZZZZZZ			16:20																									
CCV 320-135189/122			16:23																									
CCB 320-135189/123			16:27																									
CCV 320-135189/124			16:30																									
CCB 320-135189/125			16:34																									
ZZZZZZ			16:37																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: M04 Analysis Method: 6020

Start Date: 10/28/2016 09:20 End Date: 10/29/2016 01:26

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	As	Ba	Cd	Cr	Pb	Se																		
ZZZZZZ			16:41																									
ZZZZZZ			16:44																									
ZZZZZZ			16:47																									
ZZZZZZ			16:51																									
ZZZZZZ			16:54																									
CCV 320-135189/132			16:57																									
CCB 320-135189/133			17:01																									
CCV 320-135189/134			17:04																									
CCB 320-135189/135			17:08																									
ZZZZZZ			17:11																									
ZZZZZZ			17:15																									
ZZZZZZ			17:18																									
ZZZZZZ			17:22																									
ZZZZZZ			17:25																									
ZZZZZZ			17:28																									
CCV 320-135189/142			17:32																									
CCB 320-135189/143			17:35																									
CCV 320-135189/144			17:39																									
CCB 320-135189/145			17:42																									
ZZZZZZ			17:46																									
ZZZZZZ			17:49																									
ZZZZZZ			17:53																									
ZZZZZZ			17:56																									
ZZZZZZ			17:59																									
ZZZZZZ			18:03																									
CCV 320-135189/152			18:06																									
CCB 320-135189/153			18:09																									
CCV 320-135189/154			18:13																									
CCB 320-135189/155			18:17																									
ZZZZZZ			18:20																									
ZZZZZZ			18:24																									
ZZZZZZ			18:27																									
ZZZZZZ			18:31																									
ZZZZZZ			18:34																									
ZZZZZZ			18:38																									
CCV 320-135189/162			18:41																									
CCB 320-135189/163			18:45																									
CCV 320-135189/164			18:48																									
CCB 320-135189/165			18:52																									
ZZZZZZ			18:55																									
ZZZZZZ			18:59																									
ZZZZZZ			19:02																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: M04 Analysis Method: 6020

Start Date: 10/28/2016 09:20 End Date: 10/29/2016 01:26

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	As	Ba	Cd	Cr	Pb	Se																		
ZZZZZZ			19:06																									
ZZZZZZ			19:09																									
CCV 320-135189/171			19:13																									
CCB 320-135189/172			19:16																									
CCV 320-135189/173			19:20																									
CCB 320-135189/174			19:23																									
ZZZZZZ			19:27																									
ZZZZZZ			19:30																									
ZZZZZZ			19:34																									
ZZZZZZ			19:37																									
ZZZZZZ			19:41																									
ZZZZZZ			19:44																									
CCV 320-135189/181			19:48																									
CCB 320-135189/182			19:51																									
CCV 320-135189/183			19:55																									
CCB 320-135189/184			19:59																									
ZZZZZZ			20:02																									
ZZZZZZ			20:06																									
ZZZZZZ			20:09																									
ZZZZZZ			20:13																									
ZZZZZZ			20:16																									
ZZZZZZ			20:20																									
CCV 320-135189/191			20:23																									
CCB 320-135189/192			20:27																									
CCV 320-135189/193			20:30																									
CCB 320-135189/194			20:34																									
ZZZZZZ			20:38																									
ZZZZZZ			20:41																									
ZZZZZZ			20:45																									
ZZZZZZ			20:48																									
ZZZZZZ			20:52																									
CCV 320-135189/200			20:55																									
CCB 320-135189/201			20:59																									
CCV 320-135189/202			21:02																									
CCB 320-135189/203			21:06																									
ZZZZZZ			21:09																									
ZZZZZZ			21:13																									
ZZZZZZ			21:16																									
ZZZZZZ			21:20																									
ZZZZZZ			21:23																									
ZZZZZZ			21:27																									
CCV 320-135189/210			21:30																									

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13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: M04 Analysis Method: 6020

Start Date: 10/28/2016 09:20 End Date: 10/29/2016 01:26

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	As	Ba	Cd	Cr	Pb	Se																		
CCB 320-135189/211			21:34																									
CCV 320-135189/212			21:37																									
CCB 320-135189/213			21:41																									
ZZZZZZ			21:44																									
ZZZZZZ			21:48																									
ZZZZZZ			21:51																									
ZZZZZZ			21:55																									
ZZZZZZ			21:58																									
ZZZZZZ			22:02																									
CCV 320-135189/220			22:06																									
CCB 320-135189/221			22:09																									
CCV 320-135189/222			22:13																									
CCB 320-135189/223			22:16																									
ZZZZZZ			22:20																									
ZZZZZZ			22:23																									
ZZZZZZ			22:27																									
ZZZZZZ			22:30																									
CCV 320-135189/228			22:34																									
CCB 320-135189/229			22:37																									
CCV 320-135189/230			22:41																									
CCB 320-135189/231			22:44																									
ZZZZZZ			22:48																									
ZZZZZZ			22:52																									
ZZZZZZ			22:55																									
ZZZZZZ			22:59																									
ZZZZZZ			23:02																									
CCV 320-135189/237			23:06																									
CCB 320-135189/238			23:09																									
CCV 320-135189/239			23:13																									
CCB 320-135189/240			23:16																									
CCV 320-135189/241			23:20																									
CCB 320-135189/242			23:23																									
ZZZZZZ			23:27																									
ZZZZZZ			23:31																									
ZZZZZZ			23:34																									
ZZZZZZ			23:38																									
ZZZZZZ			23:41																									
CCV 320-135189/248			23:45																									
CCB 320-135189/249			23:48																									
CCV 320-135189/250			23:52																									
CCB 320-135189/251			23:55																									
ZZZZZZ			23:59																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: M04 Analysis Method: 6020

Start Date: 10/28/2016 09:20 End Date: 10/29/2016 01:26

Lab Sample Id	D/F	Type	Time	Analytes																								
				Ag	As	Ba	Cd	Cr	Pb	Se																		
ZZZZZZ			00:02																									
ZZZZZZ			00:06																									
ZZZZZZ			00:09																									
ZZZZZZ			00:13																									
CCV 320-135189/257			00:16																									
CCB 320-135189/258			00:20																									
CCV 320-135189/259			00:23																									
CCB 320-135189/260			00:27																									
ZZZZZZ			00:30																									
ZZZZZZ			00:34																									
ZZZZZZ			00:37																									
CCV 320-135189/264			00:40																									
CCB 320-135189/265			00:44																									
CCV 320-135189/266			00:47																									
CCB 320-135189/267			00:51																									
CCV 320-135189/268			00:54																									
CCB 320-135189/269			00:58																									
CCVL 320-135189/270			01:01																									
ZZZZZZ			01:05																									
RINSE 320-135189/272			01:09																									
RINSE 320-135189/273			01:12																									
RINSE 320-135189/274			01:16																									
RINSE 320-135189/275			01:19																									
RINSE 320-135189/276			01:23																									
RINSE 320-135189/277			01:26																									

Prep Types:
R = Total Recoverable

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: H04 Analysis Method: 7470A

Start Date: 10/25/2016 14:08 End Date: 10/25/2016 16:33

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 320-134327/1-A			14:08	X																								
IC 320-134327/2-A			14:10	X																								
IC 320-134327/3-A			14:13	X																								
IC 320-134327/4-A			14:15	X																								
IC 320-134327/5-A			14:17	X																								
IC 320-134327/6-A			14:19	X																								
ZZZZZZ			14:26																									
ICV 320-134327/7-A	1		14:28	X																								
ICB 320-134327/8-A	1		14:31	X																								
MB 320-134327/11-A	1	T	14:33	X																								
LCS 320-134327/12-A	1	T	14:35	X																								
ZZZZZZ			14:37																									
ZZZZZZ			14:40																									
ZZZZZZ			14:42																									
ZZZZZZ			14:44																									
ZZZZZZ			14:46																									
ZZZZZZ			14:49																									
ZZZZZZ			14:51																									
ZZZZZZ			14:53																									
CCV 320-134327/9-A	1		14:55	X																								
CCB 320-134327/10-A	1		14:58	X																								
ZZZZZZ			15:00																									
320-22881-1	1	T	15:02	X																								
320-22881-1 SD	5	T	15:04	X																								
320-22881-1 MS	1	T	15:07	X																								
320-22881-1 MSD	1	T	15:09	X																								
ZZZZZZ			15:11																									
ZZZZZZ			15:13																									
ZZZZZZ			15:15																									
ZZZZZZ			15:18																									
ZZZZZZ			15:20																									
CCV 320-134327/9-A	1		15:22	X																								
CCB 320-134327/10-A	1		15:24	X																								
ZZZZZZ			15:26																									
ZZZZZZ			15:28																									
ZZZZZZ			15:30																									
ZZZZZZ			15:32																									
ZZZZZZ			15:34																									
ZZZZZZ			15:36																									
ZZZZZZ			15:39																									
ZZZZZZ			15:41																									
ZZZZZZ			15:43																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: H04 Analysis Method: 7470A

Start Date: 10/25/2016 14:08 End Date: 10/25/2016 16:33

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
ZZZZZZ			15:46																									
CCV 320-134327/9-A			15:48																									
CCB 320-134327/10-A			15:50																									
ZZZZZZ			15:52																									
ZZZZZZ			15:54																									
ZZZZZZ			15:56																									
ZZZZZZ			15:58																									
ZZZZZZ			16:01																									
ZZZZZZ			16:03																									
ZZZZZZ			16:05																									
ZZZZZZ			16:07																									
ZZZZZZ			16:10																									
ZZZZZZ			16:12																									
CCV 320-134327/9-A			16:14																									
CCB 320-134327/10-A			16:16																									
ZZZZZZ			16:20																									
ZZZZZZ			16:22																									
ZZZZZZ			16:24																									
ZZZZZZ			16:26																									
ZZZZZZ			16:28																									
CCV 320-134327/9-A			16:30																									
CCB 320-134327/10-A			16:33																									

Prep Types:
T = Total/NA

FORM XIII-IN

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

ICP-MS Instrument ID: M04 Start Date: 10/28/2016 End Date: 10/28/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Sc/1	Q	Element Sc/2	Q	Element Ge/1	Q	Element Ge/2	Q	Element In/1	Q
ICV 320-135189/15	10:12	94		92		94		90		94	
ICB 320-135189/16	10:16	97		95		98		95		98	
CRI 320-135189/18	10:23	95		91		96		91		95	
ICSA 320-135189/19	10:26	92		89		90		86		88	
ICSAB 320-135189/20	10:30	93		88		91		86		90	
CCV 320-135189/41	11:43	93		91		93		91		96	
CCB 320-135189/42	11:47	93		91		95		92		93	
MB 320-134512/1-A	11:51	97		94		98		95		99	
LCS 320-134512/2-A	11:54	96		93		97		93		95	
CCV 320-135189/49	12:12	95		95		97		94		97	
CCB 320-135189/50	12:15	97		94		97		94		96	
CCV 320-135189/89	14:30	102		102		106		103		99	
CCB 320-135189/90	14:33	102		98		102		100		102	
320-22881-1	14:37	105		98		103		101		101	
320-22881-1 SD	14:40	101		100		100		101		99	
320-22881-1 PDS	14:44	101		94		101		96		97	
320-22881-1 MS	14:47	96		93		95		94		94	
320-22881-1 MSD	14:50	99		94		98		95		96	
CCV 320-135189/96	14:54	95		96		98		98		94	
CCB 320-135189/97	14:57	99		99		99		100		99	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

ICP-MS Instrument ID: M04 Start Date: 10/28/2016 End Date: 10/28/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element In/2	Q	Element Tm(IS)	Q	Element	Q	Element	Q	Element	Q
ICV 320-135189/15	10:12	91		93							
ICB 320-135189/16	10:16	96		96							
CRI 320-135189/18	10:23	90		94							
ICSA 320-135189/19	10:26	87		92							
ICSAB 320-135189/20	10:30	87		92							
CCV 320-135189/41	11:43	90		93							
CCB 320-135189/42	11:47	93		94							
MB 320-134512/1-A	11:51	93		96							
LCS 320-134512/2-A	11:54	94		96							
CCV 320-135189/49	12:12	95		94							
CCB 320-135189/50	12:15	95		95							
CCV 320-135189/89	14:30	104		99							
CCB 320-135189/90	14:33	102		97							
320-22881-1	14:37	104		101							
320-22881-1 SD	14:40	101		98							
320-22881-1 PDS	14:44	97		99							
320-22881-1 MS	14:47	95		97							
320-22881-1 MSD	14:50	98		100							
CCV 320-135189/96	14:54	101		93							
CCB 320-135189/97	14:57	103		97							

METALS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Batch Number: 134512 Batch Start Date: 10/26/16 07:00 Batch Analyst: Merritt, Nataliya

Batch Method: 3005A Batch End Date: 10/26/16 11:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	TACA 1 00007	TACA 2 00007	
MB 320-134512/1		3005A, 6020		<2	50 mL	50 mL			
LCS 320-134512/2		3005A, 6020		<2	50 mL	50 mL	0.1 mL	0.1 mL	
320-22881-M-1	JBER-WW001	3005A, 6020	R	<2	50 mL	50 mL			
320-22881-M-1 MS	JBER-WW001	3005A, 6020	R	<2	50 mL	50 mL	0.1 mL	0.1 mL	
320-22881-M-1 MSD	JBER-WW001	3005A, 6020	R	<2	50 mL	50 mL	0.1 mL	0.1 mL	

Batch Notes	
First End time	11:00
Lot # of hydrochloric acid	764125
Lot # of Nitric Acid	762599
Hot Block ID	5
Oven, Bath or Block Temperature 1	94
Oven, Bath or Block Temperature 2	94
pH Paper ID	1916
Pipette ID	R7513
Analyst ID - Spike Witness Analyst	TGL
First Start time	07:00
Thermometer ID	bt15
Digestion Tube/Cup ID	1512329

Basis	Basis Description
R	Total Recoverable

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Batch Number: 134327 Batch Start Date: 10/25/16 11:14 Batch Analyst: McGrath, Sean F

Batch Method: 7470A Batch End Date: 10/25/16 12:14

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	HGIM 01165	HGIM 01166		
ICV 320-134327/7		7470A, 7470A		30 mL	30 mL	0.6 mL			
ICB 320-134327/8		7470A, 7470A		30 mL	30 mL				
CCV 320-134327/9		7470A, 7470A		30 mL	30 mL		1.5 mL		
CCB 320-134327/10		7470A, 7470A		30 mL	30 mL				
MB 320-134327/11		7470A, 7470A		30 mL	30 mL				
LCS 320-134327/12		7470A, 7470A		30 mL	30 mL		0.3 mL		
320-22881-M-1	JBER-WW001	7470A, 7470A	T	30 mL	30 mL				
320-22881-M-1 MS	JBER-WW001	7470A, 7470A	T	30 mL	30 mL		0.3 mL		
320-22881-M-1 MSD	JBER-WW001	7470A, 7470A	T	30 mL	30 mL		0.3 mL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Batch Number: 134327 Batch Start Date: 10/25/16 11:14 Batch Analyst: McGrath, Sean F

Batch Method: 7470A Batch End Date: 10/25/16 12:14

Batch Notes	
Hydroxylamine Sulfate ID	733427
Digestion End Time	10/25/2016 @ 12:14
Digestion Start Time	10/25/2016 @ 11:14
Sulfuric Acid Lot Number	733362
Lot # of Nitric Acid	733361
Hot Block ID	AUTOCLAVE1
Potassium Persulfate ID	733428
Potassium Permanganate ID	733429
NaCl ID	733364
pH Paper ID	10D3822
Pipette ID	4346621, N18697B, L18715B
Stannous Chloride ID	769398
SOP Number	WS-MT-0005
Analyst ID - Spike Witness Analyst	GSH
Temperature	See attach PDF
Thermometer ID	HiTemp 140-PT/P26181
Digestion Tube/Cup ID	10316080
Visual ck - digestate F.V. consistency	Yes

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

US EPA Tune Check Sample Report

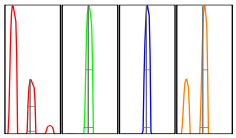
Batch Folder D:\102016.b\102816.b
Report Comment
Instrument Name G3281A JP13342613

[He]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
24	1660	2.52	5.00	
59	19441	1.01	5.00	
115	26625	0.88	5.00	
208	16558	0.50	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
24	1659	1647	1692	1598	1704
59	19426	19592	19114	19475	19595
115	26280	26527	26762	26896	26659
208	16681	16548	16578	16526	16455

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
24	469	23.90	23.9 - 24.1		0.445	0.900	
59	5734	58.95	58.9 - 59.1		0.478	0.900	
115	9087	115.00	114.9 - 115.1		0.394	0.900	
208	5773	207.95	207.9 - 208.1		0.432	0.900	

X% = 5 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 127.4 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Carrier Gas	0.41	L/min			
RF Matching	1.30	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	℃						

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	6.5	V			
Extract 2	-165.0	V	Cell Entrance	-30	V			
Omega Bias	-90	V	Cell Exit	-50	V			
Deflect	-3.0	V						

Cell Parameters

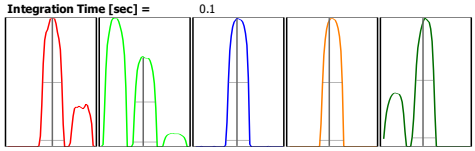
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	true		3rd Gas Flow	0	%			
He Flow	3.7	mL/min	OctP Bias	-17.0	V			
H2 Flow	0.0	mL/min	OctP RF	180	V			
Energy Discrimination	3.0	V						

[H2]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)
9	1190	1.06	5.00
24	13062	3.55	5.00
59	29432	1.54	5.00
115	127275	0.80	5.00
208	41973	1.23	5.00

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	1195	1199	1192	1195	1168
24	13862	12744	12934	13025	12746
59	29807	28982	29515	29914	28941
115	127212	126323	128526	128060	126256
208	41400	42316	42310	42423	41415

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	W-X% (Flag)
9	202	9.050	8.9 - 9.1		0.807	0.900	
24	2016	24.000	23.9 - 24.1		0.792	0.900	
59	4691	59.000	58.9 - 59.1		0.786	0.900	
115	20884	114.950	114.9 - 115.1		0.782	0.900	
208	7388	207.950	207.9 - 208.1		0.792	0.900	

X% = 5 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 159.3 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Carrier Gas	0.41	L/min			
RF Matching	1.30	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	℃						

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	6.5	V			
Extract 2	-165.0	V	Cell Entrance	-30	V			
Omega Bias	-90	V	Cell Exit	-50	V			
Deflect	-3.0	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	true		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-18.0	V			
H2 Flow	3.8	mL/min	OctP RF	180	V			
Energy Discrimination	2.0	V						

Sample Report

Sample Table

Sample Name	rinse
Data File Name	001SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:20:12-07:00
Sample Type	Sample
Dilution	1
Comment	rinse
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse
Data File Name	002SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:23:55-07:00
Sample Type	Sample
Dilution	1
Comment	rinse
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse
Data File Name	003SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:27:29-07:00
Sample Type	Sample
Dilution	1
Comment	rinse
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse
Data File Name	004SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:31:01-07:00
Sample Type	Sample
Dilution	1
Comment	rinse
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse
Data File Name	005SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:34:36-07:00
Sample Type	Sample
Dilution	1
Comment	rinse
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Blank Report

Sample Table

Sample Name	xbalnk
Data File Name	006_Blk.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:38:11-07:00
Sample Type	Blank
Dilution	1
Comment	rinse
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Standard Report

Sample Table

Sample Name	P/A 758322
Data File Name	007CALS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:41:46-07:00
Sample Type	CalStd
Level	
Dilution	1
Comment	P/A
ISTD Ref File Name	
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li 7	7	2	H2	125908	12.07
Be 9	9	2	H2	4453	12.78
B 11	11	2	H2	81297	11.40
Na 23	23	1	He	37184319	4.47
Mg 24	24	1	He	18999287	4.46
Al 27	27	1	He	381773	6.38
P 31	31	1	He	115803	5.24
K 39	39	1	He	22618949	4.89
Ca 40	40	2	H2	91614411	13.67
Ti 47	47	1	He	126774	6.67
V 51	51	1	He	1626741	8.45
Cr 52	52	1	He	748528	6.19
Mn 55	55	1	He	1295616	5.59
Fe 56	56	1	He	3370925	5.90
Co 59	59	1	He	2626202	5.06
Ni 60	60	1	He	647748	5.41
Cu 63	63	1	He	866450	6.25
Zn 66	66	1	He	291313	5.40
As 75	75	1	He	853066	5.39
Se 78	78	2	H2	241265	12.85
Sr 88	88	1	He	3895407	4.26
Mo 95	95	1	He	1995871	7.42
Ag 107	107	1	He	246801	5.09
Cd 111	111	1	He	41347	6.12
Sn 118	118	1	He	4601113	5.85
Sb 121	121	1	He	1289041	5.30
Ba 137	137	1	He	2298098	6.13
Ce 140	140	1	He	358	14.80
Gd 157	157	1	He	296	28.74
Au 197	197	1	He	28	66.09
Tl 205	205	1	He	15254382	7.26
Pb206	206	1	He	1328261	5.94
Pb207	207	1	He	1171191	4.94
Pb 208	208	1	He	5226842	5.45
U 238	238	1	He	12	56.76

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	Rinse
Data File Name	008_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:46:49-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	rinse
Data File Name	009_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:50:24-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	rinse
Data File Name	010_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:53:59-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name	xblnk
Data File Name	011CALB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T09:57:31-07:00
Sample Type	CalBlk
Level	
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li 7	7	2	H2	111	11.44
Be 9	9	2	H2	1	107.85
B 11	11	2	H2	4223	6.64
Na 23	23	1	He	27392	2.00
Mg 24	24	1	He	525	31.06
Al 27	27	1	He	461	7.55
P 31	31	1	He	77	14.24
K 39	39	1	He	71753	1.13
Ca 40	40	2	H2	39380	9.64
Ti 47	47	1	He	8	25.00
V 51	51	1	He	1483	5.56
Cr 52	52	1	He	4080	1.96
Mn 55	55	1	He	106	31.17
Fe 56	56	1	He	4316	2.96
Co 59	59	1	He	28	94.49
Ni 60	60	1	He	35	26.65
Cu 63	63	1	He	493	3.78
Zn 66	66	1	He	217	1.41
As 75	75	1	He	370	3.24
Se 78	78	2	H2	25	19.87
Sr 88	88	1	He	257	14.05
Mo 95	95	1	He	61	36.31
Ag 107	107	1	He	70	38.98
Cd 111	111	1	He	5	114.56
Sn 118	118	1	He	1276	6.45
Sb 121	121	1	He	4804	0.39
Ba 137	137	1	He	34	55.89
Ce 140	140	1	He	38	13.48
Gd 157	157	1	He	0	#DIV/0!
Au 197	197	1	He	59	51.35
Tl 205	205	1	He	236	64.14
Pb206	206	1	He	121	13.58
Pb207	207	1	He	103	14.06
Pb 208	208	1	He	437	19.83
U 238	238	1	He	21	72.94

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc_45	45	1	He	7339472	1.70
Sc_45	45	2	H2	41315308	7.38
Ge_72	72	1	He	3861951	3.25
Ge_72	72	2	H2	12379122	3.54
In_115	115	1	He	4521904	2.03
In_115	115	2	H2	11164507	1.49
Tm_169	169	1	He	4552241	1.01

Calibration Blank Report

Sample Table

Sample Name	xblnk
Data File Name	012CALB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:01:19-07:00
Sample Type	CalBlk
Level	
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li 7	7	2	H2	101	2.76
Be 9	9	2	H2	0	173.21
B 11	11	2	H2	4034	6.35
Na 23	23	1	He	26738	1.11
Mg 24	24	1	He	407	10.85
Al 27	27	1	He	411	7.91
P 31	31	1	He	61	3.77
K 39	39	1	He	71781	1.56
Ca 40	40	2	H2	39219	11.94
Ti 47	47	1	He	3	124.90
V 51	51	1	He	1455	7.72
Cr 52	52	1	He	4078	0.48
Mn 55	55	1	He	116	20.90
Fe 56	56	1	He	4303	2.23
Co 59	59	1	He	13	9.12
Ni 60	60	1	He	41	25.24
Cu 63	63	1	He	425	9.78
Zn 66	66	1	He	217	15.37
As 75	75	1	He	352	2.81
Se 78	78	2	H2	16	29.48
Sr 88	88	1	He	221	9.66
Mo 95	95	1	He	23	37.78
Ag 107	107	1	He	76	21.76
Cd 111	111	1	He	3	43.30
Sn 118	118	1	He	1098	3.52
Sb 121	121	1	He	4072	5.20
Ba 137	137	1	He	22	45.83
Ce 140	140	1	He	24	31.49
Gd 157	157	1	He	1	173.21
Au 197	197	1	He	49	30.75
Tl 205	205	1	He	88	17.95
Pb206	206	1	He	111	15.10
Pb207	207	1	He	79	6.45
Pb 208	208	1	He	380	9.89
U 238	238	1	He	16	75.27

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc_45	45	1	He	7232410	3.54
Sc_45	45	2	H2	42797037	8.85
Ge_72	72	1	He	3796013	1.24
Ge_72	72	2	H2	12662499	3.57
In_115	115	1	He	4452615	2.79
In_115	115	2	H2	11392917	1.75
Tm_169	169	1	He	4576377	2.91

Calibration Blank Report

Sample Table

Sample Name	CalStd0 758340
Data File Name	013CALB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:05:07-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li 7	7	2	H2	89	17.46
Be 9	9	2	H2	0	173.21
B 11	11	2	H2	3944	8.76
Na 23	23	1	He	25404	1.84
Mg 24	24	1	He	359	7.52
Al 27	27	1	He	298	11.09
P 31	31	1	He	76	43.80
K 39	39	1	He	71069	1.38
Ca 40	40	2	H2	36210	13.64
Ti 47	47	1	He	4	50.00
V 51	51	1	He	1539	6.63
Cr 52	52	1	He	3879	3.86
Mn 55	55	1	He	99	10.00
Fe 56	56	1	He	3985	2.02
Co 59	59	1	He	19	31.60
Ni 60	60	1	He	27	51.05
Cu 63	63	1	He	362	6.79
Zn 66	66	1	He	195	7.26
As 75	75	1	He	365	2.10
Se 78	78	2	H2	13	7.69
Sr 88	88	1	He	191	23.58
Mo 95	95	1	He	23	62.27
Ag 107	107	1	He	70	32.99
Cd 111	111	1	He	5	137.77
Sn 118	118	1	He	793	3.85
Sb 121	121	1	He	3218	2.30
Ba 137	137	1	He	19	53.91
Ce 140	140	1	He	36	27.07
Gd 157	157	1	He	2	173.21
Au 197	197	1	He	31	16.37
Tl 205	205	1	He	86	9.00
Pb206	206	1	He	117	20.00
Pb207	207	1	He	91	22.05
Pb 208	208	1	He	377	11.97
U 238	238	1	He	8	65.47

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc_45	45	1	He	7475944	2.12
Sc_45	45	2	H2	44729383	9.84
Ge_72	72	1	He	3950352	1.58
Ge_72	72	2	H2	13199044	5.45
In_115	115	1	He	4664305	1.01
In_115	115	2	H2	12147161	3.89
Tm_169	169	1	He	4835424	1.32

Calibration Standard Report

Sample Table

Sample Name	CalStd1 765091
Data File Name	014CALS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:08:53-07:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li 7	7	2	H2	25551	9.59
Be 9	9	2	H2	18127	9.52
B 11	11	2	H2	34604	10.75
Na 23	23	1	He	3690302	4.05
Mg 24	24	1	He	1944538	6.95
Al 27	27	1	He	927008	4.29
P 31	31	1	He	54033	4.68
K 39	39	1	He	2297446	6.30
Ca 40	40	2	H2	19364638	15.35
Ti 47	47	1	He	24490	5.56
V 51	51	1	He	312996	4.46
Cr 52	52	1	He	376113	4.20
Mn 55	55	1	He	261186	5.32
Fe 56	56	1	He	16136957	5.98
Co 59	59	1	He	526470	4.52
Ni 60	60	1	He	132207	4.42
Cu 63	63	1	He	350412	4.73
Zn 66	66	1	He	60935	5.29
As 75	75	1	He	42694	5.32
Se 78	78	2	H2	24639	7.43
Sr 88	88	1	He	368457	5.56
Mo 95	95	1	He	376828	5.55
Ag 107	107	1	He	266458	5.47
Cd 111	111	1	He	88227	5.09
Sn 118	118	1	He	231913	5.35
Sb 121	121	1	He	133299	4.68
Ba 137	137	1	He	115136	4.93
Ce 140	140	1	He	1392102	4.48
Gd 157	157	1	He	286249	4.92
Au 197	197	1	He	370011	3.98
Tl 205	205	1	He	416629	5.09
Pb206	206	1	He	289765	5.58
Pb207	207	1	He	248197	5.94
Pb 208	208	1	He	1112889	5.24
U 238	238	1	He	1035162	4.95

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7301565	5.15	7475944	97.67	80	120	
Sc_45	45	2	H2	42780356	6.35	44729383	95.64	80	120	
Ge_72	72	1	He	3836981	1.94	3950352	97.13	80	120	
Ge_72	72	2	H2	12317488	2.76	13199044	93.32	80	120	
In_115	115	1	He	4462240	1.97	4664305	95.67	80	120	
In_115	115	2	H2	11490105	2.28	12147161	94.59	80	120	
Tm_169	169	1	He	4622457	0.52	4835424	95.60	80	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV 764657
Data File Name	015_ICV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:12:33-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	80.191	2.433	19724	9.06	80	100.2	90	110	
Be 9	9	2	H2	81.289	2.825	14177	9.57	80	101.6	90	110	
Na 23	23	1	He	782.643	2.369	575064	2.19	800	97.8	90	110	
Mg 24	24	1	He	774.720	2.925	289465	2.82	800	96.8	90	110	
Al 27	27	1	He	802.512	1.977	143174	1.85	800	100.3	90	110	
P 31	31	1	He	785.777	2.191	8216	1.61	800	98.2	90	110	
K 39	39	1	He	768.549	2.572	395531	2.01	800	96.1	90	110	
Ca 40	40	2	H2	817.187	8.843	3074304	15.68	800	102.1	90	110	
Ti 47	47	1	He	79.267	3.409	9323	3.47	80	99.1	90	110	
V 51	51	1	He	78.834	2.372	237341	2.23	80	98.5	90	110	
Cr 52	52	1	He	79.104	3.003	286582	2.83	80	98.9	90	110	
Mn 55	55	1	He	78.783	2.142	197625	1.93	80	98.5	90	110	
Fe 56	56	1	He	841.319	3.440	2610128	3.41	800	105.2	90	110	
Co 59	59	1	He	79.220	2.139	400656	2.33	80	99.0	90	110	
Ni 60	60	1	He	79.614	3.081	101123	2.91	80	99.5	90	110	
Cu 63	63	1	He	80.120	2.515	269727	2.36	80	100.1	90	110	
Zn 66	66	1	He	79.674	3.649	47220	1.43	80	99.6	90	110	
As 75	75	1	He	76.052	4.169	31633	1.84	80	95.1	90	110	
Se 78	78	2	H2	80.959	5.733	19250	6.80	80	101.2	90	110	
Sr 88	88	1	He	78.585	4.866	281371	2.60	80	98.2	90	110	
Mo 95	95	1	He	79.008	4.491	144662	2.24	80	98.8	90	110	
Ag 107	107	1	He	39.370	1.184	205539	2.46	40	98.4	90	110	
Cd 111	111	1	He	77.627	1.642	67102	2.17	80	97.0	90	110	
Sn 118	118	1	He	80.477	0.998	182986	2.06	80	100.6	90	110	
Sb 121	121	1	He	42.415	1.981	111231	3.00	40	106.0	90	110	
Ba 137	137	1	He	78.101	1.731	88104	2.57	80	97.6	90	110	
Ce 140	140	1	He	78.994	1.958	1077354	3.14	80	98.7	90	110	
Au 197	197	1	He	80.044	5.815	286931	2.85	80	100.1	90	110	
Tl 205	205	1	He	39.856	4.926	321801	1.95	40	99.6	90	110	
Pb206	206	1	He	79.030	5.269	221915	2.70	80	98.8	1	10000	
Pb207	207	1	He	81.442	5.661	195845	2.72	80	101.8	1	10000	
Pb 208	208	1	He	80.441	5.298	867411	2.31	80	100.6	90	110	
U 238	238	1	He	77.995	5.345	782230	2.38	80	97.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7012477	0.71	7475944	93.80	80	120	
Sc_45	45	2	H2	41162171	6.87	44729383	92.02	80	120	
Ge_72	72	1	He	3730171	2.29	3950352	94.43	80	120	
Ge_72	72	2	H2	11890032	1.15	13199044	90.08	80	120	
In_115	115	1	He	4370821	1.42	4664305	93.71	80	120	
In_115	115	2	H2	11087803	2.22	12147161	91.28	80	120	
Tm_169	169	1	He	4483223	3.11	4835424	92.72	80	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB 758340
Data File Name	016_ICB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:16:04-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.043	111.3	96	20.1	10	
Be 9	9	2	H2	0.009	78.4	2	66.1	1	
B 11	11	2	H2	4.188	10.3	4407	8.3	50	
Na 23	23	1	He	0.442	129.1	24936	2.6	50	
Mg 24	24	1	He	0.249	58.5	444	13.5	50	
Al 27	27	1	He	0.514	84.5	383	21.7	50	
P 31	31	1	He	-1.754	-73.4	55	25.7	50	
K 39	39	1	He	-3.626	-11.6	67249	1.1	50	
Ca 40	40	2	H2	0.370	162.9	35972	13.9	50	
Ti 47	47	1	He	0.023	39.5	7	17.3	5	
V 51	51	1	He	-0.100	-5.2	1184	2.2	10	
Cr 52	52	1	He	-0.001	-2490.9	3752	1.2	2	
Mn 55	55	1	He	0.010	112.5	123	25.3	1	
Fe 56	56	1	He	0.310	86.0	4857	18.4	50	
Co 59	59	1	He	0.005	86.2	43	49.8	1	
Ni 60	60	1	He	0.022	34.1	55	17.8	2	
Cu 63	63	1	He	0.028	52.9	447	12.2	2	
Zn 66	66	1	He	0.149	26.3	283	8.9	5	
As 75	75	1	He	0.015	583.5	364	10.0	2	
Se 78	78	2	H2	0.018	248.6	17	66.1	2	
Sr 88	88	1	He	0.007	106.7	213	13.0	5	
Mo 95	95	1	He	0.036	49.2	91	36.6	2	
Ag 107	107	1	He	0.005	151.7	97	45.1	1	
Cd 111	111	1	He	0.007	74.4	11	43.3	1	
Sn 118	118	1	He	0.038	57.0	864	7.1	10	
Sb 121	121	1	He	-0.151	-47.3	2740	5.7	2	
Ba 137	137	1	He	0.001	651.7	20	50.0	1	
Ce 140	140	1	He	0.007	87.6	130	64.7	5	
Gd 157	157	1	He	0.003	154.2	10	120.2	1	
Au 197	197	1	He	0.078	17.8	319	13.8	5	
Tl 205	205	1	He	0.004	172.4	111	43.7	1	
Pb206	206	1	He	0.006	117.4	130	16.8	1	
Pb207	207	1	He	0.006	50.2	103	5.6	1	
Pb 208	208	1	He	0.011	61.1	479	15.7	1	
U 238	238	1	He	0.021	43.6	223	40.1	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7240196	0.93	7475944	96.85	80	120	
Sc_45	45	2	H2	42645649	7.40	44729383	95.34	80	120	
Ge_72	72	1	He	3873124	0.47	3950352	98.05	80	120	
Ge_72	72	2	H2	12513025	2.96	13199044	94.80	80	120	
In_115	115	1	He	4554395	1.30	4664305	97.64	80	120	
In_115	115	2	H2	11671933	0.66	12147161	96.09	80	120	
Tm_169	169	1	He	4627525	2.22	4835424	95.70	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	CRI 764635
Data File Name	017LCCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:19:47-07:00
Sample Type	LLCCV
Dilution	1
Comment	LL_QSM
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	11.074	2.286	2799	7.16	10	110.7	80	120	
Be 9	9	2	H2	1.042	2.689	183	9.48	1	104.2	80	120	
B 11	11	2	H2	55.908	2.933	11959	9.82	50	111.8	80	120	
Na 23	23	1	He	82.748	12.030	86314	1.61	100	82.7	80	120	
Mg 24	24	1	He	93.427	8.443	37006	1.28	100	93.4	80	120	
Al 27	27	1	He	96.815	8.978	18412	2.54	100	96.8	80	120	
P 31	31	1	He	46.184	12.801	577	5.26	50	92.4	80	120	
K 39	39	1	He	81.023	22.395	106580	1.19	100	81.0	80	120	
Ca 40	40	2	H2	111.206	5.310	448489	13.97	100	111.2	80	120	
Ti 47	47	1	He	4.565	14.526	567	8.00	5	91.3	80	120	
V 51	51	1	He	11.049	8.805	36272	1.34	10	110.5	80	120	
Cr 52	52	1	He	4.485	9.837	20691	0.83	5	89.7	80	120	
Mn 55	55	1	He	5.746	9.268	15236	2.56	6	95.8	80	120	
Fe 56	56	1	He	103.831	9.126	341957	2.24	100	103.8	80	120	
Co 59	59	1	He	2.867	7.340	15270	1.22	3	95.6	80	120	
Ni 60	60	1	He	2.912	7.301	3916	1.29	3	97.1	80	120	
Cu 63	63	1	He	2.908	7.725	10641	1.33	3	96.9	80	120	
Zn 66	66	1	He	11.276	2.677	7129	0.19	12	94.0	80	120	
As 75	75	1	He	2.821	3.278	1569	1.94	3	94.0	80	120	
Se 78	78	2	H2	3.253	2.065	796	7.80	3	108.4	80	120	
Sr 88	88	1	He	19.278	3.885	72074	1.93	20	96.4	80	120	
Mo 95	95	1	He	3.091	4.659	5921	3.84	3	103.0	80	120	
Ag 107	107	1	He	0.944	4.518	5242	0.97	1	94.4	80	120	
Cd 111	111	1	He	1.392	7.250	1267	1.96	1.5	92.8	80	120	
Sn 118	118	1	He	9.471	7.031	23289	2.46	10	94.7	80	120	
Sb 121	121	1	He	5.680	7.727	18373	1.13	6	94.7	80	120	
Ba 137	137	1	He	1.402	6.568	1678	1.54	1.5	93.5	80	120	
Ce 140	140	1	He	1.938	6.023	27776	0.74	2	96.9	80	120	
Gd 157	157	1	He	1.007	4.733	2898	1.42	1	100.7	80	120	
Au 197	197	1	He	4.627	4.665	17228	2.66	5	92.5	80	120	
Tl 205	205	1	He	1.453	2.635	12250	2.74	1.5	96.9	80	120	
Pb206	206	1	He	1.929	6.106	5722	2.51	2	96.4	80	120	
Pb207	207	1	He	2.077	7.144	5261	4.30	2	103.8	80	120	
Pb 208	208	1	He	2.013	4.969	22852	2.06	2	100.6	80	120	
U 238	238	1	He	1.005	4.728	10460	1.31	1	100.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7402142	7.50	7475944	99.01	80	120	
Sc_45	45	2	H2	41331743	9.33	44729383	92.40	80	120	
Ge_72	72	1	He	3886825	2.45	3950352	98.39	80	120	
Ge_72	72	2	H2	12063042	5.82	13199044	91.39	80	120	
In_115	115	1	He	4598224	5.50	4664305	98.58	80	120	
In_115	115	2	H2	11214738	3.10	12147161	92.32	80	120	
Tm_169	169	1	He	4647442	3.55	4835424	96.11	80	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	CRI 764633
Data File Name	018LICV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:23:23-07:00
Sample Type	LLICV
Dilution	1
Comment	LL_ STD
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	10.215	6.156	2546	12.25	10	102.2	50	150	
Be 9	9	2	H2	0.987	9.604	170	16.48	1	98.7	50	150	
B 11	11	2	H2	49.798	4.378	10842	9.91	50	99.6	50	150	
Na 23	23	1	He	41.448	7.285	53642	4.27	50	82.9	50	150	
Mg 24	24	1	He	49.265	2.820	18938	2.89	50	98.5	50	130	
Al 27	27	1	He	50.891	3.413	9448	3.37	50	101.8	50	150	
P 31	31	1	He	42.549	2.875	518	2.53	50	85.1	50	150	
K 39	39	1	He	42.688	6.438	85925	1.48	50	85.4	50	150	
Ca 40	40	2	H2	50.326	9.753	217142	15.50	50	100.7	50	150	
Ti 47	47	1	He	5.299	8.651	634	8.90	5	106.0	50	150	
V 51	51	1	He	9.666	3.125	30719	3.19	10	96.7	50	150	
Cr 52	52	1	He	1.700	3.053	9832	2.23	2	85.0	50	150	
Mn 55	55	1	He	1.023	2.786	2689	2.50	1	102.3	50	150	
Fe 56	56	1	He	50.896	4.243	163278	4.37	50	101.8	50	150	
Co 59	59	1	He	1.003	6.939	5152	7.25	1	100.3	50	150	
Ni 60	60	1	He	2.051	7.030	2660	7.07	2	102.6	50	150	
Cu 63	63	1	He	1.963	1.214	7021	1.10	2	98.2	50	150	
Zn 66	66	1	He	5.082	1.600	3236	1.65	5	101.6	50	150	
As 75	75	1	He	1.801	11.076	1103	7.80	2	90.0	50	150	
Se 78	78	2	H2	1.889	5.253	463	7.95	2	94.5	50	150	
Sr 88	88	1	He	4.888	2.083	17956	2.18	5	97.8	50	150	
Mo 95	95	1	He	2.021	5.095	3782	5.21	2	101.0	50	150	
Ag 107	107	1	He	0.952	3.896	5075	3.95	1	95.2	50	150	
Cd 111	111	1	He	0.937	8.058	821	8.10	1	93.7	50	150	
Sn 118	118	1	He	9.884	4.049	23322	4.20	10	98.8	50	150	
Sb 121	121	1	He	1.527	8.687	6970	5.18	2	76.4	50	150	
Ba 137	137	1	He	1.045	7.049	1207	7.08	1	104.5	50	150	
Ce 140	140	1	He	1.975	3.489	27192	3.77	2	98.7	50	150	
Gd 157	157	1	He	1.063	4.438	3000	0.69	1	106.3	50	150	
Au 197	197	1	He	4.704	5.518	17186	4.15	5	94.1	50	150	
Tl 205	205	1	He	0.994	7.443	8244	7.04	1	99.4	50	150	
Pb206	206	1	He	1.050	4.557	3111	6.99	1	105.0	50	150	
Pb207	207	1	He	1.033	6.890	2612	5.63	1	103.3	50	150	
Pb 208	208	1	He	1.033	5.258	11691	6.47	1	103.3	50	150	
U 238	238	1	He	0.986	6.527	10060	3.34	1	98.6	50	150	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7092851	0.44	7475944	94.88	80	120	
Sc_45	45	2	H2	40508555	7.19	44729383	90.56	80	120	
Ge_72	72	1	He	3787580	0.24	3950352	95.88	80	120	
Ge_72	72	2	H2	11954429	2.81	13199044	90.57	80	120	
In_115	115	1	He	4407664	0.29	4664305	94.50	80	120	
In_115	115	2	H2	10906994	3.72	12147161	89.79	80	120	
Tm_169	169	1	He	4560782	4.20	4835424	94.32	80	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA 764636
Data File Name	019ICSA.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:26:57-07:00
Sample Type	ICSA
Dilution	1
Comment	ICSA+Br
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li 7	7	2	H2	0.424	4.1	180	4.7	5	
Be 9	9	2	H2	0.019	60.8	4	57.1	0.5	
B 11	11	2	H2	3.037	44.6	3961	7.4	25	
Na 23	23	1	He	95079.791	0.3	65631013	3.8	50000000	
Mg 24	24	1	He	91834.161	1.2	33584851	4.7	50000000	
Al 27	27	1	He	98214.302	1.7	17130974	3.7	50000000	
P 31	31	1	He	95343.111	0.3	968328	3.8	50000000	
K 39	39	1	He	97591.960	1.4	40964581	2.8	50000000	
Ca 40	40	2	H2	102871.793	8.6	370235424	10.9	50000000	
Ti 47	47	1	He	1985.486	0.7	228734	4.5	5000000	
V 51	51	1	He	-0.170	-5.1	919	6.5	5	
Cr 52	52	1	He	1.097	4.4	7403	2.1	1	>1/2RL
Mn 55	55	1	He	0.756	2.5	1947	1.8	0.5	>1/2RL
Fe 56	56	1	He	96908.407	1.4	294244117	5.3	50000000	
Co 59	59	1	He	0.139	5.5	706	4.4	0.5	
Ni 60	60	1	He	0.217	7.0	295	5.2	1	
Cu 63	63	1	He	-1.391	-2.9	-4252	-6.9	1	
Zn 66	66	1	He	0.405	7.5	403	6.3	2.5	
As 75	75	1	He	0.049	160.3	346	9.3	1	
Se 78	78	2	H2	0.028	92.0	18	34.1	1	
Sr 88	88	1	He	1.069	0.8	3805	2.5	2.5	
Mo 95	95	1	He	2075.985	2.7	3611643	5.0	2000000	
Ag 107	107	1	He	0.023	11.2	173	6.7	0.5	
Cd 111	111	1	He	0.276	12.3	229	12.1	0.5	
Sn 118	118	1	He	0.064	41.9	834	6.2	5	
Sb 121	121	1	He	-0.401	-1.9	1873	0.5	1	
Ba 137	137	1	He	0.058	23.0	78	17.8	0.5	
Ce 140	140	1	He	0.019	27.6	278	24.7	2.5	
Gd 157	157	1	He	0.002	73.6	7	50.0	0.5	
Au 197	197	1	He	0.015	17.3	83	14.4	2.5	
Tl 205	205	1	He	0.014	30.8	188	21.2	0.5	
Pb206	206	1	He	0.067	19.2	293	9.7	100	
Pb207	207	1	He	0.068	11.9	244	8.7	100	
Pb 208	208	1	He	0.071	3.5	1100	1.6	0.5	
U 238	238	1	He	0.004	26.1	43	20.3	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6870196	3.92	7475944	91.90	80	120	
Sc_45	45	2	H2	39915768	2.53	44729383	89.24	80	120	
Ge_72	72	1	He	3541232	2.83	3950352	89.64	80	120	
Ge_72	72	2	H2	11403705	1.46	13199044	86.40	80	120	
In_115	115	1	He	4107254	0.65	4664305	88.06	80	120	
In_115	115	2	H2	10549476	1.33	12147161	86.85	80	120	
Tm_169	169	1	He	4429863	3.08	4835424	91.61	80	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB 764637
Data File Name	020ICSB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:30:16-07:00
Sample Type	ICSB
Dilution	1
Comment	ICSAB
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	99.336	3.118	23366	7.16	100	99.3	80	120	
Be 9	9	2	H2	99.574	2.998	16615	7.05	100	99.6	80	120	
Na 23	23	1	He	97157.059	3.746	68033888	2.36	100100	97.1	1	200	
Mg 24	24	1	He	93525.511	3.364	34693328	2.26	100100	93.4	1	200	
Al 27	27	1	He	101089.595	1.863	17896571	2.48	100100	101.0	1	200	
P 31	31	1	He	97533.753	2.560	1004976	0.68	100100	97.4	1	200	
K 39	39	1	He	96071.688	0.585	40938473	2.01	100100	96.0	1	200	
Ca 40	40	2	H2	103926.758	7.395	369978272	13.27	100100	103.8	1	200	
Ti 47	47	1	He	2105.409	2.293	246055	1.57	2100	100.3	1	200	
V 51	51	1	He	100.343	3.914	299837	2.15	100	100.3	80	120	
Cr 52	52	1	He	98.115	3.062	352432	1.43	100	98.1	80	120	
Mn 55	55	1	He	99.801	2.795	248812	1.16	100	99.8	80	120	
Fe 56	56	1	He	97621.045	3.668	300558325	1.76	100100	97.5	1	200	
Co 59	59	1	He	96.083	3.074	482949	1.20	100	96.1	80	120	
Ni 60	60	1	He	94.566	2.044	119402	1.54	100	94.6	80	120	
Cu 63	63	1	He	92.492	3.181	309423	1.24	100	92.5	80	120	
Zn 66	66	1	He	92.543	3.012	52757	1.61	100	92.5	80	120	
As 75	75	1	He	97.197	2.583	38821	1.21	100	97.2	80	120	
Se 78	78	2	H2	93.547	3.270	21343	5.63	100	93.5	80	120	
Sr 88	88	1	He	103.701	2.972	357352	1.63	100	103.7	80	120	
Mo 95	95	1	He	2130.782	2.926	3754784	1.63	2100	101.5	1	200	
Ag 107	107	1	He	46.688	2.320	234923	1.61	50	93.4	80	120	
Cd 111	111	1	He	93.158	2.340	77624	1.73	100	93.2	80	120	
Sn 118	118	1	He	101.754	2.348	222829	1.67	100	101.8	80	120	
Sb 121	121	1	He	53.214	1.846	133775	1.60	50	106.4	80	120	
Ba 137	137	1	He	102.465	2.552	111410	1.95	100	102.5	80	120	
Ce 140	140	1	He	100.428	2.385	1320142	1.83	100	100.4	80	120	
Gd 157	157	1	He	99.529	3.553	274996	1.78	100	99.5	80	120	
Au 197	197	1	He	92.032	4.682	328616	2.34	100	92.0	80	120	
Tl 205	205	1	He	46.816	3.637	376527	1.90	50	93.6	80	120	
Pb206	206	1	He	96.096	3.775	268740	0.96	100	96.1	1	200	
Pb207	207	1	He	94.379	4.765	226023	1.67	100	94.4	1	200	
Pb 208	208	1	He	95.562	4.960	1026121	1.80	100	95.6	80	120	
U 238	238	1	He	98.048	4.122	979453	1.32	100	98.0	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6972281	2.07	7475944	93.26	80	120	
Sc_45	45	2	H2	39429641	6.26	44729383	88.15	80	120	
Ge_72	72	1	He	3588992	1.41	3950352	90.85	80	120	
Ge_72	72	2	H2	11408335	2.45	13199044	86.43	80	120	
In_115	115	1	He	4213742	0.72	4664305	90.34	80	120	
In_115	115	2	H2	10597194	1.04	12147161	87.24	80	120	
Tm_169	169	1	He	4464506	3.29	4835424	92.33	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	xBLANK
Data File Name	021_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:33:37-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.006	-603.2	78	12.4	10	
Be 9	9	2	H2	0.004	75.5	1	50.0	1	
Na 23	23	1	He	16.215	22.5	33903	5.5	50	
Mg 24	24	1	He	5.511	24.6	2298	19.5	50	
Al 27	27	1	He	5.768	24.6	1255	17.8	50	
P 31	31	1	He	5.872	49.1	127	21.0	50	
K 39	39	1	He	15.125	51.8	70372	3.1	50	
Ca 40	40	2	H2	5.152	23.4	51084	15.2	50	
Ti 47	47	1	He	0.074	43.3	12	28.9	5	
V 51	51	1	He	-0.046	-34.5	1259	2.0	10	
Cr 52	52	1	He	0.064	28.0	3722	1.3	2	
Mn 55	55	1	He	0.003	225.1	97	20.0	1	
Fe 56	56	1	He	6.989	31.8	24365	25.5	50	
Co 59	59	1	He	0.002	74.5	25	20.4	1	
Ni 60	60	1	He	0.008	93.8	34	25.6	2	
Cu 63	63	1	He	0.032	28.8	431	5.1	2	
Zn 66	66	1	He	0.021	119.5	193	8.4	5	
As 75	75	1	He	-0.055	-104.5	315	9.4	2	
Se 78	78	2	H2	0.027	72.6	18	25.8	2	
Sr 88	88	1	He	0.010	124.0	211	21.4	5	
Mo 95	95	1	He	0.850	23.2	1548	24.4	2	
Ag 107	107	1	He	0.001	217.2	68	15.8	1	
Cd 111	111	1	He	0.005	135.9	9	70.5	1	
Sn 118	118	1	He	0.047	29.6	814	4.1	10	
Sb 121	121	1	He	-0.433	-9.9	1831	5.3	2	
Ba 137	137	1	He	-0.003	-396.3	13	109.0	1	
Ce 140	140	1	He	0.004	85.3	81	51.4	5	
Gd 157	157	1	He	0.005	72.1	16	65.5	1	
Au 197	197	1	He	0.062	27.2	238	26.7	5	
Tl 205	205	1	He	0.013	36.9	173	23.6	1	
Pb206	206	1	He	0.012	52.8	134	15.1	1	
Pb207	207	1	He	0.003	353.5	88	30.7	1	
Pb 208	208	1	He	0.017	22.5	501	8.3	1	
U 238	238	1	He	0.012	24.7	121	25.0	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6748966	1.93	7475944	90.28	80	120	
Sc_45	45	2	H2	40029863	6.62	44729383	89.49	80	120	
Ge_72	72	1	He	3644453	2.19	3950352	92.26	80	120	
Ge_72	72	2	H2	12039410	3.67	13199044	91.21	80	120	
In_115	115	1	He	4186069	0.57	4664305	89.75	80	120	
In_115	115	2	H2	10936688	0.27	12147161	90.03	80	120	
Tm_169	169	1	He	4248519	2.71	4835424	87.86	80	120	

Sample Table

Sample Name	xempty injection
Data File Name	022_ICV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:37:11-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.211	-0.211	-3.28	44	13.05		2000	2000	
Be 9	9	2	H2	-0.001	-0.001	-298.51	0	173.21		2000	2000	
B 11	11	2	H2	-13.566	-13.566	-2.93	2360	4.80		10000	10000	
Na 23	23	1	He	-17.186	-17.186	-2.79	17640	9.16		100000	100000	
Mg 24	24	1	He	1.291	1.291	79.73	1253	50.69		100000	100000	
Al 27	27	1	He	11.982	11.982	16.03	3635	18.36		100000	100000	
P 31	31	1	He	6.838	6.838	27.92	212	8.39		100000	100000	
K 39	39	1	He	-67.473	-67.473	-6.21	56666	1.91		100000	100000	
Ca 40	40	2	H2	-7.022	-7.022	-0.07	10500	8.11		100000	100000	
Ti 47	47	1	He	0.055	0.055	39.77	15	27.15		2000	2000	
V 51	51	1	He	-0.431	-0.431	-2.96	231	18.87		2000	2000	
Cr 52	52	1	He	-0.858	-0.858	-5.56	842	22.90		2000	2000	
Mn 55	55	1	He	-0.016	-0.016	-10.19	80	6.61		22000	22000	
Fe 56	56	1	He	2.015	2.015	66.32	15218	45.62		100000	100000	
Co 59	59	1	He	-0.002	-0.002	-69.59	16	54.49		2000	2000	
Ni 60	60	1	He	-0.013	-0.013	-24.62	12	44.10		2000	2000	
Cu 63	63	1	He	-0.041	-0.041	-7.65	304	2.34		2000	2000	
Zn 66	66	1	He	-0.109	-0.109	-35.27	171	16.89		2000	2000	
As 75	75	1	He	-0.114	-0.114	-92.41	423	11.96		2000	2000	
Se 78	78	2	H2	0.006	0.006	388.90	20	46.14		2000	2000	
Sr 88	88	1	He	-0.040	-0.040	-2.89	54	7.41		2000	2000	
Mo 95	95	1	He	0.159	0.159	39.64	442	31.13		2000	2000	
Ag 107	107	1	He	-0.003	-0.003	-78.36	78	17.32		500	500	
Cd 111	111	1	He	-0.002	-0.002	-212.88	5	89.21		2000	2000	
Sn 118	118	1	He	-0.252	-0.252	-10.02	259	29.62		2000	2000	
Sb 121	121	1	He	-0.988	-0.988	-5.36	740	23.93		2000	2000	
Ba 137	137	1	He	-0.007	-0.007	-39.46	16	24.76		2000	2000	
Ce 140	140	1	He	0.000	0.000	-1112.04	48	59.34		2000	2000	
Gd 157	157	1	He	0.002	0.002	108.48	11	75.52		2000	2000	
Au 197	197	1	He	0.014	0.014	60.51	119	41.04		2000	2000	
Tl 205	205	1	He	-0.003	-0.003	-22.07	84	12.06		500	500	
Pb206	206	1	He	-0.006	-0.006	-14.86	136	5.12		12000	12000	
Pb207	207	1	He	0.004	0.004	71.76	141	3.61		12000	12000	
Pb 208	208	1	He	0.003	0.003	54.25	571	2.36		12000	12000	
U 238	238	1	He	0.003	0.003	38.82	54	33.72		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	10530264	6.47	7475944	140.86	80	120	ISTD Failed
Sc_45	45	2	H2	59949811	8.28	44729383	134.03	80	120	ISTD Failed
Ge_72	72	1	He	5320396	5.59	3950352	134.68	80	120	ISTD Failed
Ge_72	72	2	H2	17879129	14.05	13199044	135.46	80	120	ISTD Failed
In_115	115	1	He	6569627	3.71	4664305	140.85	80	120	ISTD Failed
In_115	115	2	H2	17779287	7.64	12147161	146.37	80	120	ISTD Failed
Tm_169	169	1	He	6735765	3.70	4835424	139.30	80	120	ISTD Failed

Sample Report

Sample Table

Sample Name	xempty injection
Data File Name	023_ICB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:40:46-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.090	0.090	288.35	59	27.18		2000	2000	
Be 9	9	2	H2	0.002	0.002	261.54	0	86.60		2000	2000	
B 11	11	2	H2	5.792	5.792	386.96	2386	12.16		10000	10000	
Na 23	23	1	He	-9.721	-9.721	-207.76	15257	15.09		100000	100000	
Mg 24	24	1	He	-0.641	-0.641	-24.34	101	35.98		100000	100000	
Al 27	27	1	He	5.491	5.491	16.79	1650	58.38		100000	100000	
P 31	31	1	He	8.324	8.324	139.23	148	21.75		100000	100000	
K 39	39	1	He	15.362	15.362	1124.81	58510	2.34		100000	100000	
Ca 40	40	2	H2	-4.939	-4.939	-49.21	8796	28.29		100000	100000	
Ti 47	47	1	He	-0.005	-0.005	-526.59	6	88.19		2000	2000	
V 51	51	1	He	-0.423	-0.423	-11.22	167	22.84		2000	2000	
Cr 52	52	1	He	-0.804	-0.804	-20.81	707	19.47		2000	2000	
Mn 55	55	1	He	-0.008	-0.008	-290.93	63	25.52		22000	22000	
Fe 56	56	1	He	-0.407	-0.407	-141.18	2405	26.09		100000	100000	
Co 59	59	1	He	-0.003	-0.003	-14.45	3	43.30		2000	2000	
Ni 60	60	1	He	-0.012	-0.012	-44.34	11	92.49		2000	2000	
Cu 63	63	1	He	-0.016	-0.016	-304.05	305	36.74		2000	2000	
Zn 66	66	1	He	-0.074	-0.074	-117.36	159	46.73		2000	2000	
As 75	75	1	He	-0.112	-0.112	-48.81	385	59.60		2000	2000	
Se 78	78	2	H2	0.049	0.049	90.12	16	40.98		2000	2000	
Sr 88	88	1	He	-0.044	-0.044	-0.66	31	64.01		2000	2000	
Mo 95	95	1	He	0.038	0.038	51.69	134	78.50		2000	2000	
Ag 107	107	1	He	-0.003	-0.003	-61.55	69	58.54		500	500	
Cd 111	111	1	He	-0.003	-0.003	-85.71	4	100.00		2000	2000	
Sn 118	118	1	He	-0.256	-0.256	-8.87	207	50.39		2000	2000	
Sb 121	121	1	He	-0.943	-0.943	-22.31	554	15.13		2000	2000	
Ba 137	137	1	He	-0.010	-0.010	-52.82	13	86.60		2000	2000	
Ce 140	140	1	He	-0.001	-0.001	-44.89	23	89.20		2000	2000	
Gd 157	157	1	He	-0.001	-0.001	-67.89	1	173.21		2000	2000	
Au 197	197	1	He	0.014	0.014	151.04	67	27.84		2000	2000	
Tl 205	205	1	He	-0.001	-0.001	-1282.83	72	25.42		500	500	
Pb206	206	1	He	-0.006	-0.006	-151.40	142	73.16		12000	12000	
Pb207	207	1	He	0.000	0.000	-1597.81	117	63.18		12000	12000	
Pb 208	208	1	He	0.000	0.000	-2350.44	470	60.34		12000	12000	
U 238	238	1	He	0.001	0.001	52.07	24	75.09		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	9740646	63.53	7475944	130.29	80	120	ISTD Failed
Sc_45	45	2	H2	37234380	91.60	44729383	83.24	80	120	
Ge_72	72	1	He	4956658	62.55	3950352	125.47	80	120	ISTD Failed
Ge_72	72	2	H2	11243959	92.29	13199044	85.19	80	120	
In_115	115	1	He	6340674	63.43	4664305	135.94	80	120	ISTD Failed
In_115	115	2	H2	10613377	91.99	12147161	87.37	80	120	
Tm_169	169	1	He	6301379	63.10	4835424	130.32	80	120	ISTD Failed

Linear Range Sample (LRS) Report

Sample Table

Sample Name	LRA 764643
Data File Name	024_LR1.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:44:21-07:00
Sample Type	CCV HL1
Dilution	1
Comment	LRA
ISTD Ref File Name	013CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	2269.380	0.417	532488	6.39	0.9	252153.3	200000	200000	>+/-10%
Be 9	9	2	H2	2284.152	0.635	381523	6.98	0.9	253794.7	200000	200000	>+/-10%
Na 23	23	1	He	9878.807	1.379	7049296	1.19	0.9	1097645.2	1000000	1000000	
Mg 24	24	1	He	9888.878	1.995	3726532	1.50	0.9	1098764.3	1000000	1000000	
Al 27	27	1	He	10810.866	2.334	1943938	2.28	0.9	1201207.3	1000000	1000000	
P 31	31	1	He	9971.178	2.911	104417	1.87	0.9	1107908.7	1000000	1000000	
K 39	39	1	He	9732.045	3.189	4271057	1.90	0.9	1081338.3	1000000	1000000	
Ca 40	40	2	H2	11626.319	7.144	41470164	13.49	0.9	1291813.2	1000000	1000000	>+/-10%
Ti 47	47	1	He	2005.409	2.671	238035	2.07	0.9	222823.2	200000	200000	
V 51	51	1	He	2017.612	2.987	6096443	2.03	0.9	224179.1	200000	200000	
Cr 52	52	1	He	2003.762	3.955	7238973	3.03	0.9	222640.2	200000	200000	
Mn 55	55	1	He	21783.539	2.504	55140752	1.28	0.9	2420393.2	2200000	2200000	
Fe 56	56	1	He	10221.210	2.798	31970283	1.56	0.9	1135690.0	1000000	1000000	
Co 59	59	1	He	1990.174	1.969	10161295	1.10	0.9	221130.5	200000	200000	
Ni 60	60	1	He	2032.566	2.426	2605921	1.74	0.9	225840.6	200000	200000	
Cu 63	63	1	He	2001.728	2.418	6795607	1.78	0.9	222414.2	200000	200000	
Zn 66	66	1	He	1979.970	2.527	1174696	1.93	0.9	219996.7	200000	200000	
As 75	75	1	He	1947.335	1.632	805470	1.42	0.9	216370.5	200000	200000	
Se 78	78	2	H2	2183.765	2.453	513196	5.15	0.9	242640.6	200000	200000	
Sr 88	88	1	He	2030.445	1.140	7303689	2.55	0.9	225605.0	200000	200000	
Mo 95	95	1	He	2063.687	1.810	3797246	2.18	0.9	229298.6	200000	200000	
Ag 107	107	1	He	492.816	1.774	2563343	2.20	0.9	54757.3	50000	50000	
Cd 111	111	1	He	1990.799	0.680	1715059	1.45	0.9	221199.9	200000	200000	
Sn 118	118	1	He	2057.486	1.011	4644494	1.81	0.9	228609.6	200000	200000	
Sb 121	121	1	He	2211.474	1.405	5626047	2.04	0.9	245719.4	200000	200000	>+/-10%
Ba 137	137	1	He	8036.618	0.167	9033291	0.87	0.9	892957.5	800000	800000	
Ce 140	140	1	He	1978.578	1.657	26892658	2.48	0.9	219842.0	200000	200000	
Gd 157	157	1	He	2024.944	2.686	5636521	3.50	0.9	224993.8	200000	200000	
Au 197	197	1	He	1981.881	0.847	7129254	0.98	0.9	220209.0	200000	200000	
Tl 205	205	1	He	492.312	1.604	3988182	2.67	0.9	54701.3	50000	50000	
Pb 208	208	1	He	12136.883	0.512	131277757	0.59	0.9	1348542.5	1200000	1200000	
U 238	238	1	He	2040.064	1.212	20533040	1.98	0.9	226673.8	200000	200000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7080730	1.24	7475944	94.71	80	120	
Sc_45	45	2	H2	39461741	6.35	44729383	88.22	80	120	
Ge_72	72	1	He	3746805	1.77	3950352	94.85	80	120	
Ge_72	72	2	H2	11758664	3.10	13199044	89.09	80	120	
In_115	115	1	He	4356215	0.83	4664305	93.39	80	120	
In_115	115	2	H2	10910941	0.79	12147161	89.82	80	120	
Tm_169	169	1	He	4494123	1.09	4835424	92.94	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	xBLANK
Data File Name	025_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:47:07-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.453	12.8	190	12.6	10	
Be 9	9	2	H2	0.095	25.6	17	27.4	1	
Na 23	23	1	He	6.955	29.5	27556	2.8	50	
Mg 24	24	1	He	1.271	72.4	774	39.9	50	
Al 27	27	1	He	1.950	59.7	598	30.5	50	
P 31	31	1	He	-0.318	-753.8	65	34.1	50	
K 39	39	1	He	4.447	100.6	65791	0.8	50	
Ca 40	40	2	H2	1.669	38.4	39067	12.4	50	
Ti 47	47	1	He	0.129	51.3	18	38.5	5	
V 51	51	1	He	-0.150	-30.6	953	11.8	10	
Cr 52	52	1	He	0.244	2.2	4327	2.0	2	
Mn 55	55	1	He	1.330	23.6	3277	20.5	1	>+/-RL
Fe 56	56	1	He	1.321	79.1	7468	38.7	50	
Co 59	59	1	He	0.115	33.6	575	30.0	1	
Ni 60	60	1	He	0.107	4.4	154	2.2	2	
Cu 63	63	1	He	0.265	21.9	1177	13.4	2	
Zn 66	66	1	He	0.178	10.4	288	2.1	5	
As 75	75	1	He	0.081	32.8	376	1.4	2	
Se 78	78	2	H2	0.228	4.3	67	5.4	2	
Sr 88	88	1	He	0.113	18.8	582	12.7	5	
Mo 95	95	1	He	0.697	31.2	1287	29.0	2	
Ag 107	107	1	He	0.027	16.2	209	9.1	1	
Cd 111	111	1	He	0.107	20.8	97	17.4	1	
Sn 118	118	1	He	1.737	22.6	4681	16.3	10	
Sb 121	121	1	He	-0.362	-13.0	2099	3.3	2	
Ba 137	137	1	He	0.472	23.1	550	19.7	1	
Ce 140	140	1	He	0.106	23.7	1485	20.4	5	
Gd 157	157	1	He	0.111	28.0	310	27.3	1	
Au 197	197	1	He	0.505	21.5	1838	20.7	5	
Tl 205	205	1	He	0.056	23.3	528	19.7	1	
Pb206	206	1	He	0.846	22.7	2481	21.4	1	
Pb207	207	1	He	0.851	20.4	2131	19.2	1	
Pb 208	208	1	He	0.859	22.5	9606	21.2	1	>+/-0.5RL
U 238	238	1	He	0.236	32.4	2369	31.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6729440	2.40	7475944	90.01	80	120	
Sc_45	45	2	H2	40691205	6.50	44729383	90.97	80	120	
Ge_72	72	1	He	3708828	3.55	3950352	93.89	80	120	
Ge_72	72	2	H2	12101673	2.62	13199044	91.69	80	120	
In_115	115	1	He	4389050	2.98	4664305	94.10	80	120	
In_115	115	2	H2	11206793	1.68	12147161	92.26	80	120	
Tm_169	169	1	He	4479852	0.82	4835424	92.65	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	XBLANK
Data File Name	026_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:50:49-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.178	40.8	122	10.5	10	
Be 9	9	2	H2	0.010	54.9	2	43.3	1	
Na 23	23	1	He	3.956	4.2	26910	1.6	50	
Mg 24	24	1	He	0.169	102.2	405	17.2	50	
Al 27	27	1	He	0.533	56.1	379	15.5	50	
P 31	31	1	He	-0.413	-645.3	67	40.4	50	
K 39	39	1	He	-0.324	-448.3	67259	1.6	50	
Ca 40	40	2	H2	2.502	25.3	41745	10.3	50	
Ti 47	47	1	He	0.024	282.5	7	121.2	5	
V 51	51	1	He	-0.197	-18.8	864	13.8	10	
Cr 52	52	1	He	0.140	19.4	4185	3.5	2	
Mn 55	55	1	He	0.258	98.0	753	86.9	1	
Fe 56	56	1	He	0.165	67.4	4299	9.2	50	
Co 59	59	1	He	0.018	140.3	111	117.8	1	
Ni 60	60	1	He	0.017	85.2	47	40.2	2	
Cu 63	63	1	He	0.094	17.1	664	9.4	2	
Zn 66	66	1	He	0.045	147.4	213	16.7	5	
As 75	75	1	He	0.010	877.6	352	8.4	2	
Se 78	78	2	H2	0.056	44.0	25	26.3	2	
Sr 88	88	1	He	0.028	65.9	285	23.4	5	
Mo 95	95	1	He	0.127	4.7	257	4.5	2	
Ag 107	107	1	He	0.004	81.0	87	21.4	1	
Cd 111	111	1	He	0.014	140.5	17	104.8	1	
Sn 118	118	1	He	0.767	6.0	2468	5.4	10	
Sb 121	121	1	He	-0.515	-6.4	1692	3.4	2	
Ba 137	137	1	He	0.051	161.0	76	124.0	1	
Ce 140	140	1	He	0.014	131.8	230	113.9	5	
Gd 157	157	1	He	0.013	111.9	40	106.4	1	
Au 197	197	1	He	0.079	18.4	321	16.9	5	
Tl 205	205	1	He	0.004	129.6	117	39.6	1	
Pb206	206	1	He	0.117	103.9	448	78.5	1	
Pb207	207	1	He	0.118	105.8	379	81.9	1	
Pb 208	208	1	He	0.121	90.9	1696	72.1	1	
U 238	238	1	He	0.037	68.5	393	67.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7087510	1.17	7475944	94.80	80	120	
Sc_45	45	2	H2	40386523	7.13	44729383	90.29	80	120	
Ge_72	72	1	He	3768611	1.89	3950352	95.40	80	120	
Ge_72	72	2	H2	11965159	4.08	13199044	90.65	80	120	
In_115	115	1	He	4346382	1.71	4664305	93.18	80	120	
In_115	115	2	H2	11117137	0.65	12147161	91.52	80	120	
Tm_169	169	1	He	4592364	0.81	4835424	94.97	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	XBLANK
Data File Name	027_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:54:26-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.129	25.7	112	10.1	10	
Be 9	9	2	H2	0.023	21.2	4	17.6	1	
Na 23	23	1	He	3.249	16.0	26438	3.8	50	
Mg 24	24	1	He	0.101	45.6	379	2.9	50	
Al 27	27	1	He	0.569	45.8	385	10.9	50	
P 31	31	1	He	-0.683	-169.7	65	18.1	50	
K 39	39	1	He	-6.150	-16.8	64811	3.1	50	
Ca 40	40	2	H2	2.013	34.1	40465	11.7	50	
Ti 47	47	1	He	-0.004	-1284.9	3	173.2	5	
V 51	51	1	He	-0.200	-4.8	856	3.4	10	
Cr 52	52	1	He	0.130	8.4	4151	2.5	2	
Mn 55	55	1	He	0.087	5.3	315	1.5	1	
Fe 56	56	1	He	0.087	113.9	4061	9.9	50	
Co 59	59	1	He	0.000	486.9	19	26.0	1	
Ni 60	60	1	He	-0.004	-236.3	21	53.3	2	
Cu 63	63	1	He	0.070	28.2	581	9.4	2	
Zn 66	66	1	He	0.016	228.1	198	9.3	5	
As 75	75	1	He	-0.022	-50.3	343	3.8	2	
Se 78	78	2	H2	0.052	31.5	24	14.4	2	
Sr 88	88	1	He	0.008	54.5	215	9.0	5	
Mo 95	95	1	He	0.047	13.9	110	12.1	2	
Ag 107	107	1	He	-0.002	-149.7	57	23.5	1	
Cd 111	111	1	He	0.000	-1256.1	4	132.3	1	
Sn 118	118	1	He	0.458	11.1	1807	8.4	10	
Sb 121	121	1	He	-0.587	-10.3	1537	5.4	2	
Ba 137	137	1	He	0.009	77.8	28	27.7	1	
Ce 140	140	1	He	0.001	162.5	42	31.9	5	
Gd 157	157	1	He	0.000	269.4	3	100.1	1	
Au 197	197	1	He	0.030	10.2	140	7.1	5	
Tl 205	205	1	He	-0.001	-563.0	76	39.8	1	
Pb206	206	1	He	0.027	15.8	188	7.4	1	
Pb207	207	1	He	0.011	24.7	112	6.9	1	
Pb 208	208	1	He	0.024	26.4	614	11.7	1	
U 238	238	1	He	0.008	16.8	93	16.4	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7094724	2.40	7475944	94.90	80	120	
Sc_45	45	2	H2	40834184	5.80	44729383	91.29	80	120	
Ge_72	72	1	He	3815599	2.44	3950352	96.59	80	120	
Ge_72	72	2	H2	12057115	2.70	13199044	91.35	80	120	
In_115	115	1	He	4437695	5.03	4664305	95.14	80	120	
In_115	115	2	H2	11129772	0.91	12147161	91.62	80	120	
Tm_169	169	1	He	4550214	1.11	4835424	94.10	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	XBLANK
Data File Name	028_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T10:58:02-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.066	9.1	95	7.7	10	
Be 9	9	2	H2	0.009	58.6	2	41.7	1	
Na 23	23	1	He	4.231	29.9	25990	2.1	50	
Mg 24	24	1	He	0.258	11.3	420	3.9	50	
Al 27	27	1	He	0.268	100.0	317	15.8	50	
P 31	31	1	He	-1.275	-77.1	56	16.4	50	
K 39	39	1	He	-0.172	-2600.4	64556	1.5	50	
Ca 40	40	2	H2	1.592	19.2	38180	12.1	50	
Ti 47	47	1	He	0.009	494.2	5	107.9	5	
V 51	51	1	He	-0.169	-11.7	912	7.6	10	
Cr 52	52	1	He	0.122	20.4	3950	1.8	2	
Mn 55	55	1	He	0.070	13.3	261	7.5	1	
Fe 56	56	1	He	0.045	54.4	3760	0.8	50	
Co 59	59	1	He	-0.001	-89.4	13	32.9	1	
Ni 60	60	1	He	0.016	120.7	44	54.5	2	
Cu 63	63	1	He	0.052	24.9	501	9.6	2	
Zn 66	66	1	He	0.025	110.1	191	9.5	5	
As 75	75	1	He	-0.033	-84.3	318	3.4	2	
Se 78	78	2	H2	0.034	54.9	19	19.6	2	
Sr 88	88	1	He	0.014	42.8	222	11.5	5	
Mo 95	95	1	He	0.032	12.3	78	10.8	2	
Ag 107	107	1	He	-0.001	-120.2	60	11.1	1	
Cd 111	111	1	He	0.000	324.6	5	24.7	1	
Sn 118	118	1	He	0.273	10.5	1349	5.9	10	
Sb 121	121	1	He	-0.618	-9.3	1426	10.2	2	
Ba 137	137	1	He	-0.001	-40.8	17	0.0	1	
Ce 140	140	1	He	0.000	150370.7	33	62.4	5	
Gd 157	157	1	He	0.000	2493.8	2	173.2	1	
Au 197	197	1	He	0.017	31.7	87	21.4	5	
Tl 205	205	1	He	-0.002	-84.8	59	26.1	1	
Pb206	206	1	He	0.008	123.4	128	21.9	1	
Pb207	207	1	He	0.013	90.3	113	23.0	1	
Pb 208	208	1	He	0.017	21.1	527	7.2	1	
U 238	238	1	He	0.004	28.8	42	22.8	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6797937	1.37	7475944	90.93	80	120	
Sc_45	45	2	H2	40080215	9.18	44729383	89.61	80	120	
Ge_72	72	1	He	3580926	2.06	3950352	90.65	80	120	
Ge_72	72	2	H2	11706844	3.58	13199044	88.69	80	120	
In_115	115	1	He	4329951	2.23	4664305	92.83	80	120	
In_115	115	2	H2	10841693	3.52	12147161	89.25	80	120	
Tm_169	169	1	He	4408498	1.46	4835424	91.17	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	029_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:01:38-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	104.158	4.133	25809	10.43	100	104.2	90	110	
Be 9	9	2	H2	103.772	3.535	18240	9.88	100	103.8	90	110	
Na 23	23	1	He	5097.803	3.413	3557400	2.43	5100	100.0	90	110	
Mg 24	24	1	He	5094.426	1.849	1871850	0.83	5100	99.9	90	110	
Al 27	27	1	He	5173.436	1.921	907036	0.85	5100	101.4	90	110	
P 31	31	1	He	5078.601	1.814	51891	0.90	5000	101.6	90	110	
K 39	39	1	He	5189.313	3.054	2251229	2.18	5100	101.8	90	110	
Ca 40	40	2	H2	5336.421	8.267	20031487	14.46	5100	104.6	90	110	
Ti 47	47	1	He	205.395	2.877	23771	1.80	200	102.7	90	110	
V 51	51	1	He	103.568	1.705	306485	0.68	100	103.6	90	110	
Cr 52	52	1	He	102.880	2.014	365815	0.96	100	102.9	90	110	
Mn 55	55	1	He	103.609	2.555	255796	1.50	100	103.6	90	110	
Fe 56	56	1	He	5150.938	2.982	15710083	1.92	5100	101.0	90	110	
Co 59	59	1	He	103.535	1.985	515422	1.33	100	103.5	90	110	
Ni 60	60	1	He	103.942	1.864	129952	0.79	100	103.9	90	110	
Cu 63	63	1	He	104.084	2.068	344824	1.10	100	104.1	90	110	
Zn 66	66	1	He	101.536	4.429	59707	1.59	100	101.5	90	110	
As 75	75	1	He	101.824	4.623	41943	1.75	100	101.8	90	110	
Se 78	78	2	H2	104.821	6.437	25655	8.52	100	104.8	90	110	
Sr 88	88	1	He	101.200	3.488	359892	0.56	100	101.2	90	110	
Mo 95	95	1	He	203.741	3.923	370493	1.01	200	101.9	90	110	
Ag 107	107	1	He	50.607	2.506	262722	1.00	50	101.2	90	110	
Cd 111	111	1	He	100.548	2.817	86438	1.39	100	100.5	90	110	
Sn 118	118	1	He	101.943	2.573	230330	1.23	100	101.9	90	110	
Sb 121	121	1	He	49.916	3.604	129631	2.04	50	99.8	90	110	
Ba 137	137	1	He	102.995	3.860	115525	2.34	100	103.0	90	110	
Ce 140	140	1	He	102.549	2.529	1390828	1.26	100	102.5	90	110	
Gd 157	157	1	He	101.514	1.155	283201	1.15	100	101.5	90	110	
Au 197	197	1	He	102.698	0.675	370383	1.98	100	102.7	90	110	
Tl 205	205	1	He	51.129	1.005	415211	1.27	50	102.3	90	110	
Pb206	206	1	He	102.139	1.446	288428	0.91	100	102.1	1	10000	
Pb207	207	1	He	101.681	1.444	245937	0.81	100	101.7	1	10000	
Pb 208	208	1	He	102.214	1.747	1108508	0.83	100	102.2	90	110	
U 238	238	1	He	102.982	2.627	1038698	0.70	100	103.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6903455	1.07	7475944	92.34	80	120	
Sc_45	45	2	H2	41475965	6.29	44729383	92.73	80	120	
Ge_72	72	1	He	3705239	2.88	3950352	93.80	80	120	
Ge_72	72	2	H2	12234395	2.31	13199044	92.69	80	120	
In_115	115	1	He	4348114	1.50	4664305	93.22	80	120	
In_115	115	2	H2	11268288	2.36	12147161	92.76	80	120	
Tm_169	169	1	He	4505540	2.27	4835424	93.18	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	030_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:05:06-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.025	67.8	86	7.0	10	
Be 9	9	2	H2	0.009	121.6	2	95.8	1	
Na 23	23	1	He	1.242	135.0	24073	3.0	50	
Mg 24	24	1	He	0.394	35.9	473	13.6	50	
Al 27	27	1	He	0.525	35.0	363	8.5	50	
P 31	31	1	He	0.200	843.5	71	24.5	50	
K 39	39	1	He	0.241	2384.0	65064	1.4	50	
Ca 40	40	2	H2	0.343	127.8	34063	11.1	50	
Ti 47	47	1	He	0.026	149.7	7	69.3	5	
V 51	51	1	He	-0.185	-12.5	867	5.8	10	
Cr 52	52	1	He	0.034	37.0	3663	1.8	2	
Mn 55	55	1	He	0.034	44.7	173	22.1	1	
Fe 56	56	1	He	0.460	24.4	5033	6.7	50	
Co 59	59	1	He	0.007	25.0	55	18.8	1	
Ni 60	60	1	He	0.014	27.7	42	9.5	2	
Cu 63	63	1	He	0.030	15.8	429	5.5	2	
Zn 66	66	1	He	0.003	1762.8	185	12.6	5	
As 75	75	1	He	-0.046	-75.9	324	6.7	2	
Se 78	78	2	H2	0.042	83.4	22	39.8	2	
Sr 88	88	1	He	0.006	80.1	199	10.2	5	
Mo 95	95	1	He	0.082	34.9	171	29.6	2	
Ag 107	107	1	He	0.005	51.7	90	13.4	1	
Cd 111	111	1	He	0.011	131.4	13	90.4	1	
Sn 118	118	1	He	0.160	2.8	1080	2.7	10	
Sb 121	121	1	He	-0.392	-11.7	1967	4.5	2	
Ba 137	137	1	He	0.001	931.5	19	71.3	1	
Ce 140	140	1	He	0.007	37.6	124	28.6	5	
Gd 157	157	1	He	0.007	70.2	21	63.8	1	
Au 197	197	1	He	0.073	26.6	286	24.0	5	
Tl 205	205	1	He	0.001	115.2	87	11.5	1	
Pb206	206	1	He	0.008	169.2	128	28.7	1	
Pb207	207	1	He	0.016	50.8	121	16.1	1	
Pb 208	208	1	He	0.021	5.3	562	1.8	1	
U 238	238	1	He	0.017	10.8	174	11.0	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6835913	2.83	7475944	91.44	80	120	
Sc_45	45	2	H2	40555585	6.79	44729383	90.67	80	120	
Ge_72	72	1	He	3711086	3.40	3950352	93.94	80	120	
Ge_72	72	2	H2	11881837	1.58	13199044	90.02	80	120	
In_115	115	1	He	4266596	1.83	4664305	91.47	80	120	
In_115	115	2	H2	11054357	0.40	12147161	91.00	80	120	
Tm_169	169	1	He	4411352	1.10	4835424	91.23	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	031_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:08:42-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	102.086	2.855	23855	7.79	100	102.1	90	110	
Be 9	9	2	H2	101.308	1.998	16794	7.32	100	101.3	90	110	
Na 23	23	1	He	5000.699	3.349	3373395	1.88	5100	98.1	90	110	
Mg 24	24	1	He	5070.406	2.812	1801701	4.39	5100	99.4	90	110	
Al 27	27	1	He	5085.065	0.797	862022	2.35	5100	99.7	90	110	
P 31	31	1	He	5043.390	1.773	49829	3.32	5000	100.9	90	110	
K 39	39	1	He	5066.735	3.036	2126000	1.34	5100	99.3	90	110	
Ca 40	40	2	H2	5199.445	9.812	18427345	15.44	5100	101.9	90	110	
Ti 47	47	1	He	205.510	1.748	23001	3.34	200	102.8	90	110	
V 51	51	1	He	102.133	1.045	292222	1.94	100	102.1	90	110	
Cr 52	52	1	He	101.265	0.851	348205	2.45	100	101.3	90	110	
Mn 55	55	1	He	102.519	0.083	244718	1.64	100	102.5	90	110	
Fe 56	56	1	He	5133.043	2.162	15140700	3.81	5100	100.6	90	110	
Co 59	59	1	He	101.734	0.433	489657	2.07	100	101.7	90	110	
Ni 60	60	1	He	102.874	1.280	124365	2.92	100	102.9	90	110	
Cu 63	63	1	He	103.461	0.500	331397	1.93	100	103.5	90	110	
Zn 66	66	1	He	101.746	3.587	57561	2.22	100	101.7	90	110	
As 75	75	1	He	99.621	2.939	39489	1.23	100	99.6	90	110	
Se 78	78	2	H2	102.667	3.703	23726	5.51	100	102.7	90	110	
Sr 88	88	1	He	101.083	2.870	345806	1.54	100	101.1	90	110	
Mo 95	95	1	He	202.309	2.944	353916	1.36	200	101.2	90	110	
Ag 107	107	1	He	49.537	3.568	249044	3.31	50	99.1	90	110	
Cd 111	111	1	He	99.454	2.560	82811	3.02	100	99.5	90	110	
Sn 118	118	1	He	99.263	1.956	217223	2.04	100	99.3	90	110	
Sb 121	121	1	He	49.255	1.224	123935	1.31	50	98.5	90	110	
Ba 137	137	1	He	101.215	2.339	109966	2.47	100	101.2	90	110	
Ce 140	140	1	He	100.652	1.743	1322120	2.30	100	100.7	90	110	
Gd 157	157	1	He	100.628	3.490	269634	1.98	100	100.6	90	110	
Au 197	197	1	He	101.718	3.357	352308	1.76	100	101.7	90	110	
Tl 205	205	1	He	50.304	3.483	392387	2.60	50	100.6	90	110	
Pb206	206	1	He	102.176	3.953	277131	2.60	100	102.2	1	10000	
Pb207	207	1	He	101.633	3.299	236116	1.68	100	101.6	1	10000	
Pb 208	208	1	He	102.292	3.860	1065553	2.42	100	102.3	90	110	
U 238	238	1	He	101.663	4.337	985039	3.10	100	101.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6673447	1.66	7475944	89.27	80	120	
Sc_45	45	2	H2	39150868	5.71	44729383	87.53	80	120	
Ge_72	72	1	He	3563713	3.02	3950352	90.21	80	120	
Ge_72	72	2	H2	11556589	1.83	13199044	87.56	80	120	
In_115	115	1	He	4210100	1.07	4664305	90.26	80	120	
In_115	115	2	H2	10779773	2.79	12147161	88.74	80	120	
Tm_169	169	1	He	4328560	2.17	4835424	89.52	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	032_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:12:09-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.005	384.3	81	9.6	10	
Be 9	9	2	H2	0.009	14.0	2	15.7	1	
Na 23	23	1	He	-0.090	-886.3	23774	1.1	50	
Mg 24	24	1	He	0.311	73.4	452	17.2	50	
Al 27	27	1	He	0.567	30.6	380	6.4	50	
P 31	31	1	He	0.093	1978.9	72	26.5	50	
K 39	39	1	He	-3.420	-147.4	65211	1.7	50	
Ca 40	40	2	H2	0.596	74.1	34811	11.0	50	
Ti 47	47	1	He	0.008	122.0	5	24.7	5	
V 51	51	1	He	-0.198	-4.6	852	5.1	10	
Cr 52	52	1	He	0.010	335.7	3672	2.0	2	
Mn 55	55	1	He	0.027	24.3	161	11.9	1	
Fe 56	56	1	He	0.505	31.7	5298	7.4	50	
Co 59	59	1	He	0.008	27.9	57	19.2	1	
Ni 60	60	1	He	-0.002	-355.3	23	35.7	2	
Cu 63	63	1	He	0.022	66.1	414	10.6	2	
Zn 66	66	1	He	-0.030	-198.1	165	22.4	5	
As 75	75	1	He	-0.030	-133.6	328	6.9	2	
Se 78	78	2	H2	0.019	109.1	16	33.7	2	
Sr 88	88	1	He	0.011	62.8	216	12.9	5	
Mo 95	95	1	He	0.080	20.5	166	18.0	2	
Ag 107	107	1	He	0.005	48.4	90	13.4	1	
Cd 111	111	1	He	0.008	112.9	11	71.3	1	
Sn 118	118	1	He	0.105	39.4	969	8.3	10	
Sb 121	121	1	He	-0.319	-6.4	2179	2.9	2	
Ba 137	137	1	He	0.001	139.9	19	10.2	1	
Ce 140	140	1	He	0.008	6.6	142	7.2	5	
Gd 157	157	1	He	0.007	43.0	21	39.7	1	
Au 197	197	1	He	0.079	17.3	311	16.0	5	
Tl 205	205	1	He	0.004	75.8	108	18.6	1	
Pb206	206	1	He	0.004	63.5	119	7.1	1	
Pb207	207	1	He	0.014	60.2	119	16.4	1	
Pb 208	208	1	He	0.016	18.4	526	4.9	1	
U 238	238	1	He	0.017	7.7	180	8.5	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7014124	1.97	7475944	93.82	80	120	
Sc_45	45	2	H2	40343965	6.39	44729383	90.20	80	120	
Ge_72	72	1	He	3681426	1.99	3950352	93.19	80	120	
Ge_72	72	2	H2	11865275	3.35	13199044	89.89	80	120	
In_115	115	1	He	4324185	2.11	4664305	92.71	80	120	
In_115	115	2	H2	11044030	3.26	12147161	90.92	80	120	
Tm_169	169	1	He	4480866	1.67	4835424	92.67	80	120	

Method Blank (MB) Report

Sample Table

Sample Name	MB 320-134515/1-A
Data File Name	033_PB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:15:45-07:00
Sample Type	MB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.028	75.0	89	13.1	10	
Be 9	9	2	H2	0.026	48.0	5	50.0	1	
Na 23	23	1	He	3.546	9.7	25395	1.4	50	
Mg 24	24	1	He	2.022	11.7	1052	7.0	50	
Al 27	27	1	He	4.039	2.7	963	0.8	50	
P 31	31	1	He	1.094	173.1	79	22.9	50	
K 39	39	1	He	7.972	43.4	67582	1.1	50	
Ca 40	40	2	H2	4.502	17.6	50377	13.4	50	
Ti 47	47	1	He	0.227	37.7	29	32.2	5	
V 51	51	1	He	-0.033	-62.7	1298	5.7	10	
Cr 52	52	1	He	0.477	12.7	5156	5.2	2	
Mn 55	55	1	He	0.136	15.2	419	12.7	1	
Fe 56	56	1	He	1.582	2.7	8333	0.4	50	
Co 59	59	1	He	0.033	23.6	177	20.3	1	
Ni 60	60	1	He	0.211	8.7	283	8.8	2	
Cu 63	63	1	He	0.111	6.2	687	3.0	2	
Zn 66	66	1	He	1.718	10.8	1147	7.2	5	
As 75	75	1	He	0.069	153.7	357	10.7	2	
Se 78	78	2	H2	0.059	73.7	27	37.6	2	
Sr 88	88	1	He	0.023	12.9	251	5.6	5	
Mo 95	95	1	He	0.116	13.1	223	9.8	2	
Ag 107	107	1	He	0.005	62.0	89	18.5	1	
Cd 111	111	1	He	0.029	15.8	29	14.5	1	
Sn 118	118	1	He	0.512	4.9	1832	1.7	10	
Sb 121	121	1	He	-0.009	-945.6	2884	7.5	2	
Ba 137	137	1	He	0.029	42.7	49	27.5	1	
Ce 140	140	1	He	0.019	17.8	281	15.4	5	
Gd 157	157	1	He	0.020	17.3	54	14.1	1	
Au 197	197	1	He	0.029	43.8	127	31.9	5	
Tl 205	205	1	He	0.007	6.0	127	0.0	1	
Pb206	206	1	He	0.085	24.9	331	18.3	1	
Pb207	207	1	He	0.086	26.1	277	15.9	1	
Pb 208	208	1	He	0.087	6.9	1228	3.4	1	
U 238	238	1	He	0.025	4.4	243	2.4	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6762041	1.13	7475944	90.45	80	120	
Sc_45	45	2	H2	41416099	7.65	44729383	92.59	80	120	
Ge_72	72	1	He	3570737	2.48	3950352	90.39	80	120	
Ge_72	72	2	H2	12431532	3.63	13199044	94.19	80	120	
In_115	115	1	He	4208918	1.44	4664305	90.24	80	120	
In_115	115	2	H2	11127660	0.48	12147161	91.61	80	120	
Tm_169	169	1	He	4274227	2.37	4835424	88.39	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 320-134515/2-A
Data File Name	034_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:19:19-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	201.877	201.877	2.239	48177	9.07	200	100.9	88	112	
Be 9	9	2	H2	203.626	203.626	3.014	34545	9.92	200	101.8	88	112	
Na 23	23	1	He	984.915	984.915	0.589	714242	0.75	1000	98.5	88	112	
Mg 24	24	1	He	984.412	984.412	1.205	366040	1.27	1000	98.4	88	112	
Al 27	27	1	He	1014.283	1014.283	2.961	180043	2.67	1000	101.4	88	112	
P 31	31	1	He	969.603	969.603	0.598	10075	0.50	1000	97.0	88	112	
K 39	39	1	He	970.569	970.569	1.997	479754	1.53	1000	97.1	88	112	
Ca 40	40	2	H2	1048.699	1048.699	8.585	3827584	15.34	1000	104.9	88	112	
Ti 47	47	1	He	201.213	201.213	3.137	23549	2.73	200	100.6	88	112	
V 51	51	1	He	200.571	200.571	1.822	598840	1.51	200	100.3	88	112	
Cr 52	52	1	He	200.813	200.813	2.626	718596	2.41	200	100.4	88	112	
Mn 55	55	1	He	199.297	199.297	2.703	497476	2.32	200	99.6	88	112	
Fe 56	56	1	He	1085.748	1085.748	1.438	3351976	1.68	1000	108.6	88	112	
Co 59	59	1	He	203.641	203.641	3.013	1025048	2.61	200	101.8	88	112	
Ni 60	60	1	He	205.004	205.004	2.334	259147	2.02	200	102.5	88	112	
Cu 63	63	1	He	203.513	203.513	2.027	681461	1.76	200	101.8	88	112	
Zn 66	66	1	He	208.924	208.924	1.836	121415	1.94	200	104.5	88	112	
As 75	75	1	He	199.704	199.704	2.844	81102	2.90	200	99.9	88	112	
Se 78	78	2	H2	205.004	205.004	4.258	48756	7.31	200	102.5	88	112	
Sr 88	88	1	He	203.422	203.422	2.143	715755	2.17	200	101.7	88	112	
Mo 95	95	1	He	212.496	212.496	1.462	382446	1.49	200	106.2	88	112	
Ag 107	107	1	He	50.470	50.470	4.352	263183	2.52	50	100.9	88	112	
Cd 111	111	1	He	199.227	199.227	3.694	172057	2.24	200	99.6	88	112	
Sn 118	118	1	He	202.572	202.572	3.272	459055	1.29	200	101.3	88	112	
Sb 121	121	1	He	216.469	216.469	4.649	554712	3.22	200	108.2	88	112	
Ba 137	137	1	He	201.603	201.603	3.894	227168	2.08	200	100.8	88	112	
Ce 140	140	1	He	204.413	204.413	7.527	2783831	5.97	200	102.2	88	112	
Gd 157	157	1	He	199.066	199.066	0.496	561507	3.13	200	99.5	88	112	
Au 197	197	1	He	199.647	199.647	0.632	727924	3.27	200	99.8	88	112	
Tl 205	205	1	He	50.132	50.132	0.594	411613	3.08	50	100.3	88	112	
Pb206	206	1	He	199.979	199.979	0.844	570763	1.83	200	100.0	88	112	
Pb207	207	1	He	206.109	206.109	0.896	503875	2.01	200	103.1	88	112	
Pb 208	208	1	He	204.550	204.550	1.027	2242187	1.72	200	102.3	88	112	
U 238	238	1	He	204.544	204.544	0.574	2086182	2.63	200	102.3	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6980206	0.59	7475944	93.37	80	120	
Sc_45	45	2	H2	40035840	6.88	44729383	89.51	80	120	
Ge_72	72	1	He	3664444	0.18	3950352	92.76	80	120	
Ge_72	72	2	H2	11891594	3.07	13199044	90.09	80	120	
In_115	115	1	He	4368924	2.08	4664305	93.67	80	120	
In_115	115	2	H2	11143907	1.18	12147161	91.74	80	120	
Tm_169	169	1	He	4554329	2.65	4835424	94.19	80	120	

Method Blank (MB) Report

Sample Table

Sample Name	MB 320-134513/1-A
Data File Name	035_PB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:22:49-07:00
Sample Type	MB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.090	-28.7	59	12.9	10	
Be 9	9	2	H2	0.013	75.4	3	65.8	1	
Na 23	23	1	He	-15.311	-2.0	13124	2.4	50	
Mg 24	24	1	He	0.013	523.6	343	6.6	50	
Al 27	27	1	He	0.378	34.3	349	7.6	50	
P 31	31	1	He	-0.146	-2409.0	70	52.9	50	
K 39	39	1	He	-14.020	-17.7	60999	0.7	50	
Ca 40	40	2	H2	-3.383	-2.2	20446	8.4	50	
Ti 47	47	1	He	0.075	11.9	13	9.1	5	
V 51	51	1	He	-0.384	-5.0	297	18.3	10	
Cr 52	52	1	He	-0.687	-2.0	1187	3.2	2	
Mn 55	55	1	He	0.049	44.9	216	24.3	1	
Fe 56	56	1	He	0.067	29.1	3969	1.7	50	
Co 59	59	1	He	0.016	38.6	101	30.9	1	
Ni 60	60	1	He	0.036	9.2	71	7.1	2	
Cu 63	63	1	He	0.033	48.0	453	11.2	2	
Zn 66	66	1	He	0.517	7.0	492	6.5	5	
As 75	75	1	He	0.004	1284.3	348	7.3	2	
Se 78	78	2	H2	0.009	119.5	14	18.9	2	
Sr 88	88	1	He	-0.003	-173.3	169	10.7	5	
Mo 95	95	1	He	0.071	30.5	153	28.3	2	
Ag 107	107	1	He	0.001	149.3	73	7.9	1	
Cd 111	111	1	He	0.015	78.3	18	57.7	1	
Sn 118	118	1	He	-0.160	-12.8	401	11.2	10	
Sb 121	121	1	He	-0.982	-2.8	539	12.9	2	
Ba 137	137	1	He	0.016	27.7	38	13.5	1	
Ce 140	140	1	He	0.016	42.3	270	36.1	5	
Gd 157	157	1	He	0.018	17.6	54	18.7	1	
Au 197	197	1	He	0.104	21.5	410	18.8	5	
Tl 205	205	1	He	0.011	53.6	171	28.4	1	
Pb206	206	1	He	0.019	28.2	166	7.6	1	
Pb207	207	1	He	0.034	20.2	170	8.5	1	
Pb 208	208	1	He	0.027	20.2	651	9.3	1	
U 238	238	1	He	0.035	30.7	367	29.8	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7049534	1.17	7475944	94.30	80	120	
Sc_45	45	2	H2	40643547	7.64	44729383	90.87	80	120	
Ge_72	72	1	He	3741324	2.28	3950352	94.71	80	120	
Ge_72	72	2	H2	12046862	1.60	13199044	91.27	80	120	
In_115	115	1	He	4611868	1.19	4664305	98.88	80	120	
In_115	115	2	H2	11279774	1.89	12147161	92.86	80	120	
Tm_169	169	1	He	4559107	2.61	4835424	94.29	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 320-134513/2-A
Data File Name	036_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:26:23-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	200.239	200.239	1.376	49285	9.03	200	100.1	88	112	
Be 9	9	2	H2	204.369	204.369	2.070	35753	9.57	200	102.2	88	112	
Na 23	23	1	He	961.215	961.215	1.334	719856	2.39	1000	96.1	88	112	
Mg 24	24	1	He	959.219	959.219	2.498	368018	2.80	1000	95.9	88	112	
Al 27	27	1	He	989.355	989.355	2.244	181239	3.19	1000	98.9	88	112	
P 31	31	1	He	973.676	973.676	2.329	10443	4.26	1000	97.4	88	112	
K 39	39	1	He	935.521	935.521	1.255	479658	2.36	1000	93.6	88	112	
Ca 40	40	2	H2	1057.118	1057.118	9.978	3985027	17.63	1000	105.7	88	112	
Ti 47	47	1	He	197.727	197.727	3.316	23877	3.22	200	98.9	88	112	
V 51	51	1	He	196.870	196.870	1.594	606571	2.56	200	98.4	88	112	
Cr 52	52	1	He	196.901	196.901	1.904	727139	2.66	200	98.5	88	112	
Mn 55	55	1	He	194.698	194.698	1.449	501574	3.07	200	97.3	88	112	
Fe 56	56	1	He	1026.474	1026.474	0.943	3269771	1.29	1000	102.6	88	112	
Co 59	59	1	He	198.231	198.231	1.698	1029821	3.27	200	99.1	88	112	
Ni 60	60	1	He	200.157	200.157	0.870	261094	2.12	200	100.1	88	112	
Cu 63	63	1	He	199.872	199.872	1.904	690665	3.02	200	99.9	88	112	
Zn 66	66	1	He	201.308	201.308	1.939	120787	3.54	200	100.7	88	112	
As 75	75	1	He	192.543	192.543	0.931	80732	2.50	200	96.3	88	112	
Se 78	78	2	H2	203.047	203.047	3.891	49358	7.35	200	101.5	88	112	
Sr 88	88	1	He	199.364	199.364	0.473	724114	2.09	200	99.7	88	112	
Mo 95	95	1	He	208.277	208.277	1.253	386943	2.29	200	104.1	88	112	
Ag 107	107	1	He	48.448	48.448	1.404	265784	2.75	50	96.9	88	112	
Cd 111	111	1	He	189.505	189.505	0.467	172140	1.96	200	94.8	88	112	
Sn 118	118	1	He	194.969	194.969	0.966	464769	2.44	200	97.5	88	112	
Sb 121	121	1	He	208.995	208.995	1.356	563492	2.66	200	104.5	88	112	
Ba 137	137	1	He	193.159	193.159	1.630	228935	2.18	200	96.6	88	112	
Ce 140	140	1	He	191.451	191.451	1.758	2743611	2.68	200	95.7	88	112	
Gd 157	157	1	He	196.003	196.003	2.083	558445	2.83	200	98.0	88	112	
Au 197	197	1	He	199.911	199.911	2.943	736171	3.24	200	100.0	88	112	
Tl 205	205	1	He	50.003	50.003	3.144	414722	3.89	50	100.0	88	112	
Pb206	206	1	He	199.175	199.175	3.338	574238	3.16	200	99.6	88	112	
Pb207	207	1	He	205.978	205.978	2.378	508671	2.30	200	103.0	88	112	
Pb 208	208	1	He	203.511	203.511	2.950	2253426	2.55	200	101.8	88	112	
U 238	238	1	He	209.164	209.164	4.891	2154213	4.09	200	104.6	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7202844	2.23	7475944	96.35	80	120	
Sc_45	45	2	H2	41303228	7.64	44729383	92.34	80	120	
Ge_72	72	1	He	3782505	1.61	3950352	95.75	80	120	
Ge_72	72	2	H2	12155150	3.95	13199044	92.09	80	120	
In_115	115	1	He	4593210	1.80	4664305	98.48	80	120	
In_115	115	2	H2	11265101	0.78	12147161	92.74	80	120	
Tm_169	169	1	He	4601113	2.58	4835424	95.15	80	120	

Method Blank (MB) Report

Sample Table

Sample Name	MB 320-134324/1-A
Data File Name	037_PB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:29:52-07:00
Sample Type	MB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.096	-38.8	54	9.3	10	
Be 9	9	2	H2	0.008	48.5	2	45.8	1	
Na 23	23	1	He	-13.820	-4.2	13798	0.3	50	
Mg 24	24	1	He	0.772	13.9	611	4.7	50	
Al 27	27	1	He	-0.243	-52.4	231	12.1	50	
P 31	31	1	He	-1.443	-134.9	55	33.8	50	
K 39	39	1	He	-10.597	-45.0	60799	0.8	50	
Ca 40	40	2	H2	-5.005	-2.7	13690	4.2	50	
Ti 47	47	1	He	0.014	280.7	5	86.6	5	
V 51	51	1	He	-0.396	-2.1	255	12.4	10	
Cr 52	52	1	He	-0.629	-0.1	1360	2.9	2	
Mn 55	55	1	He	0.145	21.9	446	17.0	1	
Fe 56	56	1	He	0.467	20.8	5073	3.7	50	
Co 59	59	1	He	0.011	36.1	73	25.3	1	
Ni 60	60	1	He	0.040	38.9	75	24.9	2	
Cu 63	63	1	He	0.126	8.7	748	5.5	2	
Zn 66	66	1	He	0.043	86.4	207	9.9	5	
As 75	75	1	He	-0.126	-27.0	289	5.2	2	
Se 78	78	2	H2	0.005	63.1	12	4.7	2	
Sr 88	88	1	He	-0.023	-22.2	97	17.7	5	
Mo 95	95	1	He	0.072	15.6	151	12.7	2	
Ag 107	107	1	He	0.002	571.2	73	63.6	1	
Cd 111	111	1	He	0.015	32.2	17	24.0	1	
Sn 118	118	1	He	-0.141	-4.2	422	2.0	10	
Sb 121	121	1	He	-1.020	-4.1	413	25.3	2	>+/-RL
Ba 137	137	1	He	0.014	77.5	33	36.1	1	
Ce 140	140	1	He	0.010	16.8	172	12.6	5	
Gd 157	157	1	He	0.013	71.1	38	66.8	1	
Au 197	197	1	He	0.115	15.3	426	13.9	5	
Tl 205	205	1	He	0.010	37.2	157	18.9	1	
Pb206	206	1	He	0.026	39.1	176	12.9	1	
Pb207	207	1	He	0.024	11.2	138	7.8	1	
Pb 208	208	1	He	0.037	24.6	718	11.2	1	
U 238	238	1	He	0.044	42.2	430	40.3	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6864057	2.82	7475944	91.82	80	120	
Sc_45	45	2	H2	38427255	7.59	44729383	85.91	80	120	
Ge_72	72	1	He	3683607	0.58	3950352	93.25	80	120	
Ge_72	72	2	H2	11397339	2.27	13199044	86.35	80	120	
In_115	115	1	He	4355548	1.41	4664305	93.38	80	120	
In_115	115	2	H2	10657884	2.02	12147161	87.74	80	120	
Tm_169	169	1	He	4324506	3.26	4835424	89.43	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 320-134324/2-A
Data File Name	038_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:33:27-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	199.053	199.053	1.085	49734	8.81	200	99.5	88	112	
Be 9	9	2	H2	204.017	204.017	2.170	36250	10.25	200	102.0	88	112	
Na 23	23	1	He	994.438	994.438	3.241	684707	2.45	1000	99.4	88	112	
Mg 24	24	1	He	988.758	988.758	3.404	349184	2.72	1000	98.9	88	112	
Al 27	27	1	He	1000.309	1000.309	3.713	168653	3.03	1000	100.0	88	112	
P 31	31	1	He	994.531	994.531	4.653	9813	4.01	1000	99.5	88	112	
K 39	39	1	He	990.273	990.273	3.988	463633	2.76	1000	99.0	88	112	
Ca 40	40	2	H2	1046.721	1046.721	8.503	4003696	16.06	1000	104.7	88	112	
Ti 47	47	1	He	201.001	201.001	4.156	22343	3.49	200	100.5	88	112	
V 51	51	1	He	201.059	201.059	4.440	570129	3.75	200	100.5	88	112	
Cr 52	52	1	He	202.695	202.695	3.983	688871	3.30	200	101.3	88	112	
Mn 55	55	1	He	197.818	197.818	3.882	468999	3.20	200	98.9	88	112	
Fe 56	56	1	He	1055.707	1055.707	4.431	3095418	3.80	1000	105.6	88	112	
Co 59	59	1	He	203.931	203.931	4.014	974984	3.33	200	102.0	88	112	
Ni 60	60	1	He	202.852	202.852	4.359	243547	3.68	200	101.4	88	112	
Cu 63	63	1	He	204.123	204.123	3.695	649183	3.01	200	102.1	88	112	
Zn 66	66	1	He	196.915	196.915	8.672	111987	2.97	200	98.5	88	112	
As 75	75	1	He	192.550	192.550	8.435	76547	3.44	200	96.3	88	112	
Se 78	78	2	H2	193.883	193.883	4.334	47673	7.53	200	96.9	88	112	
Sr 88	88	1	He	195.061	195.061	8.278	671819	3.48	200	97.5	88	112	
Mo 95	95	1	He	206.888	206.888	8.087	364455	2.77	200	103.4	88	112	
Ag 107	107	1	He	50.363	50.363	2.481	249628	3.62	50	100.7	88	112	
Cd 111	111	1	He	197.077	197.077	2.482	161764	3.80	200	98.5	88	112	
Sn 118	118	1	He	199.841	199.841	1.469	430404	2.88	200	99.9	88	112	
Sb 121	121	1	He	214.660	214.660	2.160	522869	3.48	200	107.3	88	112	
Ba 137	137	1	He	196.393	196.393	1.527	210327	2.85	200	98.2	88	112	
Ce 140	140	1	He	199.404	199.404	4.191	2582568	5.54	200	99.7	88	112	
Gd 157	157	1	He	204.086	204.086	1.590	528002	3.41	200	102.0	88	112	
Au 197	197	1	He	206.950	206.950	0.978	691956	2.40	200	103.5	88	112	
Tl 205	205	1	He	50.763	50.763	0.758	382234	2.37	50	101.5	88	112	
Pb206	206	1	He	203.138	203.138	0.736	531791	1.94	200	101.6	88	112	
Pb207	207	1	He	209.368	209.368	1.446	469520	2.95	200	104.7	88	112	
Pb 208	208	1	He	208.169	208.169	0.788	2093142	2.29	200	104.1	88	112	
U 238	238	1	He	209.628	209.628	1.694	1961192	3.43	200	104.8	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6630528	0.69	7475944	88.69	80	120	
Sc_45	45	2	H2	41940916	8.12	44729383	93.77	80	120	
Ge_72	72	1	He	3597251	5.61	3950352	91.06	80	120	
Ge_72	72	2	H2	12293437	3.24	13199044	93.14	80	120	
In_115	115	1	He	4149706	1.43	4664305	88.97	80	120	
In_115	115	2	H2	11258270	1.16	12147161	92.68	80	120	
Tm_169	169	1	He	4176813	1.89	4835424	86.38	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	039_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:36:55-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	107.455	1.903	27453	8.54	100	107.5	90	110	
Be 9	9	2	H2	106.930	0.652	19393	9.08	100	106.9	90	110	
Na 23	23	1	He	4996.904	1.070	3675982	3.17	5100	98.0	90	110	
Mg 24	24	1	He	5051.895	3.249	1955805	3.24	5100	99.1	90	110	
Al 27	27	1	He	5088.460	0.871	940246	2.90	5100	99.8	90	110	
P 31	31	1	He	5097.866	0.366	54893	2.63	5000	102.0	90	110	
K 39	39	1	He	5030.531	0.723	2302136	2.68	5100	98.6	90	110	
Ca 40	40	2	H2	5554.663	6.288	21554807	15.61	5100	108.9	90	110	
Ti 47	47	1	He	199.973	1.331	24397	3.66	200	100.0	90	110	
V 51	51	1	He	102.226	1.266	318862	3.39	100	102.2	90	110	
Cr 52	52	1	He	102.278	1.168	383312	3.09	100	102.3	90	110	
Mn 55	55	1	He	102.881	1.730	267772	4.21	100	102.9	90	110	
Fe 56	56	1	He	5186.918	2.982	16682046	5.56	5100	101.7	90	110	
Co 59	59	1	He	102.164	0.882	536086	3.61	100	102.2	90	110	
Ni 60	60	1	He	102.388	0.410	134911	2.82	100	102.4	90	110	
Cu 63	63	1	He	102.185	0.479	356818	3.17	100	102.2	90	110	
Zn 66	66	1	He	101.262	4.839	62577	5.02	100	101.3	90	110	
As 75	75	1	He	99.760	3.106	43190	3.06	100	99.8	90	110	
Se 78	78	2	H2	107.912	3.649	26971	6.91	100	107.9	90	110	
Sr 88	88	1	He	100.064	3.171	373872	3.08	100	100.1	90	110	
Mo 95	95	1	He	202.111	3.693	386192	3.86	200	101.1	90	110	
Ag 107	107	1	He	50.172	1.392	271211	3.86	50	100.3	90	110	
Cd 111	111	1	He	100.157	1.385	89660	4.01	100	100.2	90	110	
Sn 118	118	1	He	101.156	1.766	237993	4.12	100	101.2	90	110	
Sb 121	121	1	He	49.964	1.298	135096	3.00	50	99.9	90	110	
Ba 137	137	1	He	101.418	1.295	118421	1.73	100	101.4	90	110	
Ce 140	140	1	He	101.230	0.898	1429303	2.90	100	101.2	90	110	
Gd 157	157	1	He	100.667	1.552	291499	3.89	100	100.7	90	110	
Au 197	197	1	He	100.344	2.314	375478	3.05	100	100.3	90	110	
Tl 205	205	1	He	50.236	2.919	423242	2.76	50	100.5	90	110	
Pb206	206	1	He	102.463	1.504	300346	3.98	100	102.5	1	10000	
Pb207	207	1	He	102.130	1.879	256534	5.54	100	102.1	1	10000	
Pb 208	208	1	He	102.434	1.782	1153268	4.34	100	102.4	90	110	
U 238	238	1	He	101.331	1.415	1061229	4.40	100	101.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7274791	2.85	7475944	97.31	80	120	
Sc_45	45	2	H2	42860696	9.19	44729383	95.82	80	120	
Ge_72	72	1	He	3890434	0.97	3950352	98.48	80	120	
Ge_72	72	2	H2	12495130	3.26	13199044	94.67	80	120	
In_115	115	1	He	4525644	2.83	4664305	97.03	80	120	
In_115	115	2	H2	11583163	3.97	12147161	95.36	80	120	
Tm_169	169	1	He	4677679	4.96	4835424	96.74	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	040_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:40:23-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.002	988.9	84	11.7	10	
Be 9	9	2	H2	0.007	58.5	2	45.8	1	
Na 23	23	1	He	0.322	297.0	24338	2.5	50	
Mg 24	24	1	He	0.364	32.3	478	8.9	50	
Al 27	27	1	He	0.297	64.6	336	10.2	50	
P 31	31	1	He	-0.756	-224.4	64	28.1	50	
K 39	39	1	He	-3.566	-25.2	65901	0.2	50	
Ca 40	40	2	H2	0.549	108.3	36215	13.0	50	
Ti 47	47	1	He	0.019	91.4	6	33.3	5	
V 51	51	1	He	-0.195	-8.5	870	6.1	10	
Cr 52	52	1	He	0.032	77.3	3794	2.0	2	
Mn 55	55	1	He	0.009	25.5	117	4.9	1	
Fe 56	56	1	He	0.417	27.3	5088	6.7	50	
Co 59	59	1	He	0.008	26.1	61	18.0	1	
Ni 60	60	1	He	0.014	13.8	43	5.3	2	
Cu 63	63	1	He	0.027	23.3	435	5.2	2	
Zn 66	66	1	He	0.019	148.6	202	7.9	5	
As 75	75	1	He	-0.057	-53.2	332	3.8	2	
Se 78	78	2	H2	0.043	67.1	23	29.4	2	
Sr 88	88	1	He	0.003	225.8	197	12.4	5	
Mo 95	95	1	He	0.061	11.9	138	10.9	2	
Ag 107	107	1	He	0.004	105.0	89	24.1	1	
Cd 111	111	1	He	0.003	37.0	7	15.7	1	
Sn 118	118	1	He	0.109	56.6	1011	11.8	10	
Sb 121	121	1	He	-0.378	-20.2	2096	8.1	2	
Ba 137	137	1	He	0.009	70.6	29	26.6	1	
Ce 140	140	1	He	0.006	36.3	114	24.8	5	
Gd 157	157	1	He	0.011	45.5	33	43.6	1	
Au 197	197	1	He	0.092	11.9	368	13.2	5	
Tl 205	205	1	He	0.003	191.0	104	43.6	1	
Pb206	206	1	He	0.014	65.4	149	14.4	1	
Pb207	207	1	He	0.004	161.1	97	15.8	1	
Pb 208	208	1	He	0.016	39.8	529	14.1	1	
U 238	238	1	He	0.021	13.9	219	15.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7092452	0.36	7475944	94.87	80	120	
Sc_45	45	2	H2	42143319	6.78	44729383	94.22	80	120	
Ge_72	72	1	He	3853383	1.00	3950352	97.55	80	120	
Ge_72	72	2	H2	12357701	3.94	13199044	93.63	80	120	
In_115	115	1	He	4472391	2.51	4664305	95.89	80	120	
In_115	115	2	H2	11625605	3.18	12147161	95.71	80	120	
Tm_169	169	1	He	4571165	2.47	4835424	94.53	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	041_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:43:58-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	101.130	1.436	24455	8.84	100	101.1	90	110	
Be 9	9	2	H2	101.710	1.035	17451	8.98	100	101.7	90	110	
Na 23	23	1	He	5003.409	1.948	3530086	3.22	5100	98.1	90	110	
Mg 24	24	1	He	4992.547	1.747	1854268	3.12	5100	97.9	90	110	
Al 27	27	1	He	5029.720	2.302	891439	3.67	5100	98.6	90	110	
P 31	31	1	He	5016.023	2.968	51811	4.22	5000	100.3	90	110	
K 39	39	1	He	5102.470	4.094	2239119	5.31	5100	100.0	90	110	
Ca 40	40	2	H2	5221.035	8.285	19170760	16.49	5100	102.4	90	110	
Ti 47	47	1	He	202.243	3.692	23666	5.06	200	101.1	90	110	
V 51	51	1	He	101.246	3.450	302930	4.80	100	101.2	90	110	
Cr 52	52	1	He	100.822	3.796	362518	5.13	100	100.8	90	110	
Mn 55	55	1	He	101.644	3.179	253709	4.54	100	101.6	90	110	
Fe 56	56	1	He	5096.488	3.764	15716287	5.10	5100	99.9	90	110	
Co 59	59	1	He	101.440	3.499	510526	4.86	100	101.4	90	110	
Ni 60	60	1	He	102.429	3.424	129464	4.74	100	102.4	90	110	
Cu 63	63	1	He	102.199	3.731	342314	5.10	100	102.2	90	110	
Zn 66	66	1	He	102.044	4.429	59788	4.69	100	102.0	90	110	
As 75	75	1	He	100.769	3.272	41363	3.53	100	100.8	90	110	
Se 78	78	2	H2	102.833	3.504	24744	6.64	100	102.8	90	110	
Sr 88	88	1	He	101.604	4.630	359949	4.79	100	101.6	90	110	
Mo 95	95	1	He	202.174	4.709	366275	4.90	200	101.1	90	110	
Ag 107	107	1	He	48.386	2.567	258373	4.56	50	96.8	90	110	
Cd 111	111	1	He	96.499	2.506	85330	4.58	100	96.5	90	110	
Sn 118	118	1	He	97.511	2.324	226639	4.39	100	97.5	90	110	
Sb 121	121	1	He	48.147	2.274	128730	4.33	50	96.3	90	110	
Ba 137	137	1	He	98.505	2.448	113667	4.67	100	98.5	90	110	
Ce 140	140	1	He	97.906	2.657	1365882	4.91	100	97.9	90	110	
Gd 157	157	1	He	99.626	1.585	278719	3.96	100	99.6	90	110	
Au 197	197	1	He	100.243	3.123	362579	5.34	100	100.2	90	110	
Tl 205	205	1	He	49.826	1.403	405754	3.77	50	99.7	90	110	
Pb206	206	1	He	100.373	2.186	284277	4.51	100	100.4	1	10000	
Pb207	207	1	He	100.384	1.232	243488	3.67	100	100.4	1	10000	
Pb 208	208	1	He	100.905	1.993	1097570	4.39	100	100.9	90	110	
U 238	238	1	He	101.589	2.434	1027893	4.79	100	101.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6976130	1.37	7475944	93.31	80	120	
Sc_45	45	2	H2	40526301	8.08	44729383	90.60	80	120	
Ge_72	72	1	He	3688527	0.80	3950352	93.37	80	120	
Ge_72	72	2	H2	12030243	3.18	13199044	91.14	80	120	
In_115	115	1	He	4469813	2.24	4664305	95.83	80	120	
In_115	115	2	H2	10972982	2.04	12147161	90.33	80	120	
Tm_169	169	1	He	4516398	2.44	4835424	93.40	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	042_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:47:25-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.004	-1130.6	80	17.4	10	
Be 9	9	2	H2	0.011	43.1	2	44.6	1	
Na 23	23	1	He	1.878	145.4	25065	8.0	50	
Mg 24	24	1	He	1.928	152.2	1056	104.1	50	
Al 27	27	1	He	1.855	119.0	609	65.0	50	
P 31	31	1	He	1.397	337.3	85	57.6	50	
K 39	39	1	He	-1.311	-318.5	65861	2.8	50	
Ca 40	40	2	H2	0.471	108.1	34735	12.8	50	
Ti 47	47	1	He	0.014	474.2	5	142.0	5	
V 51	51	1	He	-0.167	-13.4	941	7.4	10	
Cr 52	52	1	He	-0.010	-677.0	3586	6.1	2	
Mn 55	55	1	He	0.097	147.2	335	107.0	1	
Fe 56	56	1	He	1.616	135.2	8732	77.9	50	
Co 59	59	1	He	0.033	143.7	184	129.9	1	
Ni 60	60	1	He	0.040	125.4	76	84.4	2	
Cu 63	63	1	He	0.051	103.8	511	35.3	2	
Zn 66	66	1	He	-0.008	-925.0	180	26.3	5	
As 75	75	1	He	-0.013	-453.3	340	9.9	2	
Se 78	78	2	H2	0.019	219.9	17	64.2	2	
Sr 88	88	1	He	0.034	142.1	304	59.3	5	
Mo 95	95	1	He	0.091	88.2	191	79.6	2	
Ag 107	107	1	He	0.010	147.9	119	66.4	1	
Cd 111	111	1	He	0.048	116.3	45	104.5	1	
Sn 118	118	1	He	0.129	78.9	1028	21.3	10	
Sb 121	121	1	He	-0.298	-20.6	2240	6.0	2	
Ba 137	137	1	He	0.070	146.4	96	118.9	1	
Ce 140	140	1	He	0.042	143.9	598	135.5	5	
Gd 157	157	1	He	0.024	140.2	71	136.7	1	
Au 197	197	1	He	0.108	48.6	421	46.6	5	
Tl 205	205	1	He	0.021	167.7	251	114.6	1	
Pb206	206	1	He	0.069	145.7	309	94.9	1	
Pb207	207	1	He	0.069	140.5	256	94.2	1	
Pb 208	208	1	He	0.074	142.5	1170	100.2	1	
U 238	238	1	He	0.046	113.1	483	112.4	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6985200	1.69	7475944	93.44	80	120	
Sc_45	45	2	H2	40763009	7.39	44729383	91.13	80	120	
Ge_72	72	1	He	3731927	3.96	3950352	94.47	80	120	
Ge_72	72	2	H2	12106590	3.41	13199044	91.72	80	120	
In_115	115	1	He	4343757	1.09	4664305	93.13	80	120	
In_115	115	2	H2	11247710	2.05	12147161	92.60	80	120	
Tm_169	169	1	He	4532779	1.36	4835424	93.74	80	120	

Method Blank (MB) Report

Sample Table

Sample Name	MB 320-134512/1-A
Data File Name	043_PB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:51:00-07:00
Sample Type	MB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.063	-6.4	67	6.9	10	
Be 9	9	2	H2	0.024	42.3	5	43.3	1	
Na 23	23	1	He	-7.813	-11.3	18886	2.4	50	
Mg 24	24	1	He	1.774	2.5	1029	2.0	50	
Al 27	27	1	He	3.928	4.4	1008	1.7	50	
P 31	31	1	He	-1.494	-47.9	57	14.5	50	
K 39	39	1	He	-12.529	-40.6	63156	1.7	50	
Ca 40	40	2	H2	9.604	17.0	70444	14.1	50	
Ti 47	47	1	He	0.062	102.7	11	66.8	5	
V 51	51	1	He	-0.276	-3.5	637	5.1	10	
Cr 52	52	1	He	-0.327	-2.9	2542	2.8	2	
Mn 55	55	1	He	0.253	8.1	749	5.2	1	
Fe 56	56	1	He	1.641	5.9	9090	1.7	50	
Co 59	59	1	He	0.029	15.5	168	13.3	1	
Ni 60	60	1	He	0.858	3.3	1149	1.8	2	
Cu 63	63	1	He	0.034	10.8	469	1.2	2	
Zn 66	66	1	He	1.520	4.2	1123	2.9	5	
As 75	75	1	He	-0.064	-158.3	330	11.4	2	
Se 78	78	2	H2	0.030	50.6	20	17.9	2	
Sr 88	88	1	He	0.050	18.0	373	7.8	5	
Mo 95	95	1	He	0.052	26.5	121	22.2	2	
Ag 107	107	1	He	0.001	654.7	72	28.2	1	
Cd 111	111	1	He	0.007	105.2	11	62.0	1	
Sn 118	118	1	He	0.110	18.5	1047	4.4	10	
Sb 121	121	1	He	-0.753	-8.2	1156	14.4	2	
Ba 137	137	1	He	0.101	31.2	139	27.6	1	
Ce 140	140	1	He	0.016	9.6	271	8.6	5	
Gd 157	157	1	He	0.009	65.6	29	59.2	1	
Au 197	197	1	He	0.033	21.8	153	17.0	5	
Tl 205	205	1	He	0.010	62.4	163	28.9	1	
Pb206	206	1	He	0.042	26.0	234	11.0	1	
Pb207	207	1	He	0.042	28.2	191	13.3	1	
Pb 208	208	1	He	0.049	10.5	913	3.6	1	
U 238	238	1	He	0.009	19.8	100	16.7	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7225300	2.00	7475944	96.65	80	120	
Sc_45	45	2	H2	41997017	5.41	44729383	93.89	80	120	
Ge_72	72	1	He	3872603	1.66	3950352	98.03	80	120	
Ge_72	72	2	H2	12481846	1.44	13199044	94.57	80	120	
In_115	115	1	He	4609862	0.95	4664305	98.83	80	120	
In_115	115	2	H2	11314021	0.87	12147161	93.14	80	120	
Tm_169	169	1	He	4640906	2.79	4835424	95.98	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 320-134512/2-A
Data File Name	044_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:54:33-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	199.449	199.449	1.907	49578	8.77	200	99.7	88	112	
Be 9	9	2	H2	202.228	202.228	1.253	35721	8.61	200	101.1	88	112	
Na 23	23	1	He	958.761	958.761	5.149	715621	4.19	1000	95.9	88	112	
Mg 24	24	1	He	968.575	968.575	5.228	370369	4.56	1000	96.9	88	112	
Al 27	27	1	He	1002.407	1002.407	5.254	182998	4.66	1000	100.2	88	112	
P 31	31	1	He	969.974	969.974	7.511	10364	6.74	1000	97.0	88	112	
K 39	39	1	He	948.013	948.013	5.457	483443	3.51	1000	94.8	88	112	
Ca 40	40	2	H2	1043.138	1043.138	5.575	3966185	13.76	1000	104.3	88	112	
Ti 47	47	1	He	198.186	198.186	5.426	23851	4.27	200	99.1	88	112	
V 51	51	1	He	198.423	198.423	5.639	609195	4.67	200	99.2	88	112	
Cr 52	52	1	He	198.307	198.307	6.231	729737	5.35	200	99.2	88	112	
Mn 55	55	1	He	196.964	196.964	5.141	505596	4.24	200	98.5	88	112	
Fe 56	56	1	He	1053.847	1053.847	5.335	3345417	4.31	1000	105.4	88	112	
Co 59	59	1	He	201.515	201.515	5.340	1043158	4.61	200	100.8	88	112	
Ni 60	60	1	He	202.615	202.615	5.037	263370	3.86	200	101.3	88	112	
Cu 63	63	1	He	202.031	202.031	5.753	695593	4.65	200	101.0	88	112	
Zn 66	66	1	He	198.307	198.307	3.295	120974	4.52	200	99.2	88	112	
As 75	75	1	He	193.316	193.316	2.826	82444	5.28	200	96.7	88	112	
Se 78	78	2	H2	202.223	202.223	4.641	49794	7.35	200	101.1	88	112	
Sr 88	88	1	He	197.037	197.037	4.653	727611	5.15	200	98.5	88	112	
Mo 95	95	1	He	207.198	207.198	3.378	391422	4.56	200	103.6	88	112	
Ag 107	107	1	He	50.850	50.850	3.517	268700	4.85	50	101.7	88	112	
Cd 111	111	1	He	200.318	200.318	3.779	175272	4.90	200	100.2	88	112	
Sn 118	118	1	He	205.697	205.697	2.779	472387	5.04	200	102.8	88	112	
Sb 121	121	1	He	218.897	218.897	3.196	568378	4.76	200	109.4	88	112	
Ba 137	137	1	He	201.397	201.397	4.284	229954	5.54	200	100.7	88	112	
Ce 140	140	1	He	201.170	201.170	7.002	2774962	6.32	200	100.6	88	112	
Gd 157	157	1	He	198.807	198.807	3.550	569173	4.84	200	99.4	88	112	
Au 197	197	1	He	201.958	201.958	3.735	747299	4.75	200	101.0	88	112	
Tl 205	205	1	He	50.176	50.176	3.650	418041	4.06	50	100.4	88	112	
Pb206	206	1	He	200.083	200.083	4.143	579583	4.48	200	100.0	88	112	
Pb207	207	1	He	206.404	206.404	4.977	512210	5.72	200	103.2	88	112	
Pb 208	208	1	He	204.337	204.337	4.190	2273479	4.70	200	102.2	88	112	
U 238	238	1	He	207.719	207.719	2.697	2149765	2.86	200	103.9	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7180995	2.25	7475944	96.05	80	120	
Sc_45	45	2	H2	41737340	8.26	44729383	93.31	80	120	
Ge_72	72	1	He	3848057	4.83	3950352	97.41	80	120	
Ge_72	72	2	H2	12312038	2.72	13199044	93.28	80	120	
In_115	115	1	He	4425618	4.20	4664305	94.88	80	120	
In_115	115	2	H2	11420197	1.48	12147161	94.02	80	120	
Tm_169	169	1	He	4622416	2.80	4835424	95.59	80	120	

Method Blank (MB) Report

Sample Table

Sample Name	MB 320-134617/1-A
Data File Name	045_PB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T11:58:03-07:00
Sample Type	MB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.074	240.9	103	44.8	10	
Be 9	9	2	H2	0.087	113.7	16	111.0	1	
Na 23	23	1	He	-2.752	-35.1	22748	1.1	50	
Mg 24	24	1	He	3.419	1.6	1676	2.2	50	
Al 27	27	1	He	4.957	6.5	1207	2.6	50	
P 31	31	1	He	-0.973	-172.5	63	28.7	50	
K 39	39	1	He	-3.826	-115.6	67572	1.2	50	
Ca 40	40	2	H2	8.368	51.8	66417	26.2	50	
Ti 47	47	1	He	0.153	32.8	23	28.4	5	
V 51	51	1	He	-0.224	-11.0	807	11.7	10	
Cr 52	52	1	He	-0.030	-82.3	3668	2.8	2	
Mn 55	55	1	He	0.153	9.1	495	4.8	1	
Fe 56	56	1	He	2.241	8.8	11093	3.2	50	
Co 59	59	1	He	0.077	11.2	421	8.6	1	
Ni 60	60	1	He	0.151	11.2	225	11.2	2	
Cu 63	63	1	He	0.090	13.1	667	8.2	2	
Zn 66	66	1	He	1.063	17.3	836	8.8	5	
As 75	75	1	He	0.008	337.1	360	7.1	2	
Se 78	78	2	H2	0.112	130.6	40	88.9	2	
Sr 88	88	1	He	0.030	36.7	297	9.8	5	
Mo 95	95	1	He	0.069	17.4	152	12.8	2	
Ag 107	107	1	He	0.001	363.2	74	28.4	1	
Cd 111	111	1	He	0.027	46.4	29	39.7	1	
Sn 118	118	1	He	0.176	20.0	1197	8.0	10	
Sb 121	121	1	He	-0.630	-1.4	1475	0.7	2	
Ba 137	137	1	He	0.051	65.7	79	50.1	1	
Ce 140	140	1	He	0.018	14.5	286	11.7	5	
Gd 157	157	1	He	0.019	16.2	57	15.6	1	
Au 197	197	1	He	0.113	23.6	448	22.1	5	
Tl 205	205	1	He	0.007	12.1	137	4.9	1	
Pb206	206	1	He	0.069	15.9	312	9.9	1	
Pb207	207	1	He	0.073	21.9	269	14.7	1	
Pb 208	208	1	He	0.069	13.7	1126	9.2	1	
U 238	238	1	He	0.043	26.5	451	26.2	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7287779	2.47	7475944	97.48	80	120	
Sc_45	45	2	H2	42504333	8.15	44729383	95.03	80	120	
Ge_72	72	1	He	3854020	4.28	3950352	97.56	80	120	
Ge_72	72	2	H2	12448208	4.38	13199044	94.31	80	120	
In_115	115	1	He	4578867	2.07	4664305	98.17	80	120	
In_115	115	2	H2	11629177	1.77	12147161	95.74	80	120	
Tm_169	169	1	He	4615591	0.30	4835424	95.45	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 320-134617/2-A
Data File Name	046_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:01:37-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	206.191	206.191	2.668	52789	9.32	200	103.1	88	112	
Be 9	9	2	H2	208.699	208.699	3.478	37981	10.06	200	104.3	88	112	
Na 23	23	1	He	989.106	989.106	3.323	749234	3.03	1000	98.9	88	112	
Mg 24	24	1	He	989.562	989.562	2.601	384399	2.34	1000	99.0	88	112	
Al 27	27	1	He	1020.671	1020.671	2.516	189290	2.45	1000	102.1	88	112	
P 31	31	1	He	996.989	996.989	3.609	10820	3.18	1000	99.7	88	112	
K 39	39	1	He	972.229	972.229	3.019	501960	2.50	1000	97.2	88	112	
Ca 40	40	2	H2	1092.954	1092.954	10.244	4282738	17.33	1000	109.3	88	112	
Ti 47	47	1	He	203.638	203.638	3.278	24899	2.96	200	101.8	88	112	
V 51	51	1	He	201.651	201.651	3.384	628996	3.25	200	100.8	88	112	
Cr 52	52	1	He	204.317	204.317	3.193	763784	3.02	200	102.2	88	112	
Mn 55	55	1	He	201.539	201.539	4.002	525599	3.90	200	100.8	88	112	
Fe 56	56	1	He	1058.929	1058.929	2.142	3415344	1.87	1000	105.9	88	112	
Co 59	59	1	He	205.627	205.627	2.881	1081391	2.67	200	102.8	88	112	
Ni 60	60	1	He	206.592	206.592	4.045	272836	3.83	200	103.3	88	112	
Cu 63	63	1	He	206.523	206.523	3.609	722479	3.48	200	103.3	88	112	
Zn 66	66	1	He	212.810	212.810	2.254	125966	2.59	200	106.4	88	112	
As 75	75	1	He	205.424	205.424	2.398	84964	2.70	200	102.7	88	112	
Se 78	78	2	H2	209.791	209.791	4.413	52172	7.39	200	104.9	88	112	
Sr 88	88	1	He	209.308	209.308	2.685	750177	3.22	200	104.7	88	112	
Mo 95	95	1	He	219.711	219.711	3.703	402802	4.17	200	109.9	88	112	
Ag 107	107	1	He	51.468	51.468	3.269	276415	2.96	50	102.9	88	112	
Cd 111	111	1	He	203.752	203.752	4.039	181181	3.26	200	101.9	88	112	
Sn 118	118	1	He	205.684	205.684	3.343	479990	3.18	200	102.8	88	112	
Sb 121	121	1	He	220.190	220.190	4.840	580947	4.02	200	110.1	88	112	
Ba 137	137	1	He	205.070	205.070	4.158	237958	3.70	200	102.5	88	112	
Ce 140	140	1	He	206.090	206.090	2.945	2891338	2.33	200	103.0	88	112	
Gd 157	157	1	He	207.536	207.536	4.859	581479	3.08	200	103.8	88	112	
Au 197	197	1	He	212.994	212.994	5.097	771306	3.06	200	106.5	88	112	
Tl 205	205	1	He	52.852	52.852	5.069	431017	3.16	50	105.7	88	112	
Pb206	206	1	He	211.655	211.655	5.181	600145	3.34	200	105.8	88	112	
Pb207	207	1	He	218.721	218.721	4.293	531248	2.26	200	109.4	88	112	
Pb 208	208	1	He	215.787	215.787	4.507	2350047	2.32	200	107.9	88	112	
U 238	238	1	He	219.176	219.176	3.291	2221304	2.37	200	109.6	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7292513	0.51	7475944	97.55	80	120	
Sc_45	45	2	H2	42963845	7.56	44729383	96.05	80	120	
Ge_72	72	1	He	3732390	0.77	3950352	94.48	80	120	
Ge_72	72	2	H2	12434143	2.99	13199044	94.20	80	120	
In_115	115	1	He	4497639	1.51	4664305	96.43	80	120	
In_115	115	2	H2	11562274	0.30	12147161	95.18	80	120	
Tm_169	169	1	He	4527111	2.29	4835424	93.62	80	120	

Method Blank (MB) Report

Sample Table

Sample Name	MB 320-134618/1-A
Data File Name	047_PB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:05:08-07:00
Sample Type	MB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.044	-56.4	72	15.0	10	
Be 9	9	2	H2	0.010	87.9	2	74.2	1	
Na 23	23	1	He	-8.993	-8.3	17855	1.5	50	
Mg 24	24	1	He	1.205	11.2	802	3.8	50	
Al 27	27	1	He	2.547	14.2	747	6.0	50	
P 31	31	1	He	-1.674	-76.6	55	23.5	50	
K 39	39	1	He	-7.383	-49.1	64802	0.4	50	
Ca 40	40	2	H2	1.461	27.5	39361	10.6	50	
Ti 47	47	1	He	0.073	77.5	13	55.5	5	
V 51	51	1	He	-0.297	-6.3	569	12.0	10	
Cr 52	52	1	He	-0.264	-12.8	2750	4.5	2	
Mn 55	55	1	He	0.072	22.0	281	17.1	1	
Fe 56	56	1	He	1.122	12.2	7357	3.0	50	
Co 59	59	1	He	0.034	31.5	195	25.5	1	
Ni 60	60	1	He	0.118	29.0	178	23.6	2	
Cu 63	63	1	He	0.074	11.5	601	2.8	2	
Zn 66	66	1	He	0.679	0.6	598	3.2	5	
As 75	75	1	He	-0.041	-113.0	335	5.8	2	
Se 78	78	2	H2	0.032	145.3	20	53.9	2	
Sr 88	88	1	He	0.011	110.3	221	16.5	5	
Mo 95	95	1	He	0.060	39.0	134	31.2	2	
Ag 107	107	1	He	0.004	124.5	91	30.7	1	
Cd 111	111	1	He	0.014	80.6	17	59.2	1	
Sn 118	118	1	He	0.132	22.4	1088	6.4	10	
Sb 121	121	1	He	-0.849	-7.0	886	17.5	2	
Ba 137	137	1	He	0.016	56.6	38	28.4	1	
Ce 140	140	1	He	0.016	50.2	259	42.9	5	
Gd 157	157	1	He	0.016	43.5	47	39.8	1	
Au 197	197	1	He	0.114	28.6	451	25.0	5	
Tl 205	205	1	He	0.006	80.0	136	33.4	1	
Pb206	206	1	He	0.036	43.8	214	19.0	1	
Pb207	207	1	He	0.039	42.2	184	24.5	1	
Pb 208	208	1	He	0.042	5.6	830	3.7	1	
U 238	238	1	He	0.037	35.6	387	33.3	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7156596	2.77	7475944	95.73	80	120	
Sc_45	45	2	H2	41847885	6.80	44729383	93.56	80	120	
Ge_72	72	1	He	3808652	2.76	3950352	96.41	80	120	
Ge_72	72	2	H2	12258617	3.68	13199044	92.88	80	120	
In_115	115	1	He	4559618	0.78	4664305	97.76	80	120	
In_115	115	2	H2	11531137	0.60	12147161	94.93	80	120	
Tm_169	169	1	He	4625105	2.27	4835424	95.65	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 320-134618/2-A
Data File Name	048_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:08:45-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	205.018	205.018	2.694	51871	9.04	200	102.5	88	112	
Be 9	9	2	H2	210.129	210.129	1.885	37766	8.15	200	105.1	88	112	
Na 23	23	1	He	1010.258	1010.258	2.632	755417	2.70	1000	101.0	88	112	
Mg 24	24	1	He	1018.968	1018.968	2.650	390999	2.87	1000	101.9	88	112	
Al 27	27	1	He	1046.333	1046.333	2.529	191666	2.45	1000	104.6	88	112	
P 31	31	1	He	1020.636	1020.636	3.473	10943	4.07	1000	102.1	88	112	
K 39	39	1	He	998.299	998.299	1.864	507325	2.24	1000	99.8	88	112	
Ca 40	40	2	H2	1087.952	1087.952	9.808	4209226	16.11	1000	108.8	88	112	
Ti 47	47	1	He	205.827	205.827	1.830	24863	2.58	200	102.9	88	112	
V 51	51	1	He	205.822	205.822	2.554	634167	2.79	200	102.9	88	112	
Cr 52	52	1	He	208.210	208.210	2.591	768885	3.35	200	104.1	88	112	
Mn 55	55	1	He	205.673	205.673	2.331	529874	2.81	200	102.8	88	112	
Fe 56	56	1	He	1078.955	1078.955	2.304	3437377	2.27	1000	107.9	88	112	
Co 59	59	1	He	209.544	209.544	3.595	1088732	4.22	200	104.8	88	112	
Ni 60	60	1	He	211.686	211.686	3.428	276189	3.89	200	105.8	88	112	
Cu 63	63	1	He	211.313	211.313	2.778	730295	3.37	200	105.7	88	112	
Zn 66	66	1	He	209.388	209.388	5.335	128422	3.68	200	104.7	88	112	
As 75	75	1	He	200.386	200.386	4.542	85891	2.82	200	100.2	88	112	
Se 78	78	2	H2	207.918	207.918	4.115	52119	6.46	200	104.0	88	112	
Sr 88	88	1	He	205.575	205.575	5.639	763314	3.76	200	102.8	88	112	
Mo 95	95	1	He	215.280	215.280	6.110	408859	4.31	200	107.6	88	112	
Ag 107	107	1	He	50.221	50.221	4.575	277686	2.92	50	100.4	88	112	
Cd 111	111	1	He	197.432	197.432	5.535	180747	3.79	200	98.7	88	112	
Sn 118	118	1	He	205.793	205.793	5.738	494317	3.76	200	102.9	88	112	
Sb 121	121	1	He	217.903	217.903	5.732	591917	3.80	200	109.0	88	112	
Ba 137	137	1	He	200.426	200.426	5.072	239438	3.34	200	100.2	88	112	
Ce 140	140	1	He	201.438	201.438	3.913	2910288	2.95	200	100.7	88	112	
Gd 157	157	1	He	207.245	207.245	1.341	596868	3.10	200	103.6	88	112	
Au 197	197	1	He	194.769	194.769	2.353	725095	3.89	200	97.4	88	112	
Tl 205	205	1	He	52.290	52.290	2.508	438347	3.64	50	104.6	88	112	
Pb206	206	1	He	210.722	210.722	2.125	614186	3.38	200	105.4	88	112	
Pb207	207	1	He	216.579	216.579	1.583	540754	3.54	200	108.3	88	112	
Pb 208	208	1	He	213.994	213.994	1.590	2395663	3.29	200	107.0	88	112	
U 238	238	1	He	216.830	216.830	1.643	2259135	4.73	200	108.4	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7203642	1.39	7475944	96.36	80	120	
Sc_45	45	2	H2	42440065	6.33	44729383	94.88	80	120	
Ge_72	72	1	He	3869844	1.95	3950352	97.96	80	120	
Ge_72	72	2	H2	12537267	2.79	13199044	94.99	80	120	
In_115	115	1	He	4632954	2.60	4664305	99.33	80	120	
In_115	115	2	H2	11361529	0.73	12147161	93.53	80	120	
Tm_169	169	1	He	4650834	3.17	4835424	96.18	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	049_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:12:14-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	102.445	1.217	26070	8.50	100	102.4	90	110	
Be 9	9	2	H2	102.600	2.220	18533	9.54	100	102.6	90	110	
Na 23	23	1	He	5071.844	0.903	3658769	0.53	5100	99.4	90	110	
Mg 24	24	1	He	5061.062	4.638	1922095	4.53	5100	99.2	90	110	
Al 27	27	1	He	5043.769	3.443	913996	3.10	5100	98.9	90	110	
P 31	31	1	He	5061.243	2.768	53449	2.34	5000	101.2	90	110	
K 39	39	1	He	5043.344	0.792	2263496	0.58	5100	98.9	90	110	
Ca 40	40	2	H2	5358.689	7.844	20688575	15.22	5100	105.1	90	110	
Ti 47	47	1	He	203.311	2.586	24322	2.18	200	101.7	90	110	
V 51	51	1	He	100.520	3.098	307487	2.67	100	100.5	90	110	
Cr 52	52	1	He	101.783	3.320	374101	2.87	100	101.8	90	110	
Mn 55	55	1	He	101.546	3.036	259135	2.66	100	101.5	90	110	
Fe 56	56	1	He	5119.878	0.881	16141760	0.49	5100	100.4	90	110	
Co 59	59	1	He	101.760	2.902	523581	2.53	100	101.8	90	110	
Ni 60	60	1	He	102.181	3.417	132038	3.03	100	102.2	90	110	
Cu 63	63	1	He	102.677	3.416	351585	3.01	100	102.7	90	110	
Zn 66	66	1	He	100.055	2.107	61102	2.73	100	100.1	90	110	
As 75	75	1	He	98.436	3.582	42121	3.95	100	98.4	90	110	
Se 78	78	2	H2	102.959	4.116	25628	7.01	100	103.0	90	110	
Sr 88	88	1	He	99.603	2.388	367746	2.50	100	99.6	90	110	
Mo 95	95	1	He	199.869	2.794	377344	2.57	200	99.9	90	110	
Ag 107	107	1	He	49.010	3.063	264467	2.77	50	98.0	90	110	
Cd 111	111	1	He	98.408	2.993	87942	3.02	100	98.4	90	110	
Sn 118	118	1	He	98.501	3.874	231331	3.17	100	98.5	90	110	
Sb 121	121	1	He	49.033	2.891	132436	2.79	50	98.1	90	110	
Ba 137	137	1	He	99.417	4.178	115932	4.15	100	99.4	90	110	
Ce 140	140	1	He	99.194	3.206	1398372	2.99	100	99.2	90	110	
Gd 157	157	1	He	101.362	1.402	284783	3.41	100	101.4	90	110	
Au 197	197	1	He	102.338	1.145	371645	3.16	100	102.3	90	110	
Tl 205	205	1	He	50.630	0.471	413986	2.04	50	101.3	90	110	
Pb206	206	1	He	102.507	1.001	291515	3.01	100	102.5	1	10000	
Pb207	207	1	He	101.945	0.790	248315	2.80	100	101.9	1	10000	
Pb 208	208	1	He	103.260	0.670	1127765	2.67	100	103.3	90	110	
U 238	238	1	He	103.419	1.438	1050582	2.79	100	103.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7134833	0.43	7475944	95.44	80	120	
Sc_45	45	2	H2	42643604	7.42	44729383	95.34	80	120	
Ge_72	72	1	He	3845086	2.76	3950352	97.34	80	120	
Ge_72	72	2	H2	12444034	3.01	13199044	94.28	80	120	
In_115	115	1	He	4518947	1.25	4664305	96.88	80	120	
In_115	115	2	H2	11476790	2.45	12147161	94.48	80	120	
Tm_169	169	1	He	4535860	2.05	4835424	93.80	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	050_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:15:42-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.032	26.2	91	8.1	10	
Be 9	9	2	H2	0.016	13.9	3	9.1	1	
Na 23	23	1	He	-0.758	-108.1	24105	1.3	50	
Mg 24	24	1	He	0.357	31.9	486	7.9	50	
Al 27	27	1	He	0.331	22.5	350	4.0	50	
P 31	31	1	He	-1.189	-97.6	61	19.0	50	
K 39	39	1	He	-8.945	-45.2	65016	1.4	50	
Ca 40	40	2	H2	0.550	69.7	36054	12.1	50	
Ti 47	47	1	He	0.045	151.6	9	89.2	5	
V 51	51	1	He	-0.233	-12.3	775	12.6	10	
Cr 52	52	1	He	-0.019	-284.3	3691	5.3	2	
Mn 55	55	1	He	0.005	176.3	110	23.8	1	
Fe 56	56	1	He	0.398	25.9	5143	5.0	50	
Co 59	59	1	He	0.009	44.1	66	30.3	1	
Ni 60	60	1	He	0.007	123.9	35	29.6	2	
Cu 63	63	1	He	0.032	21.6	462	4.1	2	
Zn 66	66	1	He	0.030	99.5	207	8.8	5	
As 75	75	1	He	-0.074	-45.3	322	4.2	2	
Se 78	78	2	H2	0.046	67.6	24	32.8	2	
Sr 88	88	1	He	0.004	126.2	198	8.7	5	
Mo 95	95	1	He	0.072	22.9	159	19.9	2	
Ag 107	107	1	He	0.002	245.5	76	27.0	1	
Cd 111	111	1	He	0.011	64.2	14	42.9	1	
Sn 118	118	1	He	0.065	6.9	914	1.2	10	
Sb 121	121	1	He	-0.476	-3.8	1852	3.4	2	
Ba 137	137	1	He	0.005	364.7	24	92.8	1	
Ce 140	140	1	He	0.005	26.5	108	18.6	5	
Gd 157	157	1	He	0.007	49.6	22	45.8	1	
Au 197	197	1	He	0.087	21.0	351	18.9	5	
Tl 205	205	1	He	0.005	38.7	120	12.7	1	
Pb206	206	1	He	0.009	159.5	136	28.0	1	
Pb207	207	1	He	0.007	99.9	104	18.1	1	
Pb 208	208	1	He	0.018	8.8	554	2.4	1	
U 238	238	1	He	0.024	25.9	251	25.5	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7255178	1.41	7475944	97.05	80	120	
Sc_45	45	2	H2	41975755	8.03	44729383	93.84	80	120	
Ge_72	72	1	He	3827159	0.31	3950352	96.88	80	120	
Ge_72	72	2	H2	12398943	2.86	13199044	93.94	80	120	
In_115	115	1	He	4490794	0.87	4664305	96.28	80	120	
In_115	115	2	H2	11509202	2.18	12147161	94.75	80	120	
Tm_169	169	1	He	4598507	1.63	4835424	95.10	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	051_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:19:16-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	99.379	1.959	24813	8.74	100	99.4	90	110	
Be 9	9	2	H2	99.798	2.907	17685	9.69	100	99.8	90	110	
Na 23	23	1	He	5010.092	1.379	3601071	1.12	5100	98.2	90	110	
Mg 24	24	1	He	5084.441	4.665	1923986	4.93	5100	99.7	90	110	
Al 27	27	1	He	5068.106	4.222	914970	3.87	5100	99.4	90	110	
P 31	31	1	He	5056.427	3.638	53191	2.45	5000	101.1	90	110	
K 39	39	1	He	5065.058	4.561	2263741	3.01	5100	99.3	90	110	
Ca 40	40	2	H2	5118.418	7.992	19378566	14.75	5100	100.4	90	110	
Ti 47	47	1	He	203.242	4.081	24227	4.44	200	101.6	90	110	
V 51	51	1	He	101.855	3.971	310387	3.55	100	101.9	90	110	
Cr 52	52	1	He	101.241	3.346	370775	3.33	100	101.2	90	110	
Mn 55	55	1	He	102.818	4.199	261404	3.94	100	102.8	90	110	
Fe 56	56	1	He	5167.545	5.543	16231141	5.48	5100	101.3	90	110	
Co 59	59	1	He	102.530	3.536	525554	2.99	100	102.5	90	110	
Ni 60	60	1	He	103.323	3.751	133024	3.63	100	103.3	90	110	
Cu 63	63	1	He	103.274	3.360	352314	3.01	100	103.3	90	110	
Zn 66	66	1	He	100.835	3.659	61023	3.76	100	100.8	90	110	
As 75	75	1	He	100.148	3.593	42460	3.64	100	100.1	90	110	
Se 78	78	2	H2	100.005	4.675	24645	7.29	100	100.0	90	110	
Sr 88	88	1	He	100.282	4.916	366950	5.02	100	100.3	90	110	
Mo 95	95	1	He	201.368	4.328	376799	4.39	200	100.7	90	110	
Ag 107	107	1	He	49.070	1.844	265268	3.69	50	98.1	90	110	
Cd 111	111	1	He	97.410	1.896	87203	3.82	100	97.4	90	110	
Sn 118	118	1	He	98.573	2.797	231969	4.68	100	98.6	90	110	
Sb 121	121	1	He	48.964	1.660	132484	3.55	50	97.9	90	110	
Ba 137	137	1	He	98.848	1.530	115462	3.26	100	98.8	90	110	
Ce 140	140	1	He	98.030	1.870	1384422	3.72	100	98.0	90	110	
Gd 157	157	1	He	99.348	3.190	287043	4.48	100	99.3	90	110	
Au 197	197	1	He	99.289	2.794	370834	4.39	100	99.3	90	110	
Tl 205	205	1	He	49.407	2.916	415522	4.28	50	98.8	90	110	
Pb206	206	1	He	101.047	3.211	295534	4.54	100	101.0	1	10000	
Pb207	207	1	He	99.485	2.327	249231	4.09	100	99.5	1	10000	
Pb 208	208	1	He	100.602	2.538	1129929	3.72	100	100.6	90	110	
U 238	238	1	He	100.912	2.461	1054189	3.45	100	100.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7109481	2.25	7475944	95.10	80	120	
Sc_45	45	2	H2	41824372	6.94	44729383	93.51	80	120	
Ge_72	72	1	He	3809791	0.19	3950352	96.44	80	120	
Ge_72	72	2	H2	12320728	3.23	13199044	93.35	80	120	
In_115	115	1	He	4525578	1.94	4664305	97.03	80	120	
In_115	115	2	H2	11698507	1.15	12147161	96.31	80	120	
Tm_169	169	1	He	4664360	1.88	4835424	96.46	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	052_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:22:44-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.058	75.3	95	16.2	10	
Be 9	9	2	H2	0.004	7.7	1	0.0	1	
Na 23	23	1	He	-0.176	-499.9	23971	1.6	50	
Mg 24	24	1	He	0.379	61.7	484	18.8	50	
Al 27	27	1	He	0.369	54.1	349	9.5	50	
P 31	31	1	He	-0.467	-547.2	67	38.2	50	
K 39	39	1	He	-5.340	-43.6	65106	1.5	50	
Ca 40	40	2	H2	0.703	86.1	35400	10.5	50	
Ti 47	47	1	He	0.041	23.9	9	13.3	5	
V 51	51	1	He	-0.224	-3.3	783	4.1	10	
Cr 52	52	1	He	0.004	510.0	3693	2.7	2	
Mn 55	55	1	He	0.012	82.7	125	22.6	1	
Fe 56	56	1	He	0.389	26.6	5001	7.3	50	
Co 59	59	1	He	0.005	131.8	45	78.5	1	
Ni 60	60	1	He	0.005	83.5	32	16.5	2	
Cu 63	63	1	He	0.013	76.3	386	8.8	2	
Zn 66	66	1	He	-0.001	-2470.7	186	13.4	5	
As 75	75	1	He	-0.010	-844.0	345	12.1	2	
Se 78	78	2	H2	0.036	56.5	21	22.9	2	
Sr 88	88	1	He	0.011	52.4	222	10.4	5	
Mo 95	95	1	He	0.056	31.6	127	26.7	2	
Ag 107	107	1	He	0.000	-1459.8	66	10.6	1	
Cd 111	111	1	He	0.007	64.8	11	39.0	1	
Sn 118	118	1	He	0.092	38.1	960	8.0	10	
Sb 121	121	1	He	-0.430	-14.8	1935	8.1	2	
Ba 137	137	1	He	0.013	54.2	33	26.4	1	
Ce 140	140	1	He	0.005	60.7	102	42.1	5	
Gd 157	157	1	He	0.006	49.7	18	47.2	1	
Au 197	197	1	He	0.079	28.4	313	27.7	5	
Tl 205	205	1	He	-0.001	-132.3	74	6.8	1	
Pb206	206	1	He	0.005	308.9	123	35.4	1	
Pb207	207	1	He	0.010	112.8	110	26.9	1	
Pb 208	208	1	He	0.013	64.9	490	18.4	1	
U 238	238	1	He	0.019	35.6	194	32.7	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7090198	1.84	7475944	94.84	80	120	
Sc_45	45	2	H2	40593683	5.28	44729383	90.75	80	120	
Ge_72	72	1	He	3771447	1.61	3950352	95.47	80	120	
Ge_72	72	2	H2	12196449	1.05	13199044	92.40	80	120	
In_115	115	1	He	4410122	1.54	4664305	94.55	80	120	
In_115	115	2	H2	11215320	2.90	12147161	92.33	80	120	
Tm_169	169	1	He	4504857	3.49	4835424	93.16	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-11-A
Data File Name	053SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:26:21-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.045	0.045	119.31	93	16.60		2000	2000	
Be 9	9	2	H2	0.005	0.005	92.54	1	65.47		2000	2000	
B 11	11	2	H2	18.983	18.983	2.43	6489	6.99		10000	10000	
Na 23	23	1	He	1827.487	1827.487	5.91	1319380	6.17		100000	100000	
Mg 24	24	1	He	1765.054	1765.054	4.51	663183	4.47		100000	100000	
Al 27	27	1	He	13.723	13.723	6.31	2739	4.64		100000	100000	
P 31	31	1	He	7.590	7.590	7.03	151	3.07		100000	100000	
K 39	39	1	He	167.483	167.483	5.57	139207	2.71		100000	100000	
Ca 40	40	2	H2	14595.119	14595.119	9.21	54697780	15.23		100000	100000	
Ti 47	47	1	He	0.403	0.403	21.90	51	19.22		2000	2000	
V 51	51	1	He	0.055	0.055	74.97	1619	8.59		2000	2000	
Cr 52	52	1	He	-0.234	-0.234	-7.17	2820	3.17		2000	2000	
Mn 55	55	1	He	1.502	1.502	5.44	3882	4.10		22000	22000	
Fe 56	56	1	He	18.426	18.426	4.67	61202	4.33		100000	100000	
Co 59	59	1	He	0.039	0.039	16.77	217	14.34		2000	2000	
Ni 60	60	1	He	0.200	0.200	33.64	281	30.17		2000	2000	
Cu 63	63	1	He	0.731	0.731	4.66	2816	3.53		2000	2000	
Zn 66	66	1	He	14.451	14.451	3.56	8874	3.62		2000	2000	
As 75	75	1	He	0.088	0.088	20.54	388	2.10		2000	2000	
Se 78	78	2	H2	0.097	0.097	35.74	36	25.46		2000	2000	
Sr 88	88	1	He	75.270	75.270	3.86	274445	3.85		2000	2000	
Mo 95	95	1	He	0.129	0.129	10.92	263	9.56		2000	2000	
Ag 107	107	1	He	0.003	0.003	258.12	84	53.30		500	500	
Cd 111	111	1	He	0.031	0.031	36.99	32	31.25		2000	2000	
Sn 118	118	1	He	0.079	0.079	17.61	942	2.84		2000	2000	
Sb 121	121	1	He	-0.746	-0.746	-2.10	1137	4.11		2000	2000	
Ba 137	137	1	He	57.427	57.427	4.09	66207	3.46		2000	2000	
Ce 140	140	1	He	0.026	0.026	16.47	391	14.89		2000	2000	
Gd 157	157	1	He	0.011	0.011	65.70	32	60.62		2000	2000	
Au 197	197	1	He	0.032	0.032	14.43	143	10.13		2000	2000	
Tl 205	205	1	He	0.001	0.001	190.48	91	25.69		500	500	
Pb206	206	1	He	0.097	0.097	8.84	381	4.97		12000	12000	
Pb207	207	1	He	0.085	0.085	31.74	291	24.19		12000	12000	
Pb 208	208	1	He	0.102	0.102	5.60	1456	6.03		12000	12000	
U 238	238	1	He	0.027	0.027	4.85	283	6.55		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7056505	1.25	7475944	94.39	80	120	
Sc_45	45	2	H2	41444144	5.94	44729383	92.66	80	120	
Ge_72	72	1	He	3795781	0.45	3950352	96.09	80	120	
Ge_72	72	2	H2	12283222	2.06	13199044	93.06	80	120	
In_115	115	1	He	4467670	0.63	4664305	95.78	80	120	
In_115	115	2	H2	11585550	0.25	12147161	95.38	80	120	
Tm_169	169	1	He	4483802	1.84	4835424	92.73	80	120	

Sample Report

Sample Table

Sample Name	sd 320-22768-A-11-A@5
Data File Name	054SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:29:53-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.015	-0.015	-237.17	82	14.89		2000	2000	
Be 9	9	2	H2	0.005	0.005	131.16	1	89.21		2000	2000	
B 11	11	2	H2	15.658	15.658	6.55	6231	8.81		10000	10000	
Na 23	23	1	He	378.685	378.685	0.87	292007	3.78		100000	100000	
Mg 24	24	1	He	362.590	362.590	1.33	136351	4.30		100000	100000	
Al 27	27	1	He	7.012	7.012	10.99	1538	11.80		100000	100000	
P 31	31	1	He	0.095	0.095	1957.20	72	23.73		100000	100000	
K 39	39	1	He	32.287	32.287	12.33	80856	1.10		100000	100000	
Ca 40	40	2	H2	2929.233	2929.233	10.22	11440344	16.35		100000	100000	
Ti 47	47	1	He	0.120	0.120	36.83	18	29.40		2000	2000	
V 51	51	1	He	0.048	0.048	44.89	1595	5.84		2000	2000	
Cr 52	52	1	He	0.056	0.056	115.81	3852	3.27		2000	2000	
Mn 55	55	1	He	0.368	0.368	8.89	1021	10.63		22000	22000	
Fe 56	56	1	He	5.340	5.340	1.41	20377	2.24		100000	100000	
Co 59	59	1	He	0.018	0.018	8.28	109	3.83		2000	2000	
Ni 60	60	1	He	0.049	0.049	12.97	88	6.01		2000	2000	
Cu 63	63	1	He	1.111	1.111	1.16	4095	3.97		2000	2000	
Zn 66	66	1	He	3.292	3.292	4.20	2178	2.71		2000	2000	
As 75	75	1	He	0.042	0.042	223.09	371	11.72		2000	2000	
Se 78	78	2	H2	0.024	0.024	98.01	19	32.87		2000	2000	
Sr 88	88	1	He	15.435	15.435	5.28	56735	5.04		2000	2000	
Mo 95	95	1	He	0.024	0.024	35.15	67	22.91		2000	2000	
Ag 107	107	1	He	0.001	0.001	1233.98	68	58.26		500	500	
Cd 111	111	1	He	0.005	0.005	69.16	9	35.25		2000	2000	
Sn 118	118	1	He	0.084	0.084	34.36	921	6.57		2000	2000	
Sb 121	121	1	He	-0.623	-0.623	-5.05	1409	6.08		2000	2000	
Ba 137	137	1	He	12.047	12.047	4.37	13425	4.18		2000	2000	
Ce 140	140	1	He	0.008	0.008	14.64	139	10.82		2000	2000	
Gd 157	157	1	He	0.003	0.003	3.18	10	0.00		2000	2000	
Au 197	197	1	He	0.017	0.017	30.22	92	22.96		2000	2000	
Tl 205	205	1	He	-0.005	-0.005	-2.94	43	0.00		500	500	
Pb206	206	1	He	0.063	0.063	10.97	289	4.37		12000	12000	
Pb207	207	1	He	0.047	0.047	19.20	199	8.43		12000	12000	
Pb 208	208	1	He	0.062	0.062	7.43	1036	4.09		12000	12000	
U 238	238	1	He	0.010	0.010	15.25	106	11.95		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7046638	3.21	7475944	94.26	80	120	
Sc_45	45	2	H2	43061755	6.37	44729383	96.27	80	120	
Ge_72	72	1	He	3817124	1.12	3950352	96.63	80	120	
Ge_72	72	2	H2	12902479	3.41	13199044	97.75	80	120	
In_115	115	1	He	4313511	0.51	4664305	92.48	80	120	
In_115	115	2	H2	11552482	3.34	12147161	95.10	80	120	
Tm_169	169	1	He	4536543	2.51	4835424	93.82	80	120	

Sample Table

Sample Name	pds 320-22768-A-11-A
Data File Name	055SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:33:27-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	413.657	413.657	1.55	99573	8.85		2000	2000	
Be 9	9	2	H2	421.667	421.667	1.39	72208	9.32		2000	2000	
B 11	11	2	H2	2093.411	2093.411	2.94	308531	11.17		10000	10000	
Na 23	23	1	He	3838.559	3838.559	3.98	2703700	4.20		100000	100000	
Mg 24	24	1	He	3780.295	3780.295	1.75	1398702	0.93		100000	100000	
Al 27	27	1	He	2212.432	2212.432	4.39	390721	3.89		100000	100000	
P 31	31	1	He	2047.904	2047.904	5.03	21108	4.24		100000	100000	
K 39	39	1	He	2134.336	2134.336	3.69	971263	3.01		100000	100000	
Ca 40	40	2	H2	16425.238	16425.238	6.74	60054259	14.71		100000	100000	
Ti 47	47	1	He	414.738	414.738	4.72	48330	4.30		2000	2000	
V 51	51	1	He	411.719	411.719	3.61	1222532	3.19		2000	2000	
Cr 52	52	1	He	420.901	420.901	4.10	1495639	3.21		2000	2000	
Mn 55	55	1	He	407.633	407.633	3.70	1013144	3.36		22000	22000	
Fe 56	56	1	He	2118.211	2118.211	2.77	6507642	2.07		100000	100000	
Co 59	59	1	He	423.532	423.532	4.99	2122956	4.76		2000	2000	
Ni 60	60	1	He	413.804	413.804	3.84	520856	3.47		2000	2000	
Cu 63	63	1	He	416.886	416.886	3.88	1389647	3.46		2000	2000	
Zn 66	66	1	He	424.989	424.989	1.26	248248	3.62		2000	2000	
As 75	75	1	He	400.843	400.843	1.16	163411	3.73		2000	2000	
Se 78	78	2	H2	422.157	422.157	4.81	99377	7.97		2000	2000	
Sr 88	88	1	He	509.109	509.109	0.91	1801698	3.58		2000	2000	
Mo 95	95	1	He	420.487	420.487	1.71	761338	4.28		2000	2000	
Ag 107	107	1	He	102.417	102.417	2.94	525917	4.20		500	500	
Cd 111	111	1	He	404.934	404.934	2.08	344349	3.45		2000	2000	
Sn 118	118	1	He	422.613	422.613	3.17	942323	4.49		2000	2000	
Sb 121	121	1	He	449.863	449.863	2.44	1132010	3.59		2000	2000	
Ba 137	137	1	He	473.619	473.619	2.62	525535	3.92		2000	2000	
Ce 140	140	1	He	410.911	410.911	4.14	5513731	5.49		2000	2000	
Gd 157	157	1	He	409.585	409.585	2.12	1148621	3.75		2000	2000	
Au 197	197	1	He	415.973	415.973	3.14	1507955	4.74		2000	2000	
Tl 205	205	1	He	102.653	102.653	2.32	837895	3.92		500	500	
Pb206	206	1	He	406.022	406.022	3.00	1152228	4.16		12000	12000	
Pb207	207	1	He	420.381	420.381	2.20	1021875	3.79		12000	12000	
Pb 208	208	1	He	415.982	415.982	2.88	4534411	4.39		12000	12000	
U 238	238	1	He	407.772	407.772	1.82	4134310	2.45		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6951177	1.14	7475944	92.98	80	120	
Sc_45	45	2	H2	40448308	8.40	44729383	90.43	80	120	
Ge_72	72	1	He	3685614	2.69	3950352	93.30	80	120	
Ge_72	72	2	H2	11770118	3.17	13199044	89.17	80	120	
In_115	115	1	He	4299343	1.42	4664305	92.18	80	120	
In_115	115	2	H2	10904063	2.51	12147161	89.77	80	120	
Tm_169	169	1	He	4527318	1.70	4835424	93.63	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-11-B MS
Data File Name	056SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:36:48-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	205.065	205.065	2.65	48230	9.27		2000	2000	
Be 9	9	2	H2	209.214	209.214	2.17	34969	9.29		2000	2000	
B 11	11	2	H2	1079.769	1079.769	4.52	156985	11.13		10000	10000	
Na 23	23	1	He	2900.794	2900.794	3.47	1993342	3.04		100000	100000	
Mg 24	24	1	He	2741.435	2741.435	4.67	986968	4.20		100000	100000	
Al 27	27	1	He	1009.406	1009.406	3.40	173598	2.76		100000	100000	
P 31	31	1	He	996.723	996.723	2.92	10033	2.45		100000	100000	
K 39	39	1	He	1140.419	1140.419	3.60	534889	2.54		100000	100000	
Ca 40	40	2	H2	15877.591	15877.591	7.98	56663159	15.18		100000	100000	
Ti 47	47	1	He	201.781	201.781	3.69	22881	3.18		2000	2000	
V 51	51	1	He	199.672	199.672	3.95	577568	3.29		2000	2000	
Cr 52	52	1	He	201.948	201.948	4.32	700117	3.82		2000	2000	
Mn 55	55	1	He	198.822	198.822	4.39	480829	3.85		22000	22000	
Fe 56	56	1	He	1084.797	1084.797	6.54	3244094	5.95		100000	100000	
Co 59	59	1	He	201.007	201.007	4.14	980257	3.48		2000	2000	
Ni 60	60	1	He	203.169	203.169	4.44	248826	3.96		2000	2000	
Cu 63	63	1	He	203.949	203.949	4.58	661657	4.24		2000	2000	
Zn 66	66	1	He	217.227	217.227	3.39	122684	3.93		2000	2000	
As 75	75	1	He	200.043	200.043	2.37	78956	3.13		2000	2000	
Se 78	78	2	H2	203.854	203.854	3.27	47962	6.95		2000	2000	
Sr 88	88	1	He	276.233	276.233	2.85	944560	3.44		2000	2000	
Mo 95	95	1	He	212.309	212.309	3.11	371395	3.96		2000	2000	
Ag 107	107	1	He	49.823	49.823	1.82	249948	4.10		500	500	
Cd 111	111	1	He	195.188	195.188	2.08	162154	4.33		2000	2000	
Sn 118	118	1	He	203.324	203.324	0.98	443159	3.32		2000	2000	
Sb 121	121	1	He	217.049	217.049	2.12	535072	4.38		2000	2000	
Ba 137	137	1	He	256.911	256.911	1.87	278485	4.20		2000	2000	
Ce 140	140	1	He	205.128	205.128	3.99	2689202	6.24		2000	2000	
Gd 157	157	1	He	201.265	201.265	3.72	532290	4.19		2000	2000	
Au 197	197	1	He	204.260	204.260	2.39	698246	2.99		2000	2000	
Tl 205	205	1	He	51.288	51.288	2.64	394821	3.15		500	500	
Pb206	206	1	He	206.347	206.347	3.95	552315	4.38		12000	12000	
Pb207	207	1	He	213.372	213.372	3.56	489191	4.08		12000	12000	
Pb 208	208	1	He	210.919	210.919	3.49	2168274	3.95		12000	12000	
U 238	238	1	He	216.593	216.593	3.97	2071393	4.32		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6763480	0.97	7475944	90.47	80	120	
Sc_45	45	2	H2	39464781	7.45	44729383	88.23	80	120	
Ge_72	72	1	He	3561166	1.16	3950352	90.15	80	120	
Ge_72	72	2	H2	11764705	3.78	13199044	89.13	80	120	
In_115	115	1	He	4199568	2.34	4664305	90.04	80	120	
In_115	115	2	H2	10984790	1.48	12147161	90.43	80	120	
Tm_169	169	1	He	4270070	0.62	4835424	88.31	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-11-C MSD
Data File Name	057SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:40:16-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	197.555	197.555	3.78	47805	7.96		2000	2000	
Be 9	9	2	H2	201.836	201.836	4.13	34709	8.32		2000	2000	
B 11	11	2	H2	1033.739	1033.739	5.43	154707	9.48		10000	10000	
Na 23	23	1	He	2949.440	2949.440	4.01	2036915	3.74		100000	100000	
Mg 24	24	1	He	2755.311	2755.311	3.58	997195	3.40		100000	100000	
Al 27	27	1	He	998.055	998.055	3.48	172570	3.72		100000	100000	
P 31	31	1	He	988.668	988.668	3.93	10005	3.99		100000	100000	
K 39	39	1	He	1144.134	1144.134	3.18	539244	2.61		100000	100000	
Ca 40	40	2	H2	15584.805	15584.805	8.37	57130325	12.59		100000	100000	
Ti 47	47	1	He	198.685	198.685	3.71	22648	3.50		2000	2000	
V 51	51	1	He	199.000	199.000	3.44	578673	3.24		2000	2000	
Cr 52	52	1	He	199.669	199.669	4.44	695912	4.35		2000	2000	
Mn 55	55	1	He	198.236	198.236	4.25	482004	4.55		22000	22000	
Fe 56	56	1	He	1050.785	1050.785	4.22	3159665	4.36		100000	100000	
Co 59	59	1	He	200.632	200.632	3.54	983697	3.70		2000	2000	
Ni 60	60	1	He	200.531	200.531	3.02	246885	2.69		2000	2000	
Cu 63	63	1	He	202.656	202.656	3.48	660934	3.49		2000	2000	
Zn 66	66	1	He	213.683	213.683	3.36	122184	4.01		2000	2000	
As 75	75	1	He	196.432	196.432	3.42	78502	4.19		2000	2000	
Se 78	78	2	H2	200.557	200.557	4.62	47759	5.70		2000	2000	
Sr 88	88	1	He	277.113	277.113	3.31	959351	3.99		2000	2000	
Mo 95	95	1	He	210.158	210.158	2.97	372143	3.33		2000	2000	
Ag 107	107	1	He	49.810	49.810	3.48	249287	3.39		500	500	
Cd 111	111	1	He	196.336	196.336	3.32	162713	3.23		2000	2000	
Sn 118	118	1	He	203.053	203.053	3.82	441563	3.70		2000	2000	
Sb 121	121	1	He	215.565	215.565	3.66	530143	3.52		2000	2000	
Ba 137	137	1	He	257.901	257.901	3.54	278884	3.43		2000	2000	
Ce 140	140	1	He	207.275	207.275	4.60	2709978	4.52		2000	2000	
Gd 157	157	1	He	193.746	193.746	2.02	534130	3.88		2000	2000	
Au 197	197	1	He	195.344	195.344	2.70	695942	3.39		2000	2000	
Tl 205	205	1	He	48.719	48.719	2.90	390883	3.63		500	500	
Pb206	206	1	He	196.467	196.467	3.07	548021	3.43		12000	12000	
Pb207	207	1	He	202.340	202.340	3.94	483453	4.37		12000	12000	
Pb 208	208	1	He	200.345	200.345	3.27	2146427	3.78		12000	12000	
U 238	238	1	He	204.038	204.038	0.97	2033770	2.57		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6798856	1.58	7475944	90.94	80	120	
Sc_45	45	2	H2	40591359	4.18	44729383	90.75	80	120	
Ge_72	72	1	He	3605337	1.27	3950352	91.27	80	120	
Ge_72	72	2	H2	11912959	1.08	13199044	90.26	80	120	
In_115	115	1	He	4190770	0.14	4664305	89.85	80	120	
In_115	115	2	H2	11043608	2.05	12147161	90.92	80	120	
Tm_169	169	1	He	4451600	3.26	4835424	92.06	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-12-A
Data File Name	058SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:43:45-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.175	0.175	10.99	120	11.28		2000	2000	
Be 9	9	2	H2	0.019	0.019	23.46	4	28.57		2000	2000	
B 11	11	2	H2	44.784	44.784	3.64	9880	9.31		10000	10000	
Na 23	23	1	He	1740.564	1740.564	1.87	1241849	3.25		100000	100000	
Mg 24	24	1	He	1683.523	1683.523	1.39	624597	2.39		100000	100000	
Al 27	27	1	He	12.365	12.365	3.64	2464	1.91		100000	100000	
P 31	31	1	He	5.831	5.831	55.48	131	25.35		100000	100000	
K 39	39	1	He	163.927	163.927	0.96	135943	1.88		100000	100000	
Ca 40	40	2	H2	14339.351	14339.351	8.44	51394516	16.16		100000	100000	
Ti 47	47	1	He	0.470	0.470	10.01	59	10.41		2000	2000	
V 51	51	1	He	0.041	0.041	96.13	1557	6.78		2000	2000	
Cr 52	52	1	He	-0.157	-0.157	-30.65	3056	4.49		2000	2000	
Mn 55	55	1	He	1.734	1.734	5.73	4410	4.84		22000	22000	
Fe 56	56	1	He	28.827	28.827	1.95	92439	2.17		100000	100000	
Co 59	59	1	He	0.091	0.091	66.71	471	63.36		2000	2000	
Ni 60	60	1	He	0.263	0.263	18.84	357	17.43		2000	2000	
Cu 63	63	1	He	0.903	0.903	10.21	3355	8.92		2000	2000	
Zn 66	66	1	He	15.042	15.042	3.28	8727	2.05		2000	2000	
As 75	75	1	He	0.121	0.121	105.51	380	13.95		2000	2000	
Se 78	78	2	H2	0.205	0.205	26.44	59	20.80		2000	2000	
Sr 88	88	1	He	74.876	74.876	4.22	258124	3.00		2000	2000	
Mo 95	95	1	He	0.231	0.231	11.81	429	11.69		2000	2000	
Ag 107	107	1	He	0.014	0.014	84.18	134	43.11		500	500	
Cd 111	111	1	He	0.090	0.090	51.82	79	47.66		2000	2000	
Sn 118	118	1	He	0.132	0.132	26.38	1013	6.93		2000	2000	
Sb 121	121	1	He	-0.834	-0.834	-7.37	863	16.68		2000	2000	
Ba 137	137	1	He	56.843	56.843	3.84	62402	2.60		2000	2000	
Ce 140	140	1	He	0.063	0.063	67.49	867	63.66		2000	2000	
Gd 157	157	1	He	0.054	0.054	102.15	148	99.39		2000	2000	
Au 197	197	1	He	0.163	0.163	31.29	601	29.30		2000	2000	
Tl 205	205	1	He	0.019	0.019	68.20	230	44.22		500	500	
Pb206	206	1	He	0.145	0.145	36.76	504	27.92		12000	12000	
Pb207	207	1	He	0.130	0.130	27.27	389	19.74		12000	12000	
Pb 208	208	1	He	0.136	0.136	39.01	1769	30.06		12000	12000	
U 238	238	1	He	0.092	0.092	54.66	902	52.79		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6966853	1.47	7475944	93.19	80	120	
Sc_45	45	2	H2	39607467	7.68	44729383	88.55	80	120	
Ge_72	72	1	He	3589976	1.20	3950352	90.88	80	120	
Ge_72	72	2	H2	11673054	4.83	13199044	88.44	80	120	
In_115	115	1	He	4254934	1.67	4664305	91.22	80	120	
In_115	115	2	H2	10685941	1.42	12147161	87.97	80	120	
Tm_169	169	1	He	4385023	1.87	4835424	90.69	80	120	

Sample Table

Sample Name	320-22768-A-13-A
Data File Name	059SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:47:17-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.123	0.123	30.42	106	13.95		2000	2000	
Be 9	9	2	H2	0.016	0.016	54.49	3	50.00		2000	2000	
B 11	11	2	H2	33.765	33.765	3.68	8216	7.61		10000	10000	
Na 23	23	1	He	1848.343	1848.343	3.86	1292882	2.53		100000	100000	
Mg 24	24	1	He	1745.871	1745.871	4.94	635697	3.46		100000	100000	
Al 27	27	1	He	14.100	14.100	1.77	2722	1.11		100000	100000	
P 31	31	1	He	8.564	8.564	5.40	156	4.62		100000	100000	
K 39	39	1	He	186.452	186.452	7.18	142832	2.24		100000	100000	
Ca 40	40	2	H2	14052.913	14052.913	8.27	49746404	14.02		100000	100000	
Ti 47	47	1	He	0.644	0.644	24.19	77	21.06		2000	2000	
V 51	51	1	He	0.009	0.009	201.79	1434	1.71		2000	2000	
Cr 52	52	1	He	-0.268	-0.268	-11.28	2613	2.61		2000	2000	
Mn 55	55	1	He	1.583	1.583	3.23	3962	3.21		22000	22000	
Fe 56	56	1	He	20.506	20.506	5.48	65591	3.46		100000	100000	
Co 59	59	1	He	0.041	0.041	9.24	218	9.04		2000	2000	
Ni 60	60	1	He	0.194	0.194	10.01	265	8.15		2000	2000	
Cu 63	63	1	He	0.675	0.675	12.07	2544	8.57		2000	2000	
Zn 66	66	1	He	14.166	14.166	0.88	8526	2.05		2000	2000	
As 75	75	1	He	-0.005	-0.005	-694.18	342	5.86		2000	2000	
Se 78	78	2	H2	0.121	0.121	15.57	40	12.44		2000	2000	
Sr 88	88	1	He	73.819	73.819	2.27	263743	3.53		2000	2000	
Mo 95	95	1	He	0.123	0.123	15.07	247	11.70		2000	2000	
Ag 107	107	1	He	0.004	0.004	132.07	86	33.13		500	500	
Cd 111	111	1	He	0.042	0.042	14.36	39	12.80		2000	2000	
Sn 118	118	1	He	0.079	0.079	48.12	902	9.51		2000	2000	
Sb 121	121	1	He	-0.918	-0.918	-0.55	660	2.02		2000	2000	
Ba 137	137	1	He	57.996	57.996	4.23	63950	4.19		2000	2000	
Ce 140	140	1	He	0.024	0.024	5.46	347	5.09		2000	2000	
Gd 157	157	1	He	0.008	0.008	23.86	24	20.83		2000	2000	
Au 197	197	1	He	0.029	0.029	11.10	131	9.62		2000	2000	
Tl 205	205	1	He	0.009	0.009	14.72	154	8.17		500	500	
Pb206	206	1	He	0.099	0.099	4.58	382	2.80		12000	12000	
Pb207	207	1	He	0.092	0.092	10.96	302	7.18		12000	12000	
Pb 208	208	1	He	0.102	0.102	2.25	1430	2.84		12000	12000	
U 238	238	1	He	0.033	0.033	2.22	334	3.50		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6841514	1.84	7475944	91.51	80	120	
Sc_45	45	2	H2	39164472	5.85	44729383	87.56	80	120	
Ge_72	72	1	He	3718901	1.93	3950352	94.14	80	120	
Ge_72	72	2	H2	11681211	1.73	13199044	88.50	80	120	
In_115	115	1	He	4272328	0.15	4664305	91.60	80	120	
In_115	115	2	H2	10711603	2.25	12147161	88.18	80	120	
Tm_169	169	1	He	4435902	1.33	4835424	91.74	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	060_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:50:51-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	103.876	4.904	24561	10.56	100	103.9	90	110	
Be 9	9	2	H2	103.281	4.887	17331	10.94	100	103.3	90	110	
Na 23	23	1	He	5062.005	3.313	3418875	1.92	5100	99.3	90	110	
Mg 24	24	1	He	5069.327	0.851	1803190	2.29	5100	99.4	90	110	
Al 27	27	1	He	5075.178	2.782	861343	3.07	5100	99.5	90	110	
P 31	31	1	He	5018.405	2.606	49636	3.01	5000	100.4	90	110	
K 39	39	1	He	5112.393	1.829	2147700	1.35	5100	100.2	90	110	
Ca 40	40	2	H2	5342.083	11.041	19159559	17.42	5100	104.7	90	110	
Ti 47	47	1	He	202.032	2.493	22631	1.41	200	101.0	90	110	
V 51	51	1	He	101.980	2.776	292107	2.29	100	102.0	90	110	
Cr 52	52	1	He	101.926	2.120	350877	2.76	100	101.9	90	110	
Mn 55	55	1	He	102.022	2.524	243792	1.73	100	102.0	90	110	
Fe 56	56	1	He	5135.029	1.617	15164975	3.33	5100	100.7	90	110	
Co 59	59	1	He	102.010	1.986	491586	2.64	100	102.0	90	110	
Ni 60	60	1	He	103.861	1.428	125704	2.37	100	103.9	90	110	
Cu 63	63	1	He	102.952	2.499	330139	2.36	100	103.0	90	110	
Zn 66	66	1	He	102.060	5.676	57851	2.76	100	102.1	90	110	
As 75	75	1	He	100.625	4.851	39967	1.78	100	100.6	90	110	
Se 78	78	2	H2	104.471	6.652	24588	9.39	100	104.5	90	110	
Sr 88	88	1	He	100.735	5.306	345275	2.00	100	100.7	90	110	
Mo 95	95	1	He	203.257	4.273	356414	2.48	200	101.6	90	110	
Ag 107	107	1	He	50.503	3.440	249019	2.46	50	101.0	90	110	
Cd 111	111	1	He	100.127	3.143	81757	2.06	100	100.1	90	110	
Sn 118	118	1	He	102.207	3.222	219329	2.15	100	102.2	90	110	
Sb 121	121	1	He	50.192	4.672	123792	3.57	50	100.4	90	110	
Ba 137	137	1	He	102.516	4.352	109222	3.33	100	102.5	90	110	
Ce 140	140	1	He	101.159	4.098	1303015	3.17	100	101.2	90	110	
Gd 157	157	1	He	99.958	3.710	264653	1.91	100	100.0	90	110	
Au 197	197	1	He	102.881	4.403	352076	2.69	100	102.9	90	110	
Tl 205	205	1	He	50.644	3.496	390330	1.91	50	101.3	90	110	
Pb206	206	1	He	102.633	4.371	275055	2.74	100	102.6	1	10000	
Pb207	207	1	He	103.037	3.521	236541	1.89	100	103.0	1	10000	
Pb 208	208	1	He	102.939	4.035	1059585	2.51	100	102.9	90	110	
U 238	238	1	He	101.547	3.342	972328	1.79	100	101.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6683470	3.12	7475944	89.40	80	120	
Sc_45	45	2	H2	39583076	6.49	44729383	88.49	80	120	
Ge_72	72	1	He	3573439	3.83	3950352	90.46	80	120	
Ge_72	72	2	H2	11761274	2.72	13199044	89.11	80	120	
In_115	115	1	He	4129765	1.23	4664305	88.54	80	120	
In_115	115	2	H2	10901279	2.53	12147161	89.74	80	120	
Tm_169	169	1	He	4277288	1.98	4835424	88.46	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	061_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:54:18-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.058	47.0	94	5.8	10	
Be 9	9	2	H2	0.004	145.2	1	100.0	1	
Na 23	23	1	He	0.867	50.6	23567	1.2	50	
Mg 24	24	1	He	0.533	45.2	517	16.9	50	
Al 27	27	1	He	0.680	15.7	386	4.6	50	
P 31	31	1	He	-1.452	-14.2	54	3.7	50	
K 39	39	1	He	6.348	12.6	66899	0.4	50	
Ca 40	40	2	H2	0.845	46.2	35889	10.2	50	
Ti 47	47	1	He	0.080	25.4	13	18.2	5	
V 51	51	1	He	-0.184	-4.2	861	2.7	10	
Cr 52	52	1	He	-0.009	-269.9	3476	2.3	2	
Mn 55	55	1	He	0.005	65.7	101	8.0	1	
Fe 56	56	1	He	0.561	9.3	5280	3.1	50	
Co 59	59	1	He	0.005	39.8	44	24.1	1	
Ni 60	60	1	He	0.010	29.7	36	9.6	2	
Cu 63	63	1	He	0.016	72.6	381	10.3	2	
Zn 66	66	1	He	-0.013	-98.1	175	5.3	5	
As 75	75	1	He	-0.047	-46.8	321	4.7	2	
Se 78	78	2	H2	0.048	43.5	24	21.7	2	
Sr 88	88	1	He	0.011	85.1	215	12.7	5	
Mo 95	95	1	He	0.056	45.5	122	36.0	2	
Ag 107	107	1	He	0.002	314.1	73	40.4	1	
Cd 111	111	1	He	0.008	33.0	11	20.4	1	
Sn 118	118	1	He	0.090	3.4	923	1.0	10	
Sb 121	121	1	He	-0.507	-6.3	1680	5.2	2	
Ba 137	137	1	He	0.009	163.5	27	57.3	1	
Ce 140	140	1	He	0.006	53.4	114	38.5	5	
Gd 157	157	1	He	0.009	59.2	26	49.4	1	
Au 197	197	1	He	0.089	18.3	341	12.7	5	
Tl 205	205	1	He	0.004	28.0	113	10.6	1	
Pb206	206	1	He	0.007	21.7	127	5.3	1	
Pb207	207	1	He	0.010	130.3	106	22.8	1	
Pb 208	208	1	He	0.012	42.0	474	6.6	1	
U 238	238	1	He	0.021	2.1	212	6.3	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6759700	0.13	7475944	90.42	80	120	
Sc_45	45	2	H2	40550465	6.22	44729383	90.66	80	120	
Ge_72	72	1	He	3679998	2.69	3950352	93.16	80	120	
Ge_72	72	2	H2	12132699	1.06	13199044	91.92	80	120	
In_115	115	1	He	4262925	0.41	4664305	91.39	80	120	
In_115	115	2	H2	10973234	1.10	12147161	90.34	80	120	
Tm_169	169	1	He	4429821	4.66	4835424	91.61	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	062_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T12:57:54-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	103.632	3.693	24744	8.25	100	103.6	90	110	
Be 9	9	2	H2	102.472	3.961	17361	8.56	100	102.5	90	110	
Na 23	23	1	He	5035.952	2.441	3530798	2.14	5100	98.7	90	110	
Mg 24	24	1	He	4988.417	3.359	1841139	2.95	5100	97.8	90	110	
Al 27	27	1	He	5011.121	2.569	882662	2.87	5100	98.3	90	110	
P 31	31	1	He	5006.279	3.043	51391	3.49	5000	100.1	90	110	
K 39	39	1	He	5046.537	2.659	2200969	1.80	5100	99.0	90	110	
Ca 40	40	2	H2	5327.309	10.194	19270530	14.53	5100	104.5	90	110	
Ti 47	47	1	He	203.321	3.908	23644	4.38	200	101.7	90	110	
V 51	51	1	He	100.959	2.618	300162	2.53	100	101.0	90	110	
Cr 52	52	1	He	100.843	3.108	360284	3.04	100	100.8	90	110	
Mn 55	55	1	He	101.675	3.339	252184	3.30	100	101.7	90	110	
Fe 56	56	1	He	5065.026	2.920	15520501	3.06	5100	99.3	90	110	
Co 59	59	1	He	100.383	2.191	502022	2.39	100	100.4	90	110	
Ni 60	60	1	He	101.987	3.095	128099	3.37	100	102.0	90	110	
Cu 63	63	1	He	101.936	3.241	339294	3.65	100	101.9	90	110	
Zn 66	66	1	He	97.836	1.029	58940	3.12	100	97.8	90	110	
As 75	75	1	He	96.705	1.547	40826	3.51	100	96.7	90	110	
Se 78	78	2	H2	104.218	4.934	24820	5.25	100	104.2	90	110	
Sr 88	88	1	He	97.604	0.719	355477	2.61	100	97.6	90	110	
Mo 95	95	1	He	194.934	0.066	363046	2.38	200	97.5	90	110	
Ag 107	107	1	He	49.229	3.097	254069	2.79	50	98.5	90	110	
Cd 111	111	1	He	98.072	3.199	83820	3.14	100	98.1	90	110	
Sn 118	118	1	He	98.599	3.518	221490	3.33	100	98.6	90	110	
Sb 121	121	1	He	49.445	2.434	127703	2.42	50	98.9	90	110	
Ba 137	137	1	He	100.729	2.118	112338	1.92	100	100.7	90	110	
Ce 140	140	1	He	99.262	4.211	1338313	4.03	100	99.3	90	110	
Gd 157	157	1	He	99.468	2.857	275141	2.94	100	99.5	90	110	
Au 197	197	1	He	98.868	3.609	353500	3.56	100	98.9	90	110	
Tl 205	205	1	He	49.170	3.530	395910	3.57	50	98.3	90	110	
Pb206	206	1	He	100.821	3.015	282296	2.94	100	100.8	1	10000	
Pb207	207	1	He	99.377	3.075	238332	2.97	100	99.4	1	10000	
Pb 208	208	1	He	100.523	2.895	1080974	2.77	100	100.5	90	110	
U 238	238	1	He	101.119	2.175	1011500	2.42	100	101.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6934339	0.88	7475944	92.76	80	120	
Sc_45	45	2	H2	39991889	4.76	44729383	89.41	80	120	
Ge_72	72	1	He	3791941	2.35	3950352	95.99	80	120	
Ge_72	72	2	H2	11914922	1.44	13199044	90.27	80	120	
In_115	115	1	He	4321731	0.50	4664305	92.66	80	120	
In_115	115	2	H2	11001780	2.83	12147161	90.57	80	120	
Tm_169	169	1	He	4466574	0.70	4835424	92.37	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	063_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:01:22-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.064	57.9	96	7.8	10	
Be 9	9	2	H2	0.006	129.5	1	94.4	1	
Na 23	23	1	He	0.331	148.1	24009	0.0	50	
Mg 24	24	1	He	0.424	29.9	494	10.5	50	
Al 27	27	1	He	0.492	10.0	366	2.5	50	
P 31	31	1	He	-0.677	-216.2	64	24.8	50	
K 39	39	1	He	1.167	208.3	67010	0.8	50	
Ca 40	40	2	H2	0.360	109.2	34401	10.1	50	
Ti 47	47	1	He	0.031	139.3	7	68.6	5	
V 51	51	1	He	-0.198	-3.9	849	2.3	10	
Cr 52	52	1	He	0.004	1049.3	3643	5.1	2	
Mn 55	55	1	He	-0.002	-467.6	88	20.8	1	
Fe 56	56	1	He	0.467	23.5	5177	7.6	50	
Co 59	59	1	He	0.008	29.2	57	20.4	1	
Ni 60	60	1	He	0.006	72.7	33	15.4	2	
Cu 63	63	1	He	0.014	58.4	387	7.3	2	
Zn 66	66	1	He	0.008	442.3	191	13.5	5	
As 75	75	1	He	-0.020	-132.5	339	5.2	2	
Se 78	78	2	H2	0.027	61.8	19	24.2	2	
Sr 88	88	1	He	0.007	72.2	208	10.6	5	
Mo 95	95	1	He	0.056	41.9	124	33.3	2	
Ag 107	107	1	He	0.003	132.8	82	24.4	1	
Cd 111	111	1	He	0.008	93.8	11	56.7	1	
Sn 118	118	1	He	0.120	32.4	1042	9.4	10	
Sb 121	121	1	He	-0.487	-6.2	1820	5.0	2	
Ba 137	137	1	He	0.003	93.9	22	17.3	1	
Ce 140	140	1	He	0.006	45.5	124	33.5	5	
Gd 157	157	1	He	0.004	51.4	13	43.3	1	
Au 197	197	1	He	0.090	18.9	347	17.0	5	
Tl 205	205	1	He	0.003	126.0	102	29.4	1	
Pb206	206	1	He	0.004	212.1	117	17.8	1	
Pb207	207	1	He	-0.001	-1145.4	80	48.0	1	
Pb 208	208	1	He	0.008	52.1	430	10.1	1	
U 238	238	1	He	0.018	19.7	187	18.8	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6995119	1.40	7475944	93.57	80	120	
Sc_45	45	2	H2	40890323	5.77	44729383	91.42	80	120	
Ge_72	72	1	He	3758634	2.10	3950352	95.15	80	120	
Ge_72	72	2	H2	12230316	2.52	13199044	92.66	80	120	
In_115	115	1	He	4483952	0.81	4664305	96.13	80	120	
In_115	115	2	H2	11436199	1.67	12147161	94.15	80	120	
Tm_169	169	1	He	4417557	0.40	4835424	91.36	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-9-A
Data File Name	064SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:04:58-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.106	0.106	6.69	108	5.91		2000	2000	
Be 9	9	2	H2	0.010	0.010	33.54	2	25.00		2000	2000	
B 11	11	2	H2	23.747	23.747	5.16	7191	6.91		10000	10000	
Na 23	23	1	He	4297.649	4297.649	6.30	3040567	4.12		100000	100000	
Mg 24	24	1	He	6757.045	6757.045	6.69	2513467	4.45		100000	100000	
Al 27	27	1	He	3.211	3.211	12.52	848	6.29		100000	100000	
P 31	31	1	He	9.112	9.112	36.99	165	19.37		100000	100000	
K 39	39	1	He	305.877	305.877	5.10	196984	1.08		100000	100000	
Ca 40	40	2	H2	37650.493	37650.493	8.11	140681563	12.57		100000	100000	
Ti 47	47	1	He	0.286	0.286	15.16	37	15.46		2000	2000	
V 51	51	1	He	-0.020	-0.020	-100.24	1382	4.49		2000	2000	
Cr 52	52	1	He	-0.171	-0.171	-13.73	3018	0.77		2000	2000	
Mn 55	55	1	He	1.458	1.458	6.92	3736	4.74		22000	22000	
Fe 56	56	1	He	3.964	3.964	6.51	15970	2.72		100000	100000	
Co 59	59	1	He	0.080	0.080	15.51	423	12.81		2000	2000	
Ni 60	60	1	He	0.506	0.506	3.96	665	2.13		2000	2000	
Cu 63	63	1	He	1.062	1.062	3.77	3901	1.83		2000	2000	
Zn 66	66	1	He	2.515	2.515	3.88	1677	2.82		2000	2000	
As 75	75	1	He	0.033	0.033	181.46	360	5.36		2000	2000	
Se 78	78	2	H2	0.216	0.216	5.84	64	5.00		2000	2000	
Sr 88	88	1	He	203.278	203.278	2.80	731367	2.04		2000	2000	
Mo 95	95	1	He	0.235	0.235	17.75	454	15.07		2000	2000	
Ag 107	107	1	He	-0.002	-0.002	-40.82	57	5.89		500	500	
Cd 111	111	1	He	0.026	0.026	44.33	27	38.49		2000	2000	
Sn 118	118	1	He	0.090	0.090	3.44	947	2.79		2000	2000	
Sb 121	121	1	He	-0.804	-0.804	-5.48	963	10.52		2000	2000	
Ba 137	137	1	He	106.235	106.235	4.63	119591	3.10		2000	2000	
Ce 140	140	1	He	0.026	0.026	3.03	388	4.89		2000	2000	
Gd 157	157	1	He	0.013	0.013	49.11	39	47.20		2000	2000	
Au 197	197	1	He	0.027	0.027	15.48	127	12.06		2000	2000	
Tl 205	205	1	He	0.007	0.007	52.16	136	22.85		500	500	
Pb206	206	1	He	0.037	0.037	31.74	213	14.91		12000	12000	
Pb207	207	1	He	0.031	0.031	33.38	159	13.97		12000	12000	
Pb 208	208	1	He	0.039	0.039	10.52	770	4.13		12000	12000	
U 238	238	1	He	0.174	0.174	3.21	1760	4.67		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6995344	2.30	7475944	93.57	80	120	
Sc_45	45	2	H2	41387339	4.45	44729383	92.53	80	120	
Ge_72	72	1	He	3747866	1.74	3950352	94.87	80	120	
Ge_72	72	2	H2	12162126	2.72	13199044	92.14	80	120	
In_115	115	1	He	4364662	2.26	4664305	93.58	80	120	
In_115	115	2	H2	11326145	0.16	12147161	93.24	80	120	
Tm_169	169	1	He	4487732	1.58	4835424	92.81	80	120	

Sample Report

Sample Table

Sample Name	sd 320-22768-A-9-A@5
Data File Name	065SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:08:27-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.055	0.055	56.03	95	4.52		2000	2000	
Be 9	9	2	H2	0.002	0.002	219.86	1	114.56		2000	2000	
B 11	11	2	H2	19.473	19.473	3.78	6515	7.21		10000	10000	
Na 23	23	1	He	833.725	833.725	5.04	623432	3.43		100000	100000	
Mg 24	24	1	He	1314.277	1314.277	4.35	500810	2.94		100000	100000	
Al 27	27	1	He	5.013	5.013	15.46	1195	10.09		100000	100000	
P 31	31	1	He	0.077	0.077	473.86	73	4.17		100000	100000	
K 39	39	1	He	57.673	57.673	13.05	93226	2.21		100000	100000	
Ca 40	40	2	H2	7779.506	7779.506	6.44	28994979	14.89		100000	100000	
Ti 47	47	1	He	0.041	0.041	66.28	9	35.25		2000	2000	
V 51	51	1	He	-0.025	-0.025	-91.77	1397	3.20		2000	2000	
Cr 52	52	1	He	0.007	0.007	501.19	3736	1.64		2000	2000	
Mn 55	55	1	He	0.325	0.325	6.55	925	4.02		22000	22000	
Fe 56	56	1	He	2.199	2.199	8.17	10766	3.58		100000	100000	
Co 59	59	1	He	0.043	0.043	5.47	241	4.17		2000	2000	
Ni 60	60	1	He	0.202	0.202	12.38	288	11.56		2000	2000	
Cu 63	63	1	He	1.087	1.087	5.32	4074	3.49		2000	2000	
Zn 66	66	1	He	0.843	0.843	10.65	713	11.08		2000	2000	
As 75	75	1	He	-0.072	-0.072	-103.19	329	13.06		2000	2000	
Se 78	78	2	H2	0.070	0.070	43.06	29	24.14		2000	2000	
Sr 88	88	1	He	39.566	39.566	4.10	147955	4.47		2000	2000	
Mo 95	95	1	He	0.045	0.045	20.74	109	19.68		2000	2000	
Ag 107	107	1	He	0.000	0.000	-150.06	63	5.27		500	500	
Cd 111	111	1	He	0.006	0.006	70.24	10	40.00		2000	2000	
Sn 118	118	1	He	0.078	0.078	18.83	923	3.44		2000	2000	
Sb 121	121	1	He	-0.723	-0.723	-5.11	1174	8.01		2000	2000	
Ba 137	137	1	He	20.977	20.977	2.65	23735	2.34		2000	2000	
Ce 140	140	1	He	0.009	0.009	26.42	161	20.72		2000	2000	
Gd 157	157	1	He	0.004	0.004	17.58	12	15.73		2000	2000	
Au 197	197	1	He	0.013	0.013	16.15	78	9.90		2000	2000	
Tl 205	205	1	He	-0.003	-0.003	-82.93	58	35.25		500	500	
Pb206	206	1	He	0.011	0.011	129.88	143	28.20		12000	12000	
Pb207	207	1	He	0.025	0.025	73.72	148	30.79		12000	12000	
Pb 208	208	1	He	0.021	0.021	16.69	588	7.62		12000	12000	
U 238	238	1	He	0.034	0.034	15.71	358	16.98		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7158191	1.89	7475944	95.75	80	120	
Sc_45	45	2	H2	41197419	8.47	44729383	92.10	80	120	
Ge_72	72	1	He	3891438	3.32	3950352	98.51	80	120	
Ge_72	72	2	H2	12164718	3.35	13199044	92.16	80	120	
In_115	115	1	He	4382257	0.67	4664305	93.95	80	120	
In_115	115	2	H2	11465244	4.55	12147161	94.39	80	120	
Tm_169	169	1	He	4588952	1.60	4835424	94.90	80	120	

Sample Report

Sample Table

Sample Name	pds 320-22768-A-9-A
Data File Name	066SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:12:02-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	428.983	428.983	1.01	103493	7.57		2000	2000	
Be 9	9	2	H2	435.738	435.738	0.96	74764	7.50		2000	2000	
B 11	11	2	H2	2142.768	2142.768	3.09	316315	9.66		10000	10000	
Na 23	23	1	He	6011.653	6011.653	0.97	4341668	2.08		100000	100000	
Mg 24	24	1	He	8233.546	8233.546	0.75	3133465	1.71		100000	100000	
Al 27	27	1	He	2224.740	2224.740	2.12	404201	2.67		100000	100000	
P 31	31	1	He	2097.666	2097.666	1.76	22240	1.23		100000	100000	
K 39	39	1	He	2286.751	2286.751	1.62	1065601	1.71		100000	100000	
Ca 40	40	2	H2	41309.604	41309.604	4.87	151119675	11.51		100000	100000	
Ti 47	47	1	He	417.837	417.837	1.58	50097	2.95		2000	2000	
V 51	51	1	He	415.881	415.881	1.21	1270401	2.21		2000	2000	
Cr 52	52	1	He	430.718	430.718	1.85	1575119	3.93		2000	2000	
Mn 55	55	1	He	411.255	411.255	0.67	1051564	2.17		22000	22000	
Fe 56	56	1	He	2120.568	2120.568	0.23	6703017	2.47		100000	100000	
Co 59	59	1	He	417.345	417.345	0.85	2152458	3.08		2000	2000	
Ni 60	60	1	He	411.365	411.365	0.89	532702	2.35		2000	2000	
Cu 63	63	1	He	418.152	418.152	2.19	1434068	3.19		2000	2000	
Zn 66	66	1	He	408.548	408.548	3.29	246184	1.33		2000	2000	
As 75	75	1	He	404.414	404.414	3.83	170057	2.19		2000	2000	
Se 78	78	2	H2	419.516	419.516	4.93	101953	6.10		2000	2000	
Sr 88	88	1	He	637.131	637.131	2.28	2326534	2.34		2000	2000	
Mo 95	95	1	He	424.634	424.634	3.60	792967	1.54		2000	2000	
Ag 107	107	1	He	100.945	100.945	4.11	534246	3.02		500	500	
Cd 111	111	1	He	397.952	397.952	3.85	348811	2.80		2000	2000	
Sn 118	118	1	He	422.014	422.014	3.44	969815	2.16		2000	2000	
Sb 121	121	1	He	450.420	450.420	3.72	1168208	2.32		2000	2000	
Ba 137	137	1	He	511.070	511.070	3.79	584505	2.78		2000	2000	
Ce 140	140	1	He	407.859	407.859	4.27	5640565	3.86		2000	2000	
Gd 157	157	1	He	409.208	409.208	3.76	1151810	2.77		2000	2000	
Au 197	197	1	He	416.950	416.950	2.98	1517164	2.66		2000	2000	
Tl 205	205	1	He	103.424	103.424	3.33	847349	2.55		500	500	
Pb206	206	1	He	415.106	415.106	2.69	1182488	1.69		12000	12000	
Pb207	207	1	He	424.354	424.354	3.64	1035390	2.80		12000	12000	
Pb 208	208	1	He	422.696	422.696	3.05	4624383	1.67		12000	12000	
U 238	238	1	He	420.367	420.367	4.36	4278135	2.88		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7150579	2.24	7475944	95.65	80	120	
Sc_45	45	2	H2	40530447	6.54	44729383	90.61	80	120	
Ge_72	72	1	He	3804388	2.51	3950352	96.31	80	120	
Ge_72	72	2	H2	12158676	1.33	13199044	92.12	80	120	
In_115	115	1	He	4433908	2.07	4664305	95.06	80	120	
In_115	115	2	H2	11009817	2.53	12147161	90.64	80	120	
Tm_169	169	1	He	4546367	1.48	4835424	94.02	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-9-B MS
Data File Name	067SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:15:24-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	204.698	204.698	2.02	51037	8.74		2000	2000	
Be 9	9	2	H2	208.737	208.737	1.54	36976	8.25		2000	2000	
B 11	11	2	H2	1068.735	1068.735	4.44	164775	11.04		10000	10000	
Na 23	23	1	He	5039.663	5039.663	2.13	3641137	0.79		100000	100000	
Mg 24	24	1	He	7499.142	7499.142	1.93	2852660	2.28		100000	100000	
Al 27	27	1	He	1000.107	1000.107	1.95	181776	2.38		100000	100000	
P 31	31	1	He	1019.319	1019.319	2.52	10840	2.15		100000	100000	
K 39	39	1	He	1271.563	1271.563	2.26	622370	1.04		100000	100000	
Ca 40	40	2	H2	39847.205	39847.205	8.20	150698128	15.05		100000	100000	
Ti 47	47	1	He	202.621	202.621	0.59	24288	3.20		2000	2000	
V 51	51	1	He	201.142	201.142	1.75	614880	2.10		2000	2000	
Cr 52	52	1	He	199.682	199.682	1.42	731654	2.04		2000	2000	
Mn 55	55	1	He	200.032	200.032	1.31	511291	2.36		22000	22000	
Fe 56	56	1	He	1069.929	1069.929	0.72	3382885	3.31		100000	100000	
Co 59	59	1	He	201.220	201.220	2.29	1036900	1.08		2000	2000	
Ni 60	60	1	He	200.486	200.486	2.55	259454	1.84		2000	2000	
Cu 63	63	1	He	200.778	200.778	2.07	688377	2.52		2000	2000	
Zn 66	66	1	He	200.650	200.650	1.76	119525	2.00		2000	2000	
As 75	75	1	He	199.022	199.022	2.40	82837	1.92		2000	2000	
Se 78	78	2	H2	205.780	205.780	5.97	50482	7.49		2000	2000	
Sr 88	88	1	He	407.983	407.983	3.15	1470943	2.41		2000	2000	
Mo 95	95	1	He	214.159	214.159	2.57	395000	1.56		2000	2000	
Ag 107	107	1	He	48.914	48.914	0.71	261970	2.00		500	500	
Cd 111	111	1	He	191.596	191.596	1.55	169903	1.68		2000	2000	
Sn 118	118	1	He	201.921	201.921	1.47	469905	2.41		2000	2000	
Sb 121	121	1	He	215.593	215.593	1.61	567347	1.80		2000	2000	
Ba 137	137	1	He	300.201	300.201	1.18	347381	2.02		2000	2000	
Ce 140	140	1	He	198.181	198.181	1.13	2773037	2.70		2000	2000	
Gd 157	157	1	He	200.690	200.690	5.45	566435	1.44		2000	2000	
Au 197	197	1	He	198.342	198.342	5.49	723596	1.64		2000	2000	
Tl 205	205	1	He	50.322	50.322	5.38	413448	1.50		500	500	
Pb206	206	1	He	200.461	200.461	6.83	572416	2.77		12000	12000	
Pb207	207	1	He	206.314	206.314	6.41	504673	2.43		12000	12000	
Pb 208	208	1	He	205.021	205.021	6.12	2248944	2.16		12000	12000	
U 238	238	1	He	209.160	209.160	5.57	2134872	2.17		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7148030	2.75	7475944	95.61	80	120	
Sc_45	45	2	H2	41834719	6.82	44729383	93.53	80	120	
Ge_72	72	1	He	3756511	2.23	3950352	95.09	80	120	
Ge_72	72	2	H2	12269385	1.69	13199044	92.96	80	120	
In_115	115	1	He	4484427	1.58	4664305	96.14	80	120	
In_115	115	2	H2	11495497	2.65	12147161	94.64	80	120	
Tm_169	169	1	He	4564009	3.93	4835424	94.39	80	120	

Sample Table

Sample Name	320-22768-A-9-C MSD
Data File Name	068SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:18:56-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	199.947	199.947	3.99	48935	9.33		2000	2000	
Be 9	9	2	H2	204.175	204.175	4.04	35509	9.34		2000	2000	
B 11	11	2	H2	1036.981	1036.981	6.65	157026	11.86		10000	10000	
Na 23	23	1	He	5094.994	5094.994	2.54	3715062	3.90		100000	100000	
Mg 24	24	1	He	7583.517	7583.517	3.69	2911719	5.35		100000	100000	
Al 27	27	1	He	1009.273	1009.273	3.56	185233	6.38		100000	100000	
P 31	31	1	He	1026.021	1026.021	1.93	11011	3.24		100000	100000	
K 39	39	1	He	1281.588	1281.588	1.81	632724	4.41		100000	100000	
Ca 40	40	2	H2	39547.506	39547.506	9.80	146688731	15.20		100000	100000	
Ti 47	47	1	He	203.149	203.149	1.97	24575	4.79		2000	2000	
V 51	51	1	He	202.628	202.628	3.37	625453	6.19		2000	2000	
Cr 52	52	1	He	200.605	200.605	2.10	741987	4.93		2000	2000	
Mn 55	55	1	He	200.680	200.680	2.76	517847	5.58		22000	22000	
Fe 56	56	1	He	1067.057	1067.057	2.72	3405141	5.42		100000	100000	
Co 59	59	1	He	202.316	202.316	2.71	1052777	5.54		2000	2000	
Ni 60	60	1	He	201.518	201.518	2.89	263347	5.72		2000	2000	
Cu 63	63	1	He	202.689	202.689	2.15	701522	4.99		2000	2000	
Zn 66	66	1	He	202.938	202.938	4.57	122930	6.50		2000	2000	
As 75	75	1	He	199.883	199.883	2.73	84587	4.62		2000	2000	
Se 78	78	2	H2	202.230	202.230	3.54	48471	7.34		2000	2000	
Sr 88	88	1	He	410.174	410.174	4.57	1504210	6.67		2000	2000	
Mo 95	95	1	He	215.153	215.153	3.93	403536	5.57		2000	2000	
Ag 107	107	1	He	48.618	48.618	3.29	265645	6.09		500	500	
Cd 111	111	1	He	193.164	193.164	2.82	174757	5.63		2000	2000	
Sn 118	118	1	He	201.049	201.049	2.85	477277	5.60		2000	2000	
Sb 121	121	1	He	213.201	213.201	2.41	572382	5.22		2000	2000	
Ba 137	137	1	He	298.648	298.648	2.19	352505	5.02		2000	2000	
Ce 140	140	1	He	201.354	201.354	2.17	2873500	4.97		2000	2000	
Gd 157	157	1	He	201.620	201.620	6.78	572623	5.68		2000	2000	
Au 197	197	1	He	198.845	198.845	6.61	729962	5.45		2000	2000	
Tl 205	205	1	He	50.733	50.733	5.92	419463	4.94		500	500	
Pb206	206	1	He	201.207	201.207	5.74	578383	4.55		12000	12000	
Pb207	207	1	He	208.284	208.284	6.57	512788	5.35		12000	12000	
Pb 208	208	1	He	205.600	205.600	6.50	2269747	5.30		12000	12000	
U 238	238	1	He	213.644	213.644	6.14	2194038	4.64		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7211653	2.86	7475944	96.46	80	120	
Sc_45	45	2	H2	41039979	5.31	44729383	91.75	80	120	
Ge_72	72	1	He	3817684	2.71	3950352	96.64	80	120	
Ge_72	72	2	H2	11985704	4.41	13199044	90.81	80	120	
In_115	115	1	He	4572351	2.85	4664305	98.03	80	120	
In_115	115	2	H2	11233380	0.87	12147161	92.48	80	120	
Tm_169	169	1	He	4588745	1.78	4835424	94.90	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-10-A
Data File Name	069SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:22:23-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.264	0.264	24.45	147	5.92		2000	2000	
Be 9	9	2	H2	0.016	0.016	38.23	3	32.87		2000	2000	
B 11	11	2	H2	51.667	51.667	2.50	11371	7.75		10000	10000	
Na 23	23	1	He	4118.978	4118.978	4.93	2951837	3.49		100000	100000	
Mg 24	24	1	He	6705.548	6705.548	4.15	2526092	2.72		100000	100000	
Al 27	27	1	He	4.326	4.326	7.38	1059	4.53		100000	100000	
P 31	31	1	He	9.461	9.461	21.07	171	11.38		100000	100000	
K 39	39	1	He	314.257	314.257	4.36	203041	1.61		100000	100000	
Ca 40	40	2	H2	36980.340	36980.340	7.60	138632736	14.53		100000	100000	
Ti 47	47	1	He	0.199	0.199	44.49	27	37.55		2000	2000	
V 51	51	1	He	0.032	0.032	19.19	1556	2.56		2000	2000	
Cr 52	52	1	He	-0.142	-0.142	-17.65	3160	3.53		2000	2000	
Mn 55	55	1	He	4.000	4.000	3.59	10216	2.17		22000	22000	
Fe 56	56	1	He	5.432	5.432	5.29	20760	3.01		100000	100000	
Co 59	59	1	He	0.233	0.233	8.11	1209	6.59		2000	2000	
Ni 60	60	1	He	12.328	12.328	4.79	15824	3.40		2000	2000	
Cu 63	63	1	He	1.153	1.153	3.88	4256	2.15		2000	2000	
Zn 66	66	1	He	3.670	3.670	2.95	2448	1.39		2000	2000	
As 75	75	1	He	0.007	0.007	361.89	362	2.57		2000	2000	
Se 78	78	2	H2	0.273	0.273	20.00	81	17.89		2000	2000	
Sr 88	88	1	He	192.806	192.806	4.54	718256	2.92		2000	2000	
Mo 95	95	1	He	0.270	0.270	4.36	538	3.18		2000	2000	
Ag 107	107	1	He	0.007	0.007	108.29	103	38.03		500	500	
Cd 111	111	1	He	0.047	0.047	18.05	45	17.83		2000	2000	
Sn 118	118	1	He	0.252	0.252	29.99	1322	13.63		2000	2000	
Sb 121	121	1	He	-0.883	-0.883	-0.72	768	1.52		2000	2000	
Ba 137	137	1	He	102.544	102.544	4.07	116286	2.23		2000	2000	
Ce 140	140	1	He	0.037	0.037	11.28	536	8.63		2000	2000	
Gd 157	157	1	He	0.024	0.024	24.93	70	20.76		2000	2000	
Au 197	197	1	He	0.122	0.122	36.74	470	30.78		2000	2000	
Tl 205	205	1	He	0.017	0.017	26.52	217	15.15		500	500	
Pb206	206	1	He	0.056	0.056	11.93	271	9.55		12000	12000	
Pb207	207	1	He	0.055	0.055	19.75	221	8.30		12000	12000	
Pb 208	208	1	He	0.064	0.064	9.25	1054	5.33		12000	12000	
U 238	238	1	He	0.204	0.204	9.45	2085	6.37		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7080158	1.45	7475944	94.71	80	120	
Sc_45	45	2	H2	41483744	7.16	44729383	92.74	80	120	
Ge_72	72	1	He	3881615	1.65	3950352	98.26	80	120	
Ge_72	72	2	H2	12508242	3.90	13199044	94.77	80	120	
In_115	115	1	He	4396619	2.03	4664305	94.26	80	120	
In_115	115	2	H2	11472560	1.04	12147161	94.45	80	120	
Tm_169	169	1	He	4557804	3.82	4835424	94.26	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	070_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:25:53-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	101.939	1.328	24184	8.86	100	101.9	90	110	
Be 9	9	2	H2	99.337	2.202	16726	9.59	100	99.3	90	110	
Na 23	23	1	He	5106.404	2.085	3619722	2.45	5100	100.1	90	110	
Mg 24	24	1	He	4958.615	2.992	1850646	3.38	5100	97.2	90	110	
Al 27	27	1	He	4980.071	2.952	886941	3.56	5100	97.6	90	110	
P 31	31	1	He	4946.912	3.298	51346	3.94	5000	98.9	90	110	
K 39	39	1	He	4987.940	4.394	2200864	4.91	5100	97.8	90	110	
Ca 40	40	2	H2	5102.043	5.940	18345358	13.33	5100	100.0	90	110	
Ti 47	47	1	He	202.368	1.397	23791	1.80	200	101.2	90	110	
V 51	51	1	He	100.093	2.154	300907	2.60	100	100.1	90	110	
Cr 52	52	1	He	99.991	3.252	361256	3.73	100	100.0	90	110	
Mn 55	55	1	He	100.955	3.277	253199	3.88	100	101.0	90	110	
Fe 56	56	1	He	5058.100	2.968	15671942	3.58	5100	99.2	90	110	
Co 59	59	1	He	100.132	3.363	506350	3.97	100	100.1	90	110	
Ni 60	60	1	He	99.930	2.763	126911	3.40	100	99.9	90	110	
Cu 63	63	1	He	100.747	2.521	339047	3.14	100	100.7	90	110	
Zn 66	66	1	He	99.774	2.718	59539	3.70	100	99.8	90	110	
As 75	75	1	He	98.090	2.262	41011	2.99	100	98.1	90	110	
Se 78	78	2	H2	100.943	6.540	23977	7.88	100	100.9	90	110	
Sr 88	88	1	He	99.182	1.798	357875	3.35	100	99.2	90	110	
Mo 95	95	1	He	195.418	2.610	360535	3.27	200	97.7	90	110	
Ag 107	107	1	He	49.395	3.547	254506	3.87	50	98.8	90	110	
Cd 111	111	1	He	98.190	2.934	83777	3.25	100	98.2	90	110	
Sn 118	118	1	He	99.618	4.138	223403	4.44	100	99.6	90	110	
Sb 121	121	1	He	49.199	1.860	126860	2.13	50	98.4	90	110	
Ba 137	137	1	He	99.446	2.371	110719	2.67	100	99.4	90	110	
Ce 140	140	1	He	99.010	3.665	1332721	3.98	100	99.0	90	110	
Gd 157	157	1	He	99.441	2.457	269707	3.29	100	99.4	90	110	
Au 197	197	1	He	101.271	2.180	355040	3.02	100	101.3	90	110	
Tl 205	205	1	He	50.324	2.903	397300	3.59	50	100.6	90	110	
Pb206	206	1	He	101.702	2.327	279222	3.17	100	101.7	1	10000	
Pb207	207	1	He	100.149	3.317	235522	4.14	100	100.1	1	10000	
Pb 208	208	1	He	101.678	2.547	1072113	3.29	100	101.7	90	110	
U 238	238	1	He	101.040	2.220	990945	2.88	100	101.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7010760	0.64	7475944	93.78	80	120	
Sc_45	45	2	H2	39749500	7.60	44729383	88.87	80	120	
Ge_72	72	1	He	3757264	3.31	3950352	95.11	80	120	
Ge_72	72	2	H2	11877701	1.82	13199044	89.99	80	120	
In_115	115	1	He	4314039	0.32	4664305	92.49	80	120	
In_115	115	2	H2	11069034	2.91	12147161	91.12	80	120	
Tm_169	169	1	He	4379005	1.05	4835424	90.56	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	071_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:29:21-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.111	60.0	104	19.5	10	
Be 9	9	2	H2	0.007	185.3	1	142.0	1	
Na 23	23	1	He	1.130	49.8	24339	1.2	50	
Mg 24	24	1	He	0.383	37.9	474	10.6	50	
Al 27	27	1	He	0.446	25.8	355	6.6	50	
P 31	31	1	He	-1.060	-91.0	59	15.9	50	
K 39	39	1	He	4.517	105.2	67783	1.4	50	
Ca 40	40	2	H2	0.768	70.3	34516	10.4	50	
Ti 47	47	1	He	0.014	76.4	5	21.7	5	
V 51	51	1	He	-0.159	-1.8	958	2.8	10	
Cr 52	52	1	He	-0.027	-144.8	3500	3.9	2	
Mn 55	55	1	He	0.013	121.6	125	31.7	1	
Fe 56	56	1	He	0.472	28.5	5139	7.5	50	
Co 59	59	1	He	0.007	17.8	53	11.6	1	
Ni 60	60	1	He	0.015	52.7	43	22.8	2	
Cu 63	63	1	He	0.017	32.9	393	4.9	2	
Zn 66	66	1	He	-0.036	-58.8	160	7.6	5	
As 75	75	1	He	-0.002	-4024.6	337	8.5	2	
Se 78	78	2	H2	0.066	33.8	27	17.0	2	
Sr 88	88	1	He	0.008	121.1	204	17.2	5	
Mo 95	95	1	He	0.060	18.0	130	16.0	2	
Ag 107	107	1	He	0.002	27.8	76	2.6	1	
Cd 111	111	1	He	0.011	84.9	13	56.8	1	
Sn 118	118	1	He	0.200	13.9	1189	5.8	10	
Sb 121	121	1	He	-0.505	-12.8	1713	8.3	2	
Ba 137	137	1	He	0.001	645.0	19	44.4	1	
Ce 140	140	1	He	0.008	20.5	143	14.5	5	
Gd 157	157	1	He	0.005	65.4	17	60.0	1	
Au 197	197	1	He	0.087	18.3	334	15.6	5	
Tl 205	205	1	He	0.005	75.2	120	26.5	1	
Pb206	206	1	He	0.007	117.2	126	17.7	1	
Pb207	207	1	He	0.013	139.0	112	35.2	1	
Pb 208	208	1	He	0.014	50.8	491	12.7	1	
U 238	238	1	He	0.024	19.3	242	17.1	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6929917	2.22	7475944	92.70	80	120	
Sc_45	45	2	H2	39332765	6.82	44729383	87.93	80	120	
Ge_72	72	1	He	3650184	1.60	3950352	92.40	80	120	
Ge_72	72	2	H2	11809301	2.36	13199044	89.47	80	120	
In_115	115	1	He	4339840	1.36	4664305	93.04	80	120	
In_115	115	2	H2	10976994	1.40	12147161	90.37	80	120	
Tm_169	169	1	He	4380080	3.30	4835424	90.58	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	072_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:32:57-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	108.507	1.390	25456	7.73	100	108.5	90	110	
Be 9	9	2	H2	106.303	1.933	17704	8.58	100	106.3	90	110	
Na 23	23	1	He	5107.350	0.487	3622227	1.89	5100	100.1	90	110	
Mg 24	24	1	He	5094.380	2.793	1901820	2.23	5100	99.9	90	110	
Al 27	27	1	He	4975.250	0.845	886529	2.48	5100	97.6	90	110	
P 31	31	1	He	5025.339	1.132	52184	2.53	5000	100.5	90	110	
K 39	39	1	He	5045.867	0.736	2226396	1.69	5100	98.9	90	110	
Ca 40	40	2	H2	5565.543	8.750	19821163	15.85	5100	109.1	90	110	
Ti 47	47	1	He	204.628	2.678	24072	3.84	200	102.3	90	110	
V 51	51	1	He	100.142	0.632	301204	1.95	100	100.1	90	110	
Cr 52	52	1	He	100.658	0.713	363812	2.07	100	100.7	90	110	
Mn 55	55	1	He	100.512	0.655	252187	1.67	100	100.5	90	110	
Fe 56	56	1	He	5067.481	1.481	15710009	3.12	5100	99.4	90	110	
Co 59	59	1	He	100.414	1.335	508020	2.64	100	100.4	90	110	
Ni 60	60	1	He	101.128	1.140	128490	2.30	100	101.1	90	110	
Cu 63	63	1	He	101.735	0.788	342538	2.24	100	101.7	90	110	
Zn 66	66	1	He	99.794	2.520	59116	2.80	100	99.8	90	110	
As 75	75	1	He	99.015	1.835	41098	2.58	100	99.0	90	110	
Se 78	78	2	H2	107.219	1.832	25321	5.55	100	107.2	90	110	
Sr 88	88	1	He	99.379	1.576	355975	2.48	100	99.4	90	110	
Mo 95	95	1	He	199.369	1.632	365152	1.70	200	99.7	90	110	
Ag 107	107	1	He	49.575	3.531	253202	2.74	50	99.2	90	110	
Cd 111	111	1	He	99.664	3.421	84291	2.49	100	99.7	90	110	
Sn 118	118	1	He	99.513	2.297	221225	1.35	100	99.5	90	110	
Sb 121	121	1	He	50.850	3.277	129876	2.30	50	101.7	90	110	
Ba 137	137	1	He	100.537	3.702	110954	2.77	100	100.5	90	110	
Ce 140	140	1	He	99.865	3.507	1332433	2.57	100	99.9	90	110	
Gd 157	157	1	He	101.182	3.753	275028	2.30	100	101.2	90	110	
Au 197	197	1	He	101.050	4.122	355024	2.59	100	101.0	90	110	
Tl 205	205	1	He	49.712	3.220	393343	1.69	50	99.4	90	110	
Pb206	206	1	He	101.331	3.971	278802	2.44	100	101.3	1	10000	
Pb207	207	1	He	101.307	3.214	238766	1.78	100	101.3	1	10000	
Pb 208	208	1	He	101.836	3.513	1076160	1.99	100	101.8	90	110	
U 238	238	1	He	102.046	3.680	1003042	2.19	100	102.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7014471	1.65	7475944	93.83	80	120	
Sc_45	45	2	H2	39328013	6.95	44729383	87.92	80	120	
Ge_72	72	1	He	3729785	2.41	3950352	94.42	80	120	
Ge_72	72	2	H2	11810692	3.90	13199044	89.48	80	120	
In_115	115	1	He	4277484	0.96	4664305	91.71	80	120	
In_115	115	2	H2	11028251	1.28	12147161	90.79	80	120	
Tm_169	169	1	He	4390773	1.57	4835424	90.80	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	073_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:36:25-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.076	18.2	98	5.6	10	
Be 9	9	2	H2	0.006	78.3	1	57.3	1	
Na 23	23	1	He	1.324	38.9	24430	0.7	50	
Mg 24	24	1	He	0.306	36.4	445	8.1	50	
Al 27	27	1	He	0.488	41.0	361	10.0	50	
P 31	31	1	He	-1.321	-91.8	57	22.7	50	
K 39	39	1	He	2.622	203.1	66862	2.2	50	
Ca 40	40	2	H2	0.497	37.5	34500	9.3	50	
Ti 47	47	1	He	0.014	68.8	5	21.7	5	
V 51	51	1	He	-0.155	-16.5	967	6.8	10	
Cr 52	52	1	He	-0.007	-374.2	3563	3.0	2	
Mn 55	55	1	He	0.001	801.8	95	29.6	1	
Fe 56	56	1	He	0.433	25.4	5009	5.8	50	
Co 59	59	1	He	0.004	56.6	36	27.8	1	
Ni 60	60	1	He	0.009	71.6	37	22.7	2	
Cu 63	63	1	He	0.013	102.3	379	11.9	2	
Zn 66	66	1	He	-0.033	-65.4	163	8.7	5	
As 75	75	1	He	-0.052	-48.1	318	3.0	2	
Se 78	78	2	H2	0.032	32.8	19	10.8	2	
Sr 88	88	1	He	0.012	14.2	218	4.0	5	
Mo 95	95	1	He	0.060	20.3	129	15.6	2	
Ag 107	107	1	He	0.002	88.5	78	13.8	1	
Cd 111	111	1	He	0.006	64.8	9	32.7	1	
Sn 118	118	1	He	0.148	4.3	1073	2.2	10	
Sb 121	121	1	He	-0.495	-1.8	1745	3.6	2	
Ba 137	137	1	He	0.003	569.3	21	92.5	1	
Ce 140	140	1	He	0.005	33.2	103	23.3	5	
Gd 157	157	1	He	0.005	79.7	16	68.9	1	
Au 197	197	1	He	0.077	6.7	293	3.0	5	
Tl 205	205	1	He	0.003	176.3	100	40.6	1	
Pb206	206	1	He	0.004	138.2	114	11.0	1	
Pb207	207	1	He	0.002	359.7	88	25.8	1	
Pb 208	208	1	He	0.011	46.3	451	11.1	1	
U 238	238	1	He	0.022	33.8	216	31.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6916617	1.26	7475944	92.52	80	120	
Sc_45	45	2	H2	40443381	7.40	44729383	90.42	80	120	
Ge_72	72	1	He	3673649	1.38	3950352	93.00	80	120	
Ge_72	72	2	H2	11876310	2.55	13199044	89.98	80	120	
In_115	115	1	He	4351524	2.57	4664305	93.29	80	120	
In_115	115	2	H2	10972556	1.11	12147161	90.33	80	120	
Tm_169	169	1	He	4339087	3.46	4835424	89.74	80	120	

Sample Table

Sample Name	320-22768-A-14-A
Data File Name	074SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:39:59-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	210.834	210.834	1.33	51585	7.88		2000	2000	
Be 9	9	2	H2	8.256	8.256	1.12	1434	5.63		2000	2000	
B 11	11	2	H2	69.593	69.593	2.00	13907	7.70		10000	10000	
Na 23	23	1	He	2588.432	2588.432	2.58	1737302	3.26		100000	100000	
Mg 24	24	1	He	213603.813	213603.813	2.95	74985021	3.45		100000	100000	>LDR
Al 27	27	1	He	384873.014	384873.014	1.85	64458564	2.27		100000	100000	>LDR
P 31	31	1	He	9026.677	9026.677	1.58	88077	2.16		100000	100000	
K 39	39	1	He	8061.791	8061.791	1.69	3307255	2.10		100000	100000	
Ca 40	40	2	H2	181764.288	181764.288	7.40	674450752	14.07		100000	100000	>LDR
Ti 47	47	1	He	24439.023	24439.023	2.14	2702595	2.83		2000	2000	>LDR
V 51	51	1	He	1621.655	1621.655	2.78	4565257	2.74		2000	2000	
Cr 52	52	1	He	211.521	211.521	1.50	715022	1.53		2000	2000	
Mn 55	55	1	He	12061.648	12061.648	2.85	28447484	3.42		22000	22000	
Fe 56	56	1	He	638125.364	638125.364	3.25	1859432619	3.54		100000	100000	>LDR
Co 59	59	1	He	283.729	283.729	2.22	1349579	2.51		2000	2000	
Ni 60	60	1	He	184.862	184.862	1.49	220818	1.77		2000	2000	
Cu 63	63	1	He	749.390	749.390	2.62	2370118	2.46		2000	2000	
Zn 66	66	1	He	4446.739	4446.739	4.80	2315140	2.13		2000	2000	>LDR
As 75	75	1	He	124.455	124.455	5.26	45455	2.42		2000	2000	
Se 78	78	2	H2	4.667	4.667	5.03	1058	6.48		2000	2000	
Sr 88	88	1	He	901.591	901.591	5.57	2845151	2.89		2000	2000	
Mo 95	95	1	He	8.929	8.929	5.08	14436	2.38		2000	2000	
Ag 107	107	1	He	1.873	1.873	4.38	8635	1.90		500	500	
Cd 111	111	1	He	15.333	15.333	6.38	11627	3.41		2000	2000	
Sn 118	118	1	He	26.321	26.321	3.43	52969	2.90		2000	2000	
Sb 121	121	1	He	4.973	4.973	8.20	13774	4.51		2000	2000	
Ba 137	137	1	He	4564.806	4564.806	2.63	4518259	0.86		2000	2000	>LDR
Ce 140	140	1	He	457.657	457.657	6.58	5472756	3.48		2000	2000	
Gd 157	157	1	He	58.928	58.928	2.65	138980	2.06		2000	2000	
Au 197	197	1	He	0.201	0.201	20.60	638	18.97		2000	2000	
Tl 205	205	1	He	0.752	0.752	2.91	5225	1.65		500	500	
Pb206	206	1	He	428.416	428.416	3.74	1022418	3.03		12000	12000	
Pb207	207	1	He	400.945	400.945	2.81	819672	2.39		12000	12000	
Pb 208	208	1	He	418.767	418.767	3.36	3838427	2.48		12000	12000	
U 238	238	1	He	15.881	15.881	3.17	135443	2.69		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6595344	0.72	7475944	88.22	80	120	
Sc_45	45	2	H2	41070049	6.74	44729383	91.82	80	120	
Ge_72	72	1	He	3290638	2.93	3950352	83.30	80	120	
Ge_72	72	2	H2	11226539	1.69	13199044	85.06	80	120	
In_115	115	1	He	3838318	3.39	4664305	82.29	80	120	
In_115	115	2	H2	10200238	1.82	12147161	83.97	80	120	
Tm_169	169	1	He	3808811	1.22	4835424	78.77	80	120	ISTD Failed

Sample Table

Sample Name	sd 320-22768-A-14-A@5
Data File Name	075SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:43:05-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	47.670	47.670	2.34	12103	7.22		2000	2000	
Be 9	9	2	H2	1.814	1.814	3.32	326	5.39		2000	2000	
B 11	11	2	H2	31.078	31.078	3.07	8490	8.93		10000	10000	
Na 23	23	1	He	541.153	541.153	3.06	412700	1.35		100000	100000	
Mg 24	24	1	He	45205.203	45205.203	3.30	17192669	2.07		100000	100000	
Al 27	27	1	He	81993.824	81993.824	4.68	14874617	2.83		100000	100000	
P 31	31	1	He	1945.429	1945.429	3.26	20623	1.93		100000	100000	
K 39	39	1	He	1647.088	1647.088	3.48	786153	1.91		100000	100000	
Ca 40	40	2	H2	38060.177	38060.177	4.41	145771483	12.29		100000	100000	
Ti 47	47	1	He	4959.904	4959.904	2.76	594246	1.39		2000	2000	>LDR
V 51	51	1	He	343.900	343.900	2.71	1050259	1.96		2000	2000	
Cr 52	52	1	He	45.575	45.575	2.31	169852	1.43		2000	2000	
Mn 55	55	1	He	2559.908	2559.908	4.68	6539091	2.58		22000	22000	
Fe 56	56	1	He	139229.096	139229.096	3.16	439552651	1.89		100000	100000	>LDR
Co 59	59	1	He	61.191	61.191	3.52	315331	1.70		2000	2000	
Ni 60	60	1	He	40.937	40.937	2.87	53002	1.50		2000	2000	
Cu 63	63	1	He	165.687	165.687	3.74	568011	2.14		2000	2000	
Zn 66	66	1	He	1003.265	1003.265	3.90	579471	2.23		2000	2000	
As 75	75	1	He	26.569	26.569	3.25	11030	2.03		2000	2000	
Se 78	78	2	H2	1.065	1.065	7.01	270	9.01		2000	2000	
Sr 88	88	1	He	181.193	181.193	3.63	634424	1.86		2000	2000	
Mo 95	95	1	He	1.816	1.816	3.71	3275	3.12		2000	2000	
Ag 107	107	1	He	0.396	0.396	6.85	2067	4.57		500	500	
Cd 111	111	1	He	3.381	3.381	4.80	2842	4.70		2000	2000	
Sn 118	118	1	He	5.537	5.537	2.84	12896	1.23		2000	2000	
Sb 121	121	1	He	0.370	0.370	14.71	3845	3.80		2000	2000	
Ba 137	137	1	He	924.570	924.570	3.28	1012254	1.19		2000	2000	
Ce 140	140	1	He	95.402	95.402	3.65	1262889	1.69		2000	2000	
Gd 157	157	1	He	12.076	12.076	4.05	32835	1.16		2000	2000	
Au 197	197	1	He	0.037	0.037	16.21	158	15.28		2000	2000	
Tl 205	205	1	He	0.137	0.137	5.80	1161	3.59		500	500	
Pb206	206	1	He	87.392	87.392	3.81	240572	1.70		12000	12000	
Pb207	207	1	He	82.226	82.226	4.94	193843	2.65		12000	12000	
Pb 208	208	1	He	84.615	84.615	4.11	894547	1.94		12000	12000	
U 238	238	1	He	3.210	3.210	4.77	31560	2.09		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7149226	2.66	7475944	95.63	80	120	
Sc_45	45	2	H2	42452760	8.76	44729383	94.91	80	120	
Ge_72	72	1	He	3648119	2.03	3950352	92.35	80	120	
Ge_72	72	2	H2	12116996	3.79	13199044	91.80	80	120	
In_115	115	1	He	4246210	3.59	4664305	91.04	80	120	
In_115	115	2	H2	10910158	1.81	12147161	89.82	80	120	
Tm_169	169	1	He	4393958	2.98	4835424	90.87	80	120	

Sample Table

Sample Name	pds 320-22768-A-14-A
Data File Name	076SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:46:30-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	628.318	628.318	1.32	154452	7.81		2000	2000	
Be 9	9	2	H2	428.989	428.989	0.87	75072	9.04		2000	2000	
B 11	11	2	H2	2185.895	2185.895	2.10	328921	10.13		10000	10000	
Na 23	23	1	He	4567.133	4567.133	1.98	3117176	1.85		100000	100000	
Mg 24	24	1	He	214692.337	214692.337	1.47	77074947	1.38		100000	100000	>LDR
Al 27	27	1	He	380694.530	380694.530	0.97	65205613	0.46		100000	100000	>LDR
P 31	31	1	He	10835.742	10835.742	0.80	108114	0.44		100000	100000	
K 39	39	1	He	9823.848	9823.848	1.38	4108152	2.32		100000	100000	
Ca 40	40	2	H2	178208.350	178208.350	8.44	666358784	16.62		100000	100000	>LDR
Ti 47	47	1	He	24152.434	24152.434	0.67	2731569	1.41		2000	2000	>LDR
V 51	51	1	He	2037.389	2037.389	2.33	5865722	2.09		2000	2000	>LDR
Cr 52	52	1	He	634.580	634.580	1.39	2186976	1.41		2000	2000	
Mn 55	55	1	He	11913.068	11913.068	1.85	28735573	2.34		22000	22000	
Fe 56	56	1	He	639116.657	639116.657	1.95	1904582699	1.82		100000	100000	>LDR
Co 59	59	1	He	693.899	693.899	1.19	3375718	1.62		2000	2000	
Ni 60	60	1	He	564.878	564.878	1.42	690082	1.88		2000	2000	
Cu 63	63	1	He	1125.225	1125.225	2.13	3639365	1.08		2000	2000	
Zn 66	66	1	He	4632.079	4632.079	0.65	2546572	0.90		2000	2000	>LDR
As 75	75	1	He	496.547	496.547	1.15	190553	0.43		2000	2000	
Se 78	78	2	H2	369.494	369.494	3.57	84190	4.93		2000	2000	
Sr 88	88	1	He	1295.069	1295.069	0.81	4316000	0.64		2000	2000	
Mo 95	95	1	He	435.027	435.027	1.70	741683	1.21		2000	2000	
Ag 107	107	1	He	100.130	100.130	1.69	466298	0.61		500	500	
Cd 111	111	1	He	390.107	390.107	1.86	300862	0.78		2000	2000	
Sn 118	118	1	He	447.619	447.619	2.35	905019	1.12		2000	2000	
Sb 121	121	1	He	443.246	443.246	1.41	1011641	0.49		2000	2000	
Ba 137	137	1	He	4809.415	4809.415	1.46	4839693	0.23		2000	2000	>LDR
Ce 140	140	1	He	870.263	870.263	2.36	10588941	2.03		2000	2000	
Gd 157	157	1	He	475.205	475.205	3.34	1172140	0.62		2000	2000	
Au 197	197	1	He	390.505	390.505	5.32	1244481	2.31		2000	2000	
Tl 205	205	1	He	102.491	102.491	3.37	735828	1.25		500	500	
Pb206	206	1	He	819.885	819.885	3.28	2046461	0.21		12000	12000	
Pb207	207	1	He	830.146	830.146	4.29	1774453	1.18		12000	12000	
Pb 208	208	1	He	821.628	821.628	3.51	7876472	0.69		12000	12000	
U 238	238	1	He	451.757	451.757	4.17	4028795	1.16		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6745706	1.07	7475944	90.23	80	120	
Sc_45	45	2	H2	41336953	8.26	44729383	92.42	80	120	
Ge_72	72	1	He	3471627	0.74	3950352	87.88	80	120	
Ge_72	72	2	H2	11403990	3.47	13199044	86.40	80	120	
In_115	115	1	He	3900449	1.24	4664305	83.62	80	120	
In_115	115	2	H2	10401786	2.37	12147161	85.63	80	120	
Tm_169	169	1	He	3985728	3.21	4835424	82.43	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-14-B MS
Data File Name	077SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:49:30-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	368.307	368.307	2.68	92538	6.87		2000	2000	
Be 9	9	2	H2	201.001	201.001	1.93	35919	6.98		2000	2000	
B 11	11	2	H2	949.567	949.567	4.11	147988	8.49		10000	10000	
Na 23	23	1	He	3431.052	3431.052	1.51	2433922	1.13		100000	100000	
Mg 24	24	1	He	184835.895	184835.895	2.68	68788525	1.22		100000	100000	>LDR
Al 27	27	1	He	351172.748	351172.748	1.83	62362131	1.08		100000	100000	>LDR
P 31	31	1	He	10073.816	10073.816	1.64	104214	0.77		100000	100000	
K 39	39	1	He	8175.400	8175.400	2.92	3554755	1.43		100000	100000	
Ca 40	40	2	H2	199688.081	199688.081	9.01	760768235	13.48		100000	100000	>LDR
Ti 47	47	1	He	24657.830	24657.830	1.57	2892468	3.80		2000	2000	>LDR
V 51	51	1	He	1773.678	1773.678	4.10	5292836	2.11		2000	2000	
Cr 52	52	1	He	391.816	391.816	3.07	1401070	0.97		2000	2000	
Mn 55	55	1	He	10213.676	10213.676	3.75	25532965	1.71		22000	22000	
Fe 56	56	1	He	614489.410	614489.410	3.24	1898555605	2.86		100000	100000	>LDR
Co 59	59	1	He	478.053	478.053	1.49	2411368	1.93		2000	2000	
Ni 60	60	1	He	354.535	354.535	1.36	449050	1.05		2000	2000	
Cu 63	63	1	He	984.605	984.605	3.20	3302157	2.99		2000	2000	
Zn 66	66	1	He	4358.022	4358.022	1.32	2454069	2.47		2000	2000	>LDR
As 75	75	1	He	319.436	319.436	0.71	125667	0.85		2000	2000	
Se 78	78	2	H2	167.199	167.199	2.99	39791	4.71		2000	2000	
Sr 88	88	1	He	1114.962	1114.962	2.38	3806209	3.33		2000	2000	
Mo 95	95	1	He	200.529	200.529	0.72	350189	1.64		2000	2000	
Ag 107	107	1	He	48.240	48.240	4.82	230637	1.35		500	500	
Cd 111	111	1	He	189.783	189.783	4.18	150280	1.26		2000	2000	
Sn 118	118	1	He	221.014	221.014	4.42	459153	1.65		2000	2000	
Sb 121	121	1	He	166.586	166.586	4.41	392043	0.64		2000	2000	
Ba 137	137	1	He	4374.662	4374.662	3.62	4520335	0.96		2000	2000	>LDR
Ce 140	140	1	He	660.486	660.486	4.25	8250416	0.43		2000	2000	
Gd 157	157	1	He	244.953	244.953	1.53	623151	1.66		2000	2000	
Au 197	197	1	He	177.455	177.455	0.65	583571	1.90		2000	2000	
Tl 205	205	1	He	46.944	46.944	0.52	347642	1.28		500	500	
Pb206	206	1	He	530.245	530.245	0.89	1365072	1.31		12000	12000	
Pb207	207	1	He	516.090	516.090	0.81	1138016	0.96		12000	12000	
Pb 208	208	1	He	527.927	527.927	1.10	5220660	2.37		12000	12000	
U 238	238	1	He	214.798	214.798	1.32	1976370	2.75		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6995136	2.25	7475944	93.57	80	120	
Sc_45	45	2	H2	42208392	5.40	44729383	94.36	80	120	
Ge_72	72	1	He	3555512	1.15	3950352	90.00	80	120	
Ge_72	72	2	H2	11906536	2.64	13199044	90.21	80	120	
In_115	115	1	He	4009030	4.55	4664305	85.95	80	120	
In_115	115	2	H2	11025504	1.01	12147161	90.77	80	120	
Tm_169	169	1	He	4108189	1.72	4835424	84.96	80	120	

Sample Table

Sample Name	320-22768-A-14-C MSD
Data File Name	078SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:52:32-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	401.593	401.593	2.40	104660	6.82		2000	2000	
Be 9	9	2	H2	210.656	210.656	1.66	39035	6.00		2000	2000	
B 11	11	2	H2	992.273	992.273	3.48	160200	7.73		10000	10000	
Na 23	23	1	He	4713.484	4713.484	2.87	3477414	2.45		100000	100000	
Mg 24	24	1	He	177268.920	177268.920	2.29	68812871	2.53		100000	100000	>LDR
Al 27	27	1	He	340147.508	340147.508	1.22	62994160	1.07		100000	100000	>LDR
P 31	31	1	He	12450.269	12450.269	1.10	134310	1.48		100000	100000	
K 39	39	1	He	9293.335	9293.335	0.80	4205398	1.33		100000	100000	
Ca 40	40	2	H2	193400.204	193400.204	7.74	763993472	12.19		100000	100000	>LDR
Ti 47	47	1	He	23455.052	23455.052	0.44	2868265	1.62		2000	2000	>LDR
V 51	51	1	He	1955.027	1955.027	3.60	6086675	3.96		2000	2000	
Cr 52	52	1	He	322.421	322.421	1.23	1203398	2.04		2000	2000	
Mn 55	55	1	He	13042.334	13042.334	1.37	34013873	1.70		22000	22000	
Fe 56	56	1	He	580464.537	580464.537	2.43	1870054528	1.10		100000	100000	>LDR
Co 59	59	1	He	477.181	477.181	2.43	2509518	1.14		2000	2000	
Ni 60	60	1	He	347.811	347.811	2.11	459367	1.35		2000	2000	
Cu 63	63	1	He	831.832	831.832	2.76	2908949	1.71		2000	2000	
Zn 66	66	1	He	4612.303	4612.303	2.75	2675344	1.85		2000	2000	>LDR
As 75	75	1	He	307.329	307.329	1.92	124580	1.38		2000	2000	
Se 78	78	2	H2	174.368	174.368	4.33	42282	3.91		2000	2000	
Sr 88	88	1	He	1037.443	1037.443	2.07	3647986	0.64		2000	2000	
Mo 95	95	1	He	207.498	207.498	2.24	373287	1.08		2000	2000	
Ag 107	107	1	He	47.427	47.427	1.39	240491	1.89		500	500	
Cd 111	111	1	He	190.635	190.635	0.51	160069	1.31		2000	2000	
Sn 118	118	1	He	214.886	214.886	0.55	473408	1.23		2000	2000	
Sb 121	121	1	He	156.620	156.620	1.52	391022	1.10		2000	2000	
Ba 137	137	1	He	4638.788	4638.788	0.91	5081998	1.50		2000	2000	>LDR
Ce 140	140	1	He	714.632	714.632	0.69	9465793	0.48		2000	2000	
Gd 157	157	1	He	256.828	256.828	2.08	678473	1.18		2000	2000	
Au 197	197	1	He	178.638	178.638	2.42	609975	1.53		2000	2000	
Tl 205	205	1	He	48.243	48.243	2.11	370981	1.22		500	500	
Pb206	206	1	He	579.701	579.701	2.67	1549669	1.78		12000	12000	
Pb207	207	1	He	561.112	561.112	1.86	1284874	1.01		12000	12000	
Pb 208	208	1	He	571.417	571.417	2.19	5867113	1.35		12000	12000	
U 238	238	1	He	224.505	224.505	2.11	2144764	1.56		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7294403	2.04	7475944	97.57	80	120	
Sc_45	45	2	H2	43769216	4.38	44729383	97.85	80	120	
Ge_72	72	1	He	3663711	1.82	3950352	92.74	80	120	
Ge_72	72	2	H2	12136188	0.98	13199044	91.95	80	120	
In_115	115	1	He	4245861	1.17	4664305	91.03	80	120	
In_115	115	2	H2	10987503	1.26	12147161	90.45	80	120	
Tm_169	169	1	He	4266265	0.90	4835424	88.23	80	120	

Sample Table

Sample Name	320-22768-A-15-A
Data File Name	079SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:55:37-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	36.699	36.699	0.62	9790	7.42		2000	2000	
Be 9	9	2	H2	1.803	1.803	3.74	340	7.38		2000	2000	
B 11	11	2	H2	40.656	40.656	2.20	10432	8.74		10000	10000	
Na 23	23	1	He	1277.830	1277.830	2.99	1010346	1.68		100000	100000	
Mg 24	24	1	He	32417.985	32417.985	3.66	13231228	2.51		100000	100000	
Al 27	27	1	He	64691.872	64691.872	3.68	12597923	2.76		100000	100000	
P 31	31	1	He	2078.685	2078.685	3.40	23642	2.21		100000	100000	
K 39	39	1	He	1864.371	1864.371	3.59	945338	2.10		100000	100000	
Ca 40	40	2	H2	34306.170	34306.170	4.97	137754123	12.55		100000	100000	
Ti 47	47	1	He	4494.011	4494.011	3.63	577784	2.41		2000	2000	>LDR
V 51	51	1	He	310.248	310.248	4.09	1016786	2.87		2000	2000	
Cr 52	52	1	He	35.706	35.706	3.97	143647	2.67		2000	2000	
Mn 55	55	1	He	2033.790	2033.790	3.24	5576964	2.07		22000	22000	
Fe 56	56	1	He	114885.814	114885.814	3.61	389228907	2.47		100000	100000	>LDR
Co 59	59	1	He	51.775	51.775	3.99	286346	2.77		2000	2000	
Ni 60	60	1	He	36.726	36.726	4.14	51027	2.92		2000	2000	
Cu 63	63	1	He	160.557	160.557	3.50	590748	2.28		2000	2000	
Zn 66	66	1	He	812.784	812.784	2.19	513049	3.12		2000	2000	
As 75	75	1	He	30.735	30.735	2.19	13884	3.07		2000	2000	
Se 78	78	2	H2	2.951	2.951	2.04	777	2.38		2000	2000	
Sr 88	88	1	He	170.134	170.134	1.89	650968	2.84		2000	2000	
Mo 95	95	1	He	2.558	2.558	3.37	5031	4.31		2000	2000	
Ag 107	107	1	He	0.404	0.404	5.91	2261	7.13		500	500	
Cd 111	111	1	He	3.478	3.478	4.55	3129	5.69		2000	2000	
Sn 118	118	1	He	5.283	5.283	3.12	13201	2.88		2000	2000	
Sb 121	121	1	He	1.358	1.358	1.25	6734	1.10		2000	2000	
Ba 137	137	1	He	892.567	892.567	2.33	1045846	2.32		2000	2000	
Ce 140	140	1	He	107.166	107.166	4.04	1518420	4.36		2000	2000	
Gd 157	157	1	He	11.735	11.735	4.03	33685	4.08		2000	2000	
Au 197	197	1	He	0.161	0.161	25.89	628	23.94		2000	2000	
Tl 205	205	1	He	0.184	0.184	5.37	1622	5.91		500	500	
Pb206	206	1	He	128.796	128.796	3.19	374144	2.69		12000	12000	
Pb207	207	1	He	122.619	122.619	2.76	305111	2.37		12000	12000	
Pb 208	208	1	He	126.255	126.255	2.74	1408714	2.54		12000	12000	
U 238	238	1	He	3.029	3.029	2.76	31447	2.97		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7670820	1.25	7475944	102.61	80	120	
Sc_45	45	2	H2	44471013	7.50	44729383	99.42	80	120	
Ge_72	72	1	He	3984180	0.98	3950352	100.86	80	120	
Ge_72	72	2	H2	12977817	4.14	13199044	98.32	80	120	
In_115	115	1	He	4541469	1.64	4664305	97.37	80	120	
In_115	115	2	H2	11776606	0.33	12147161	96.95	80	120	
Tm_169	169	1	He	4634825	0.90	4835424	95.85	80	120	

Sample Report

Sample Table

Sample Name	320-22768-A-16-A
Data File Name	080SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T13:59:02-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	113.716	113.716	1.51	31469	8.96		2000	2000	
Be 9	9	2	H2	4.535	4.535	7.05	894	14.64		2000	2000	
B 11	11	2	H2	60.253	60.253	4.91	14164	10.87		10000	10000	
Na 23	23	1	He	2104.035	2104.035	4.39	1664390	3.04		100000	100000	
Mg 24	24	1	He	103254.886	103254.886	2.62	42602880	1.47		100000	100000	>LDR
Al 27	27	1	He	186329.549	186329.549	1.55	36683116	0.60		100000	100000	>LDR
P 31	31	1	He	6621.698	6621.698	0.70	75976	0.93		100000	100000	
K 39	39	1	He	6498.996	6498.996	2.62	3148532	2.56		100000	100000	
Ca 40	40	2	H2	103900.597	103900.597	8.44	435864128	16.19		100000	100000	>LDR
Ti 47	47	1	He	13146.204	13146.204	2.58	1708660	1.45		2000	2000	>LDR
V 51	51	1	He	908.123	908.123	1.09	3006560	2.01		2000	2000	
Cr 52	52	1	He	121.736	121.736	1.32	485470	0.23		2000	2000	
Mn 55	55	1	He	6084.868	6084.868	2.74	16866784	1.40		22000	22000	
Fe 56	56	1	He	322048.762	322048.762	3.56	1102877824	2.19		100000	100000	>LDR
Co 59	59	1	He	144.092	144.092	2.48	805604	1.04		2000	2000	
Ni 60	60	1	He	101.330	101.330	2.04	142288	0.57		2000	2000	
Cu 63	63	1	He	384.198	384.198	3.83	1428577	3.32		2000	2000	
Zn 66	66	1	He	2724.072	2724.072	3.22	1663702	1.57		2000	2000	>LDR
As 75	75	1	He	85.725	85.725	1.87	36847	0.31		2000	2000	
Se 78	78	2	H2	5.961	5.961	4.89	1567	7.44		2000	2000	
Sr 88	88	1	He	654.058	654.058	1.09	2422198	1.37		2000	2000	
Mo 95	95	1	He	6.054	6.054	5.67	11488	4.51		2000	2000	
Ag 107	107	1	He	1.156	1.156	4.66	6080	3.30		500	500	
Cd 111	111	1	He	11.609	11.609	3.74	10003	0.24		2000	2000	
Sn 118	118	1	He	23.835	23.835	3.63	54526	0.89		2000	2000	
Sb 121	121	1	He	4.836	4.836	5.53	15298	1.72		2000	2000	
Ba 137	137	1	He	3830.581	3830.581	5.39	4303371	2.31		2000	2000	>LDR
Ce 140	140	1	He	319.198	319.198	3.43	4338238	2.10		2000	2000	
Gd 157	157	1	He	35.176	35.176	2.13	99263	1.66		2000	2000	
Au 197	197	1	He	0.086	0.086	5.42	344	5.50		2000	2000	
Tl 205	205	1	He	0.780	0.780	3.07	6484	3.58		500	500	
Pb206	206	1	He	351.790	351.790	0.80	1004638	0.32		12000	12000	
Pb207	207	1	He	333.534	333.534	1.42	815894	1.57		12000	12000	
Pb 208	208	1	He	348.290	348.290	1.68	3820065	1.09		12000	12000	
U 238	238	1	He	10.950	10.950	1.20	111748	1.13		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7754177	1.48	7475944	103.72	80	120	
Sc_45	45	2	H2	46387019	7.81	44729383	103.71	80	120	
Ge_72	72	1	He	3857802	1.65	3950352	97.66	80	120	
Ge_72	72	2	H2	13038841	3.25	13199044	98.79	80	120	
In_115	115	1	He	4359210	3.51	4664305	93.46	80	120	
In_115	115	2	H2	11969012	0.75	12147161	98.53	80	120	
Tm_169	169	1	He	4556853	0.63	4835424	94.24	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	081_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:02:12-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	104.322	3.057	28716	8.98	100	104.3	90	110	
Be 9	9	2	H2	100.563	2.138	19636	8.34	100	100.6	90	110	
Na 23	23	1	He	5010.819	2.428	4046241	3.57	5100	98.3	90	110	
Mg 24	24	1	He	5004.120	3.312	2127336	4.46	5100	98.1	90	110	
Al 27	27	1	He	4937.803	3.508	1001631	4.52	5100	96.8	90	110	
P 31	31	1	He	4936.288	3.729	58360	4.96	5000	98.7	90	110	
K 39	39	1	He	5039.530	2.449	2531611	3.56	5100	98.8	90	110	
Ca 40	40	2	H2	4945.555	7.666	20632847	13.90	5100	97.0	90	110	
Ti 47	47	1	He	202.896	4.165	27171	5.12	200	101.4	90	110	
V 51	51	1	He	100.836	3.282	345256	4.12	100	100.8	90	110	
Cr 52	52	1	He	101.025	2.950	415660	3.91	100	101.0	90	110	
Mn 55	55	1	He	101.197	3.218	289077	4.32	100	101.2	90	110	
Fe 56	56	1	He	5140.103	2.408	18134011	2.34	5100	100.8	90	110	
Co 59	59	1	He	101.347	3.196	583717	4.33	100	101.3	90	110	
Ni 60	60	1	He	101.719	3.520	147139	4.63	100	101.7	90	110	
Cu 63	63	1	He	102.481	3.040	392769	3.78	100	102.5	90	110	
Zn 66	66	1	He	101.581	3.935	67251	5.39	100	101.6	90	110	
As 75	75	1	He	99.616	2.263	46205	4.12	100	99.6	90	110	
Se 78	78	2	H2	99.610	3.466	27095	6.88	100	99.6	90	110	
Sr 88	88	1	He	99.137	2.418	396866	4.41	100	99.1	90	110	
Mo 95	95	1	He	201.313	2.980	412138	4.90	200	100.7	90	110	
Ag 107	107	1	He	50.169	2.916	290269	4.60	50	100.3	90	110	
Cd 111	111	1	He	97.181	2.204	93101	3.76	100	97.2	90	110	
Sn 118	118	1	He	98.239	2.610	247397	4.32	100	98.2	90	110	
Sb 121	121	1	He	48.464	2.300	140375	3.96	50	96.9	90	110	
Ba 137	137	1	He	98.791	2.904	123512	4.51	100	98.8	90	110	
Ce 140	140	1	He	100.254	4.047	1515549	5.72	100	100.3	90	110	
Gd 157	157	1	He	99.531	1.812	301154	3.98	100	99.5	90	110	
Au 197	197	1	He	100.918	1.909	394716	4.13	100	100.9	90	110	
Tl 205	205	1	He	49.594	2.942	436877	5.14	50	99.2	90	110	
Pb206	206	1	He	99.989	1.859	306259	4.08	100	100.0	1	10000	
Pb207	207	1	He	100.604	1.580	263920	3.77	100	100.6	1	10000	
Pb 208	208	1	He	101.090	1.778	1189163	4.00	100	101.1	90	110	
U 238	238	1	He	100.089	2.130	1095184	4.29	100	100.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7984445	1.54	7475944	106.80	80	120	
Sc_45	45	2	H2	46108823	6.55	44729383	103.08	80	120	
Ge_72	72	1	He	4167079	2.53	3950352	105.49	80	120	
Ge_72	72	2	H2	13598447	3.42	13199044	103.03	80	120	
In_115	115	1	He	4843186	1.71	4664305	103.84	80	120	
In_115	115	2	H2	12552191	0.48	12147161	103.33	80	120	
Tm_169	169	1	He	4884545	2.22	4835424	101.02	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	082_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:05:40-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.500	13.1	229	12.1	10	
Be 9	9	2	H2	0.017	56.1	4	47.9	1	
Na 23	23	1	He	0.702	38.5	27430	0.6	50	
Mg 24	24	1	He	0.706	16.3	677	6.9	50	
Al 27	27	1	He	1.005	13.9	517	5.6	50	
P 31	31	1	He	-1.326	-125.6	65	30.4	50	
K 39	39	1	He	3.035	7.6	76639	0.4	50	
Ca 40	40	2	H2	3.223	138.9	50314	33.7	50	
Ti 47	47	1	He	0.229	55.3	35	49.1	5	
V 51	51	1	He	-0.203	-10.7	943	7.5	10	
Cr 52	52	1	He	-0.055	-29.2	3877	1.2	2	
Mn 55	55	1	He	0.027	27.0	179	11.7	1	
Fe 56	56	1	He	1.998	20.3	11199	13.1	50	
Co 59	59	1	He	0.006	30.5	53	19.1	1	
Ni 60	60	1	He	0.008	105.5	40	30.4	2	
Cu 63	63	1	He	0.024	42.8	474	7.8	2	
Zn 66	66	1	He	0.018	158.8	211	11.4	5	
As 75	75	1	He	-0.068	-16.1	341	3.4	2	
Se 78	78	2	H2	-0.003	-327.2	13	19.9	2	
Sr 88	88	1	He	0.008	142.4	224	17.0	5	
Mo 95	95	1	He	0.069	40.7	160	34.4	2	
Ag 107	107	1	He	0.001	596.2	76	32.5	1	
Cd 111	111	1	He	0.013	114.8	17	79.9	1	
Sn 118	118	1	He	0.074	78.6	991	13.1	10	
Sb 121	121	1	He	-0.827	-2.1	987	3.9	2	
Ba 137	137	1	He	0.013	111.7	36	51.6	1	
Ce 140	140	1	He	0.005	38.9	108	23.6	5	
Gd 157	157	1	He	0.004	42.7	14	35.3	1	
Au 197	197	1	He	0.079	25.5	328	22.7	5	
Tl 205	205	1	He	0.005	48.3	129	17.2	1	
Pb206	206	1	He	0.007	236.7	133	33.8	1	
Pb207	207	1	He	0.009	182.6	110	34.4	1	
Pb 208	208	1	He	0.016	47.8	543	12.8	1	
U 238	238	1	He	0.014	26.8	159	26.2	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7905319	0.46	7475944	105.74	80	120	
Sc_45	45	2	H2	46161553	8.38	44729383	103.20	80	120	
Ge_72	72	1	He	4016522	2.87	3950352	101.68	80	120	
Ge_72	72	2	H2	13530771	3.01	13199044	102.51	80	120	
In_115	115	1	He	4764808	2.52	4664305	102.15	80	120	
In_115	115	2	H2	12892814	0.77	12147161	106.14	80	120	
Tm_169	169	1	He	4698858	3.42	4835424	97.18	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	083_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:09:15-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	105.391	2.205	28909	7.47	100	105.4	90	110	
Be 9	9	2	H2	102.987	1.146	20043	7.15	100	103.0	90	110	
Na 23	23	1	He	4980.709	3.987	4034992	4.51	5100	97.7	90	110	
Mg 24	24	1	He	4998.741	6.301	2131959	6.93	5100	98.0	90	110	
Al 27	27	1	He	4896.565	2.740	996321	3.03	5100	96.0	90	110	
P 31	31	1	He	4943.124	3.299	58614	3.43	5000	98.9	90	110	
K 39	39	1	He	5069.767	2.987	2554063	2.76	5100	99.4	90	110	
Ca 40	40	2	H2	5012.676	7.806	20850133	13.77	5100	98.3	90	110	
Ti 47	47	1	He	203.196	5.172	27293	5.30	200	101.6	90	110	
V 51	51	1	He	100.588	3.828	345519	4.33	100	100.6	90	110	
Cr 52	52	1	He	101.008	3.818	416906	4.17	100	101.0	90	110	
Mn 55	55	1	He	99.936	3.555	286333	3.49	100	99.9	90	110	
Fe 56	56	1	He	5164.023	4.757	18279061	4.83	5100	101.3	90	110	
Co 59	59	1	He	101.348	3.921	585537	4.34	100	101.3	90	110	
Ni 60	60	1	He	101.577	3.579	147393	4.15	100	101.6	90	110	
Cu 63	63	1	He	102.348	3.971	393521	4.29	100	102.3	90	110	
Zn 66	66	1	He	99.955	1.040	66861	3.45	100	100.0	90	110	
As 75	75	1	He	98.850	1.662	46331	3.85	100	98.8	90	110	
Se 78	78	2	H2	101.905	4.260	27741	6.28	100	101.9	90	110	
Sr 88	88	1	He	97.309	1.490	393599	3.88	100	97.3	90	110	
Mo 95	95	1	He	198.184	2.401	409979	4.74	200	99.1	90	110	
Ag 107	107	1	He	51.436	2.655	286562	4.65	50	102.9	90	110	
Cd 111	111	1	He	101.787	2.158	93891	3.74	100	101.8	90	110	
Sn 118	118	1	He	102.918	3.126	249478	4.19	100	102.9	90	110	
Sb 121	121	1	He	50.860	2.613	141694	4.40	50	101.7	90	110	
Ba 137	137	1	He	102.269	3.444	123112	4.92	100	102.3	90	110	
Ce 140	140	1	He	106.974	5.740	1557359	7.39	100	107.0	90	110	
Gd 157	157	1	He	100.331	3.923	303284	3.75	100	100.3	90	110	
Au 197	197	1	He	100.051	4.113	390931	3.92	100	100.1	90	110	
Tl 205	205	1	He	49.678	4.582	437046	3.79	50	99.4	90	110	
Pb206	206	1	He	100.465	3.873	307383	3.24	100	100.5	1	10000	
Pb207	207	1	He	99.528	4.565	260808	3.74	100	99.5	1	10000	
Pb 208	208	1	He	100.632	4.958	1182469	4.39	100	100.6	90	110	
U 238	238	1	He	101.177	4.497	1105788	3.69	100	101.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	8010405	1.06	7475944	107.15	80	120	
Sc_45	45	2	H2	45970336	5.99	44729383	102.77	80	120	
Ge_72	72	1	He	4210421	2.44	3950352	106.58	80	120	
Ge_72	72	2	H2	13611826	2.06	13199044	103.13	80	120	
In_115	115	1	He	4663739	2.49	4664305	99.99	80	120	
In_115	115	2	H2	12779177	1.81	12147161	105.20	80	120	
Tm_169	169	1	He	4881897	1.84	4835424	100.96	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	084_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:12:42-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.378	13.7	195	14.3	10	
Be 9	9	2	H2	0.007	86.4	2	68.6	1	
Na 23	23	1	He	1.175	49.6	27788	1.9	50	
Mg 24	24	1	He	1.630	136.5	1077	89.7	50	
Al 27	27	1	He	2.428	136.3	810	84.7	50	
P 31	31	1	He	-2.283	-42.9	53	20.7	50	
K 39	39	1	He	1.750	237.1	75959	1.7	50	
Ca 40	40	2	H2	0.584	81.1	39733	11.7	50	
Ti 47	47	1	He	0.217	113.3	33	100.5	5	
V 51	51	1	He	-0.172	-18.9	1048	12.4	10	
Cr 52	52	1	He	-0.012	-449.4	4045	3.4	2	
Mn 55	55	1	He	0.069	146.5	303	97.3	1	
Fe 56	56	1	He	3.760	135.2	17562	104.0	50	
Co 59	59	1	He	0.012	62.4	87	49.9	1	
Ni 60	60	1	He	0.007	107.0	39	30.3	2	
Cu 63	63	1	He	0.058	32.6	604	14.1	2	
Zn 66	66	1	He	0.033	186.0	229	17.9	5	
As 75	75	1	He	-0.076	-72.6	352	7.1	2	
Se 78	78	2	H2	0.000	6740.0	14	18.4	2	
Sr 88	88	1	He	0.013	103.6	253	18.7	5	
Mo 95	95	1	He	0.058	31.2	142	22.5	2	
Ag 107	107	1	He	0.004	84.7	97	21.0	1	
Cd 111	111	1	He	0.010	96.2	14	62.3	1	
Sn 118	118	1	He	0.088	52.1	1028	12.4	10	
Sb 121	121	1	He	-0.711	-1.3	1311	0.5	2	
Ba 137	137	1	He	0.056	134.8	88	104.3	1	
Ce 140	140	1	He	0.014	93.1	242	77.9	5	
Gd 157	157	1	He	0.009	19.7	30	19.2	1	
Au 197	197	1	He	0.076	19.6	321	18.6	5	
Tl 205	205	1	He	0.008	45.9	150	18.2	1	
Pb206	206	1	He	0.022	91.0	180	30.8	1	
Pb207	207	1	He	0.028	72.7	161	30.1	1	
Pb 208	208	1	He	0.029	67.8	702	29.9	1	
U 238	238	1	He	0.021	39.8	231	37.1	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7901660	2.43	7475944	105.69	80	120	
Sc_45	45	2	H2	46105673	7.10	44729383	103.08	80	120	
Ge_72	72	1	He	4187187	3.48	3950352	106.00	80	120	
Ge_72	72	2	H2	13805267	3.68	13199044	104.59	80	120	
In_115	115	1	He	4766725	1.55	4664305	102.20	80	120	
In_115	115	2	H2	13106887	3.20	12147161	107.90	80	120	
Tm_169	169	1	He	4787276	1.75	4835424	99.00	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	CCVL 764635
Data File Name	085LCCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:16:18-07:00
Sample Type	LLCCV
Dilution	1
Comment	LL_QSM
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	10.127	4.682	2915	10.46	10	101.3	80	120	
Be 9	9	2	H2	1.016	6.755	202	13.47	1	101.6	80	120	
B 11	11	2	H2	60.792	4.708	14385	10.32	50	121.6	80	120	> +/- 30%
Na 23	23	1	He	87.238	3.802	96356	2.93	100	87.2	80	120	
Mg 24	24	1	He	97.135	2.628	41339	2.72	100	97.1	80	120	
Al 27	27	1	He	99.284	3.026	20288	2.55	100	99.3	80	120	
P 31	31	1	He	42.918	11.312	583	9.06	50	85.8	80	120	
K 39	39	1	He	99.425	4.030	123408	1.74	100	99.4	80	120	
Ca 40	40	2	H2	95.710	10.938	443280	17.07	100	95.7	80	120	
Ti 47	47	1	He	4.933	5.301	659	4.64	5	98.7	80	120	
V 51	51	1	He	11.680	2.757	41122	3.08	10	116.8	80	120	
Cr 52	52	1	He	4.813	3.534	23562	3.15	5	96.3	80	120	
Mn 55	55	1	He	5.856	2.119	16694	2.40	6	97.6	80	120	
Fe 56	56	1	He	108.267	4.064	383205	4.27	100	108.3	80	120	
Co 59	59	1	He	3.020	3.288	17277	3.42	3	100.7	80	120	
Ni 60	60	1	He	3.082	5.208	4451	5.06	3	102.7	80	120	
Cu 63	63	1	He	3.075	5.171	12065	5.18	3	102.5	80	120	
Zn 66	66	1	He	11.618	2.252	8034	3.76	12	96.8	80	120	
As 75	75	1	He	2.770	2.412	1693	3.79	3	92.3	80	120	
Se 78	78	2	H2	2.938	1.180	825	5.94	3	97.9	80	120	
Sr 88	88	1	He	18.884	2.865	77314	4.72	20	94.4	80	120	
Mo 95	95	1	He	3.143	0.226	6590	2.61	3	104.8	80	120	
Ag 107	107	1	He	0.992	7.374	5770	7.07	1	99.2	80	120	
Cd 111	111	1	He	1.445	1.881	1379	1.80	1.5	96.3	80	120	
Sn 118	118	1	He	9.839	3.566	25334	3.27	10	98.4	80	120	
Sb 121	121	1	He	5.376	5.377	18409	4.10	6	89.6	80	120	
Ba 137	137	1	He	1.498	5.585	1878	5.47	1.5	99.8	80	120	
Ce 140	140	1	He	1.962	2.386	29475	2.39	2	98.1	80	120	
Gd 157	157	1	He	1.064	1.451	3213	2.36	1	106.4	80	120	
Au 197	197	1	He	4.771	2.327	18631	3.22	5	95.4	80	120	
Tl 205	205	1	He	1.481	4.711	13082	3.38	1.5	98.7	80	120	
Pb206	206	1	He	1.959	4.389	6101	6.82	2	97.9	80	120	
Pb207	207	1	He	2.028	2.881	5398	5.77	2	101.4	80	120	
Pb 208	208	1	He	2.019	1.175	24061	4.64	2	100.9	80	120	
U 238	238	1	He	1.008	1.856	11008	5.22	1	100.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7922990	1.10	7475944	105.98	80	120	
Sc_45	45	2	H2	46810499	6.96	44729383	104.65	80	120	
Ge_72	72	1	He	4252450	2.58	3950352	107.65	80	120	
Ge_72	72	2	H2	13812566	4.84	13199044	104.65	80	120	
In_115	115	1	He	4809541	0.40	4664305	103.11	80	120	
In_115	115	2	H2	13005135	2.00	12147161	107.06	80	120	
Tm_169	169	1	He	4871970	3.49	4835424	100.76	80	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	CCVL 764633
Data File Name	086LICV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:19:53-07:00
Sample Type	LLICV
Dilution	1
Comment	LL_ STD
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	10.600	1.167	2899	6.96	10	106.0	50	150	
Be 9	9	2	H2	1.083	1.269	205	7.08	1	108.3	50	150	
B 11	11	2	H2	61.111	1.370	13750	8.32	50	122.2	50	150	
Na 23	23	1	He	41.167	1.892	58366	1.48	50	82.3	50	150	
Mg 24	24	1	He	48.686	1.046	20446	1.58	50	97.4	50	130	
Al 27	27	1	He	48.944	2.844	9937	3.37	50	97.9	50	150	
P 31	31	1	He	46.871	15.436	615	13.68	50	93.7	50	150	
K 39	39	1	He	47.144	6.102	95958	2.07	50	94.3	50	150	
Ca 40	40	2	H2	49.252	6.511	234696	13.71	50	98.5	50	150	
Ti 47	47	1	He	5.131	4.676	671	5.25	5	102.6	50	150	
V 51	51	1	He	9.681	1.364	33601	1.94	10	96.8	50	150	
Cr 52	52	1	He	1.673	0.101	10631	0.69	2	83.7	50	150	
Mn 55	55	1	He	0.950	4.311	2734	4.30	1	95.0	50	150	
Fe 56	56	1	He	51.243	1.662	179518	2.29	50	102.5	50	150	
Co 59	59	1	He	1.038	2.232	5817	2.67	1	103.8	50	150	
Ni 60	60	1	He	2.018	2.187	2859	2.36	2	100.9	50	150	
Cu 63	63	1	He	2.045	4.772	7972	5.11	2	102.2	50	150	
Zn 66	66	1	He	5.033	4.823	3496	3.84	5	100.7	50	150	
As 75	75	1	He	1.789	4.753	1197	3.60	2	89.4	50	150	
Se 78	78	2	H2	1.883	9.648	522	11.17	2	94.2	50	150	
Sr 88	88	1	He	4.748	2.446	19027	1.89	5	95.0	50	150	
Mo 95	95	1	He	2.015	7.371	4112	6.93	2	100.7	50	150	
Ag 107	107	1	He	0.963	3.956	5591	3.16	1	96.3	50	150	
Cd 111	111	1	He	0.984	4.547	938	3.35	1	98.4	50	150	
Sn 118	118	1	He	9.956	4.470	25559	2.57	10	99.6	50	150	
Sb 121	121	1	He	1.067	9.822	6296	2.88	2	53.3	50	150	
Ba 137	137	1	He	0.996	8.177	1252	6.25	1	99.6	50	150	
Ce 140	140	1	He	1.933	4.619	28961	2.99	2	96.6	50	150	
Gd 157	157	1	He	0.997	2.081	2968	2.17	1	99.7	50	150	
Au 197	197	1	He	4.670	1.568	17985	1.65	5	93.4	50	150	
Tl 205	205	1	He	0.961	1.200	8408	0.91	1	96.1	50	150	
Pb206	206	1	He	1.009	6.520	3153	6.97	1	100.9	50	150	
Pb207	207	1	He	0.982	4.301	2622	3.56	1	98.2	50	150	
Pb 208	208	1	He	1.000	2.083	11934	2.38	1	100.0	50	150	
U 238	238	1	He	0.998	1.112	10746	1.07	1	99.8	50	150	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7746703	0.68	7475944	103.62	80	120	
Sc_45	45	2	H2	44635884	8.04	44729383	99.79	80	120	
Ge_72	72	1	He	4131186	0.84	3950352	104.58	80	120	
Ge_72	72	2	H2	13515220	1.89	13199044	102.40	80	120	
In_115	115	1	He	4799429	1.86	4664305	102.90	80	120	
In_115	115	2	H2	12417197	1.37	12147161	102.22	80	120	
Tm_169	169	1	He	4803077	0.80	4835424	99.33	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	087_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:23:26-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	107.928	3.663	29025	8.63	100	107.9	90	110	
Be 9	9	2	H2	105.041	2.436	20042	7.96	100	105.0	90	110	
Na 23	23	1	He	4998.087	3.797	3916216	2.56	5100	98.0	90	110	
Mg 24	24	1	He	4998.968	3.139	2062005	1.83	5100	98.0	90	110	
Al 27	27	1	He	4872.781	3.687	959132	2.84	5100	95.5	90	110	
P 31	31	1	He	4943.633	2.706	56710	1.56	5000	98.9	90	110	
K 39	39	1	He	4967.719	3.593	2422832	2.93	5100	97.4	90	110	
Ca 40	40	2	H2	5200.182	8.457	21206334	14.60	5100	102.0	90	110	
Ti 47	47	1	He	201.573	3.496	26192	2.47	200	100.8	90	110	
V 51	51	1	He	99.237	3.561	329754	2.73	100	99.2	90	110	
Cr 52	52	1	He	99.963	3.882	399163	3.15	100	100.0	90	110	
Mn 55	55	1	He	99.250	3.019	275117	2.16	100	99.2	90	110	
Fe 56	56	1	He	5144.028	3.920	17613925	2.91	5100	100.9	90	110	
Co 59	59	1	He	100.869	4.201	563688	3.18	100	100.9	90	110	
Ni 60	60	1	He	101.540	3.397	142520	2.45	100	101.5	90	110	
Cu 63	63	1	He	101.298	3.694	376772	2.92	100	101.3	90	110	
Zn 66	66	1	He	101.102	2.551	65195	3.13	100	101.1	90	110	
As 75	75	1	He	99.331	1.388	44881	2.50	100	99.3	90	110	
Se 78	78	2	H2	102.065	5.682	27424	7.33	100	102.1	90	110	
Sr 88	88	1	He	97.969	1.736	381992	2.45	100	98.0	90	110	
Mo 95	95	1	He	198.486	1.775	395797	2.94	200	99.2	90	110	
Ag 107	107	1	He	50.353	1.891	278641	1.93	50	100.7	90	110	
Cd 111	111	1	He	98.512	2.895	90272	2.81	100	98.5	90	110	
Sn 118	118	1	He	99.630	3.465	239953	3.29	100	99.6	90	110	
Sb 121	121	1	He	49.916	2.899	138184	2.49	50	99.8	90	110	
Ba 137	137	1	He	99.186	3.305	118609	3.42	100	99.2	90	110	
Ce 140	140	1	He	99.016	3.270	1431306	2.85	100	99.0	90	110	
Gd 157	157	1	He	101.918	2.098	293615	2.69	100	101.9	90	110	
Au 197	197	1	He	102.548	0.714	381861	1.47	100	102.5	90	110	
Tl 205	205	1	He	50.043	0.906	419629	1.38	50	100.1	90	110	
Pb206	206	1	He	101.983	1.914	297410	2.66	100	102.0	1	10000	
Pb207	207	1	He	100.967	3.058	252211	3.72	100	101.0	1	10000	
Pb 208	208	1	He	101.811	1.883	1140299	2.59	100	101.8	90	110	
U 238	238	1	He	102.052	1.642	1063166	2.38	100	102.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7751090	1.32	7475944	103.68	80	120	
Sc_45	45	2	H2	45060765	6.14	44729383	100.74	80	120	
Ge_72	72	1	He	4059497	1.25	3950352	102.76	80	120	
Ge_72	72	2	H2	13436414	2.48	13199044	101.80	80	120	
In_115	115	1	He	4633793	0.95	4664305	99.35	80	120	
In_115	115	2	H2	12498596	1.69	12147161	102.89	80	120	
Tm_169	169	1	He	4651537	0.77	4835424	96.20	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	088_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:26:53-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.271	7.6	164	4.3	10	
Be 9	9	2	H2	0.008	53.7	2	43.3	1	
Na 23	23	1	He	0.604	94.2	27069	0.5	50	
Mg 24	24	1	He	0.338	11.8	516	1.8	50	
Al 27	27	1	He	0.719	9.7	455	4.4	50	
P 31	31	1	He	-1.889	-56.3	57	19.8	50	
K 39	39	1	He	1.802	276.0	75243	1.7	50	
Ca 40	40	2	H2	0.695	61.6	39878	12.2	50	
Ti 47	47	1	He	0.070	65.4	13	43.3	5	
V 51	51	1	He	-0.200	-1.2	945	0.7	10	
Cr 52	52	1	He	-0.049	-159.8	3864	8.5	2	
Mn 55	55	1	He	0.004	111.9	114	11.5	1	
Fe 56	56	1	He	0.518	21.5	5960	5.0	50	
Co 59	59	1	He	0.005	24.5	46	15.1	1	
Ni 60	60	1	He	0.008	89.2	39	24.0	2	
Cu 63	63	1	He	0.206	2.8	1154	3.1	2	
Zn 66	66	1	He	-0.021	-174.1	191	13.4	5	
As 75	75	1	He	-0.060	-132.9	353	7.8	2	
Se 78	78	2	H2	0.007	314.1	16	42.5	2	
Sr 88	88	1	He	0.005	109.8	219	7.9	5	
Mo 95	95	1	He	0.062	30.0	150	26.2	2	
Ag 107	107	1	He	0.001	325.5	77	31.3	1	
Cd 111	111	1	He	0.006	36.0	10	20.0	1	
Sn 118	118	1	He	0.090	21.6	1004	3.1	10	
Sb 121	121	1	He	-0.662	-4.4	1407	6.3	2	
Ba 137	137	1	He	0.005	225.9	24	51.6	1	
Ce 140	140	1	He	0.006	9.3	120	7.3	5	
Gd 157	157	1	He	0.007	20.4	22	17.3	1	
Au 197	197	1	He	0.082	33.7	341	30.8	5	
Tl 205	205	1	He	0.001	261.7	96	31.3	1	
Pb206	206	1	He	0.004	128.7	128	12.3	1	
Pb207	207	1	He	0.007	69.2	107	11.3	1	
Pb 208	208	1	He	0.010	29.6	481	7.4	1	
U 238	238	1	He	0.017	22.1	184	21.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7824373	1.48	7475944	104.66	80	120	
Sc_45	45	2	H2	45731863	7.70	44729383	102.24	80	120	
Ge_72	72	1	He	4122309	2.49	3950352	104.35	80	120	
Ge_72	72	2	H2	13759794	5.24	13199044	104.25	80	120	
In_115	115	1	He	4635852	2.36	4664305	99.39	80	120	
In_115	115	2	H2	12748004	1.78	12147161	104.95	80	120	
Tm_169	169	1	He	4757100	0.98	4835424	98.38	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	089_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:30:30-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	106.773	2.494	28996	10.83	100	106.8	90	110	
Be 9	9	2	H2	104.192	2.230	20065	9.76	100	104.2	90	110	
Na 23	23	1	He	5210.508	3.916	4008696	2.77	5100	102.2	90	110	
Mg 24	24	1	He	5011.047	1.367	2030500	1.24	5100	98.3	90	110	
Al 27	27	1	He	4988.057	2.612	964375	2.00	5100	97.8	90	110	
P 31	31	1	He	5030.886	2.507	56686	2.29	5000	100.6	90	110	
K 39	39	1	He	5151.347	5.015	2464517	4.02	5100	101.0	90	110	
Ca 40	40	2	H2	5158.032	7.919	21253831	16.44	5100	101.1	90	110	
Ti 47	47	1	He	204.356	1.992	26082	1.11	200	102.2	90	110	
V 51	51	1	He	102.849	3.247	335621	2.68	100	102.8	90	110	
Cr 52	52	1	He	103.095	3.206	404188	2.14	100	103.1	90	110	
Mn 55	55	1	He	101.777	3.346	277077	2.50	100	101.8	90	110	
Fe 56	56	1	He	5254.904	2.548	17674510	1.84	5100	103.0	90	110	
Co 59	59	1	He	103.793	3.607	569722	2.84	100	103.8	90	110	
Ni 60	60	1	He	104.104	3.453	143510	2.55	100	104.1	90	110	
Cu 63	63	1	He	104.916	3.154	383263	2.41	100	104.9	90	110	
Zn 66	66	1	He	98.742	2.990	65402	3.71	100	98.7	90	110	
As 75	75	1	He	98.231	1.979	45583	2.38	100	98.2	90	110	
Se 78	78	2	H2	102.222	1.149	27860	8.43	100	102.2	90	110	
Sr 88	88	1	He	96.988	1.415	388381	2.16	100	97.0	90	110	
Mo 95	95	1	He	196.383	2.715	402145	3.19	200	98.2	90	110	
Ag 107	107	1	He	50.958	2.996	281151	0.91	50	101.9	90	110	
Cd 111	111	1	He	99.593	4.200	90991	2.95	100	99.6	90	110	
Sn 118	118	1	He	100.440	4.615	241155	3.01	100	100.4	90	110	
Sb 121	121	1	He	50.396	3.833	139068	2.02	50	100.8	90	110	
Ba 137	137	1	He	101.200	3.822	120647	2.22	100	101.2	90	110	
Ce 140	140	1	He	100.705	4.185	1451351	2.42	100	100.7	90	110	
Gd 157	157	1	He	100.414	3.231	296491	3.57	100	100.4	90	110	
Au 197	197	1	He	100.955	2.621	385287	2.69	100	101.0	90	110	
Tl 205	205	1	He	49.180	3.122	422653	3.00	50	98.4	90	110	
Pb206	206	1	He	101.094	2.612	302118	2.25	100	101.1	1	10000	
Pb207	207	1	He	100.837	1.828	258131	1.83	100	100.8	1	10000	
Pb 208	208	1	He	101.407	1.925	1163992	1.97	100	101.4	90	110	
U 238	238	1	He	101.073	2.429	1079103	2.33	100	101.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7612711	1.34	7475944	101.83	80	120	
Sc_45	45	2	H2	45489824	8.92	44729383	101.70	80	120	
Ge_72	72	1	He	4169144	1.21	3950352	105.54	80	120	
Ge_72	72	2	H2	13628293	7.31	13199044	103.25	80	120	
In_115	115	1	He	4622034	2.37	4664305	99.09	80	120	
In_115	115	2	H2	12607159	2.88	12147161	103.79	80	120	
Tm_169	169	1	He	4767586	0.93	4835424	98.60	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	090_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:33:57-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.257	11.0	154	2.7	10	
Be 9	9	2	H2	0.015	72.0	3	60.1	1	
Na 23	23	1	He	0.970	23.0	26737	0.8	50	
Mg 24	24	1	He	0.349	28.1	509	7.7	50	
Al 27	27	1	He	0.659	16.0	433	5.8	50	
P 31	31	1	He	-2.023	-66.5	55	28.4	50	
K 39	39	1	He	2.728	37.1	73988	1.8	50	
Ca 40	40	2	H2	0.524	86.0	37596	12.5	50	
Ti 47	47	1	He	0.066	128.9	13	87.0	5	
V 51	51	1	He	-0.222	-14.2	849	10.7	10	
Cr 52	52	1	He	-0.042	-33.9	3802	2.8	2	
Mn 55	55	1	He	0.002	404.0	107	21.7	1	
Fe 56	56	1	He	0.489	21.8	5732	7.3	50	
Co 59	59	1	He	0.005	47.7	48	28.9	1	
Ni 60	60	1	He	0.004	169.2	33	27.6	2	
Cu 63	63	1	He	0.222	6.8	1184	5.9	2	
Zn 66	66	1	He	0.047	35.8	229	3.9	5	
As 75	75	1	He	-0.139	-52.7	310	10.2	2	
Se 78	78	2	H2	0.018	72.8	18	17.3	2	
Sr 88	88	1	He	0.006	43.9	217	4.7	5	
Mo 95	95	1	He	0.074	31.8	169	26.2	2	
Ag 107	107	1	He	0.002	151.3	83	24.3	1	
Cd 111	111	1	He	0.007	121.8	11	71.3	1	
Sn 118	118	1	He	0.064	86.0	960	10.6	10	
Sb 121	121	1	He	-0.600	-5.9	1612	7.8	2	
Ba 137	137	1	He	-0.003	-189.9	16	49.5	1	
Ce 140	140	1	He	0.004	26.5	97	19.2	5	
Gd 157	157	1	He	0.006	18.3	20	16.7	1	
Au 197	197	1	He	0.076	13.7	318	11.6	5	
Tl 205	205	1	He	0.003	57.5	104	9.8	1	
Pb206	206	1	He	-0.002	-392.9	109	19.7	1	
Pb207	207	1	He	0.015	60.3	127	19.9	1	
Pb 208	208	1	He	0.010	55.2	479	14.5	1	
U 238	238	1	He	0.016	32.3	173	30.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7646352	1.37	7475944	102.28	80	120	
Sc_45	45	2	H2	43880516	7.60	44729383	98.10	80	120	
Ge_72	72	1	He	4017854	1.26	3950352	101.71	80	120	
Ge_72	72	2	H2	13175412	4.05	13199044	99.82	80	120	
In_115	115	1	He	4743440	3.19	4664305	101.70	80	120	
In_115	115	2	H2	12372258	3.04	12147161	101.85	80	120	
Tm_169	169	1	He	4700844	2.09	4835424	97.22	80	120	

Sample Report

Sample Table

Sample Name	320-22881-M-1-D
Data File Name	091SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:37:32-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	13.916	13.916	3.01	3726	7.40		2000	2000	
Be 9	9	2	H2	0.464	0.464	17.29	87	16.28		2000	2000	
B 11	11	2	H2	54.315	54.315	6.08	12470	7.36		10000	10000	
Na 23	23	1	He	18790.044	18790.044	3.89	14832870	3.18		100000	100000	
Mg 24	24	1	He	15229.737	15229.737	3.46	6359076	2.36		100000	100000	
Al 27	27	1	He	11787.078	11787.078	5.64	2347839	4.37		100000	100000	
P 31	31	1	He	3141.945	3141.945	1.83	36521	1.35		100000	100000	
K 39	39	1	He	2502.570	2502.570	2.01	1272739	1.26		100000	100000	
Ca 40	40	2	H2	71946.679	71946.679	8.46	285405643	12.64		100000	100000	
Ti 47	47	1	He	411.635	411.635	2.45	54147	1.12		2000	2000	
V 51	51	1	He	35.714	35.714	2.90	121181	1.90		2000	2000	
Cr 52	52	1	He	173.506	173.506	2.45	698482	1.98		2000	2000	
Mn 55	55	1	He	2410.437	2410.437	3.56	6762285	3.09		22000	22000	
Fe 56	56	1	He	28072.099	28072.099	2.21	97309539	1.62		100000	100000	
Co 59	59	1	He	20.782	20.782	2.02	117617	1.96		2000	2000	
Ni 60	60	1	He	170.335	170.335	2.36	242048	1.85		2000	2000	
Cu 63	63	1	He	102.833	102.833	1.85	387254	1.29		2000	2000	
Zn 66	66	1	He	111.991	111.991	2.90	72263	2.00		2000	2000	
As 75	75	1	He	17.312	17.312	2.35	8139	0.95		2000	2000	
Se 78	78	2	H2	0.388	0.388	11.75	116	10.77		2000	2000	
Sr 88	88	1	He	433.420	433.420	5.13	1690477	3.87		2000	2000	
Mo 95	95	1	He	9.500	9.500	1.33	18988	2.26		2000	2000	
Ag 107	107	1	He	0.975	0.975	4.69	5550	2.74		500	500	
Cd 111	111	1	He	0.829	0.829	4.06	777	2.63		2000	2000	
Sn 118	118	1	He	2.334	2.334	8.44	6489	3.88		2000	2000	
Sb 121	121	1	He	0.227	0.227	20.25	3878	5.15		2000	2000	
Ba 137	137	1	He	121.500	121.500	4.16	147637	0.77		2000	2000	
Ce 140	140	1	He	16.533	16.533	4.78	242878	1.20		2000	2000	
Gd 157	157	1	He	2.566	2.566	4.33	7752	5.41		2000	2000	
Au 197	197	1	He	0.039	0.039	15.50	182	13.97		2000	2000	
Tl 205	205	1	He	0.116	0.116	10.53	1107	9.47		500	500	
Pb206	206	1	He	15.612	15.612	0.13	47815	1.00		12000	12000	
Pb207	207	1	He	14.759	14.759	1.21	38715	1.10		12000	12000	
Pb 208	208	1	He	15.336	15.336	0.79	180343	1.07		12000	12000	
U 238	238	1	He	0.654	0.654	3.06	7151	4.17		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7847436	1.86	7475944	104.97	80	120	
Sc_45	45	2	H2	43953772	4.41	44729383	98.27	80	120	
Ge_72	72	1	He	4064360	1.30	3950352	102.89	80	120	
Ge_72	72	2	H2	13285626	2.87	13199044	100.66	80	120	
In_115	115	1	He	4713387	3.60	4664305	101.05	80	120	
In_115	115	2	H2	12585336	1.39	12147161	103.61	80	120	
Tm_169	169	1	He	4875507	1.12	4835424	100.83	80	120	

Sample Report

Sample Table

Sample Name	sd 320-22881-M-1-D@5
Data File Name	092SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:40:55-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	2.768	2.768	3.13	824	6.20		2000	2000	
Be 9	9	2	H2	0.090	0.090	24.49	17	21.65		2000	2000	
B 11	11	2	H2	20.293	20.293	5.00	7212	7.34		10000	10000	
Na 23	23	1	He	3907.465	3907.465	2.60	2999467	2.68		100000	100000	
Mg 24	24	1	He	3077.792	3077.792	5.96	1240575	3.55		100000	100000	
Al 27	27	1	He	2278.001	2278.001	3.37	438449	1.48		100000	100000	
P 31	31	1	He	647.541	647.541	3.49	7327	0.65		100000	100000	
K 39	39	1	He	514.039	514.039	3.93	309629	1.06		100000	100000	
Ca 40	40	2	H2	13259.302	13259.302	8.41	53657605	15.50		100000	100000	
Ti 47	47	1	He	82.796	82.796	2.98	10519	1.02		2000	2000	
V 51	51	1	He	7.341	7.341	1.72	25295	1.46		2000	2000	
Cr 52	52	1	He	35.632	35.632	4.35	141590	2.49		2000	2000	
Mn 55	55	1	He	484.377	484.377	3.24	1312032	1.51		22000	22000	
Fe 56	56	1	He	5707.888	5707.888	5.74	19095248	2.92		100000	100000	
Co 59	59	1	He	4.272	4.272	2.57	23357	1.17		2000	2000	
Ni 60	60	1	He	35.320	35.320	3.76	48474	1.94		2000	2000	
Cu 63	63	1	He	21.585	21.585	5.04	78735	2.27		2000	2000	
Zn 66	66	1	He	23.634	23.634	4.48	14933	3.29		2000	2000	
As 75	75	1	He	3.619	3.619	4.14	1937	1.72		2000	2000	
Se 78	78	2	H2	0.079	0.079	14.65	34	10.60		2000	2000	
Sr 88	88	1	He	82.433	82.433	3.54	311822	2.18		2000	2000	
Mo 95	95	1	He	2.007	2.007	3.54	3906	2.74		2000	2000	
Ag 107	107	1	He	0.190	0.190	7.37	1117	6.72		500	500	
Cd 111	111	1	He	0.172	0.172	11.81	162	12.53		2000	2000	
Sn 118	118	1	He	0.501	0.501	13.57	1985	7.62		2000	2000	
Sb 121	121	1	He	-0.544	-0.544	-9.86	1721	7.92		2000	2000	
Ba 137	137	1	He	24.124	24.124	3.66	28774	2.52		2000	2000	
Ce 140	140	1	He	3.258	3.258	5.48	46976	4.01		2000	2000	
Gd 157	157	1	He	0.515	0.515	12.73	1516	9.98		2000	2000	
Au 197	197	1	He	0.013	0.013	42.41	80	26.02		2000	2000	
Tl 205	205	1	He	0.019	0.019	9.64	247	8.44		500	500	
Pb206	206	1	He	3.172	3.172	7.76	9548	4.97		12000	12000	
Pb207	207	1	He	3.013	3.013	7.09	7767	4.78		12000	12000	
Pb 208	208	1	He	3.100	3.100	4.99	35796	1.94		12000	12000	
U 238	238	1	He	0.124	0.124	5.88	1328	2.82		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7578827	2.77	7475944	101.38	80	120	
Sc_45	45	2	H2	44744144	7.31	44729383	100.03	80	120	
Ge_72	72	1	He	3939526	1.62	3950352	99.73	80	120	
Ge_72	72	2	H2	13270627	1.95	13199044	100.54	80	120	
In_115	115	1	He	4621130	1.52	4664305	99.07	80	120	
In_115	115	2	H2	12212089	1.73	12147161	100.53	80	120	
Tm_169	169	1	He	4753563	3.14	4835424	98.31	80	120	

Sample Report

Sample Table

Sample Name	pds 320-22881-M-1-D
Data File Name	093SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:44:24-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	450.229	450.229	2.37	113118	7.81		2000	2000	
Be 9	9	2	H2	436.125	436.125	2.74	77933	7.85		2000	2000	
B 11	11	2	H2	2152.281	2152.281	4.03	330860	9.85		10000	10000	
Na 23	23	1	He	20706.390	20706.390	1.72	15732907	2.23		100000	100000	
Mg 24	24	1	He	16943.547	16943.547	3.41	6811092	3.81		100000	100000	
Al 27	27	1	He	13382.727	13382.727	2.73	2566814	3.12		100000	100000	
P 31	31	1	He	5015.714	5015.714	2.54	56075	3.05		100000	100000	
K 39	39	1	He	4455.351	4455.351	4.79	2125224	5.10		100000	100000	
Ca 40	40	2	H2	69846.323	69846.323	7.70	266375739	14.19		100000	100000	
Ti 47	47	1	He	812.806	812.806	2.01	102923	2.50		2000	2000	
V 51	51	1	He	457.640	457.640	1.64	1476446	2.12		2000	2000	
Cr 52	52	1	He	592.509	592.509	1.80	2286423	1.92		2000	2000	
Mn 55	55	1	He	2758.368	2758.368	3.54	7449523	4.06		22000	22000	
Fe 56	56	1	He	29647.491	29647.491	3.21	98926101	3.52		100000	100000	
Co 59	59	1	He	437.301	437.301	2.16	2381807	2.51		2000	2000	
Ni 60	60	1	He	565.548	565.548	2.28	773522	2.70		2000	2000	
Cu 63	63	1	He	520.122	520.122	2.17	1883791	2.15		2000	2000	
Zn 66	66	1	He	503.841	503.841	1.93	316945	3.08		2000	2000	
As 75	75	1	He	413.704	413.704	2.58	181625	3.43		2000	2000	
Se 78	78	2	H2	418.383	418.383	0.95	105357	5.62		2000	2000	
Sr 88	88	1	He	823.468	823.468	1.87	3139472	4.26		2000	2000	
Mo 95	95	1	He	431.499	431.499	2.37	841426	3.72		2000	2000	
Ag 107	107	1	He	102.294	102.294	2.42	549546	2.73		500	500	
Cd 111	111	1	He	398.503	398.503	1.90	354543	2.15		2000	2000	
Sn 118	118	1	He	423.064	423.064	2.36	986887	2.83		2000	2000	
Sb 121	121	1	He	447.928	447.928	1.57	1179344	2.29		2000	2000	
Ba 137	137	1	He	533.099	533.099	1.76	618858	2.09		2000	2000	
Ce 140	140	1	He	424.841	424.841	1.74	5962550	1.34		2000	2000	
Gd 157	157	1	He	409.089	409.089	4.25	1214398	2.66		2000	2000	
Au 197	197	1	He	413.425	413.425	2.87	1586525	1.15		2000	2000	
Tl 205	205	1	He	100.766	100.766	3.19	870752	1.82		500	500	
Pb206	206	1	He	414.128	414.128	3.90	1244123	2.25		12000	12000	
Pb207	207	1	He	423.931	423.931	4.03	1090846	2.29		12000	12000	
Pb 208	208	1	He	427.945	427.945	4.05	4937688	2.31		12000	12000	
U 238	238	1	He	416.079	416.079	6.28	4465396	4.53		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7552018	0.51	7475944	101.02	80	120	
Sc_45	45	2	H2	42219017	6.97	44729383	94.39	80	120	
Ge_72	72	1	He	3970209	2.56	3950352	100.50	80	120	
Ge_72	72	2	H2	12600026	4.76	13199044	95.46	80	120	
In_115	115	1	He	4498849	0.89	4664305	96.45	80	120	
In_115	115	2	H2	11726609	0.56	12147161	96.54	80	120	
Tm_169	169	1	He	4795673	1.71	4835424	99.18	80	120	

Sample Report

Sample Table

Sample Name	320-22881-M-1-E MS
Data File Name	094SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:47:34-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	196.727	196.727	2.88	48604	6.63		2000	2000	
Be 9	9	2	H2	182.607	182.607	2.38	32050	5.76		2000	2000	
B 11	11	2	H2	945.870	945.870	3.89	144856	8.15		10000	10000	
Na 23	23	1	He	21076.245	21076.245	2.36	15239865	2.53		100000	100000	
Mg 24	24	1	He	16853.210	16853.210	1.38	6447270	1.59		100000	100000	
Al 27	27	1	He	13335.866	13335.866	0.92	2434606	2.47		100000	100000	
P 31	31	1	He	4120.396	4120.396	1.98	43846	0.82		100000	100000	
K 39	39	1	He	3435.722	3435.722	2.48	1575200	2.56		100000	100000	
Ca 40	40	2	H2	72990.519	72990.519	7.32	273176112	11.95		100000	100000	
Ti 47	47	1	He	612.071	612.071	1.72	73755	1.22		2000	2000	
V 51	51	1	He	211.176	211.176	2.11	649101	1.13		2000	2000	
Cr 52	52	1	He	345.983	345.983	2.61	1272049	1.84		2000	2000	
Mn 55	55	1	He	2746.925	2746.925	1.99	7058749	0.49		22000	22000	
Fe 56	56	1	He	30443.208	30443.208	1.10	96679811	1.99		100000	100000	
Co 59	59	1	He	196.195	196.195	1.98	1016950	1.81		2000	2000	
Ni 60	60	1	He	396.019	396.019	2.20	515512	2.63		2000	2000	
Cu 63	63	1	He	281.080	281.080	3.30	968853	2.24		2000	2000	
Zn 66	66	1	He	290.308	290.308	1.82	172967	1.93		2000	2000	
As 75	75	1	He	189.209	189.209	2.51	78830	2.55		2000	2000	
Se 78	78	2	H2	175.294	175.294	4.30	43479	5.80		2000	2000	
Sr 88	88	1	He	634.234	634.234	1.51	2288615	2.06		2000	2000	
Mo 95	95	1	He	194.009	194.009	2.19	358142	2.33		2000	2000	
Ag 107	107	1	He	44.543	44.543	2.32	233302	1.25		500	500	
Cd 111	111	1	He	170.071	170.071	1.33	147513	0.37		2000	2000	
Sn 118	118	1	He	175.181	175.181	2.94	398765	2.02		2000	2000	
Sb 121	121	1	He	151.772	151.772	3.19	391488	2.08		2000	2000	
Ba 137	137	1	He	298.875	298.875	3.59	338189	2.49		2000	2000	
Ce 140	140	1	He	195.168	195.168	2.41	2670372	1.39		2000	2000	
Gd 157	157	1	He	173.216	173.216	4.75	501888	1.87		2000	2000	
Au 197	197	1	He	168.027	168.027	3.85	629482	2.08		2000	2000	
Tl 205	205	1	He	43.072	43.072	4.08	363351	1.75		500	500	
Pb206	206	1	He	182.054	182.054	3.90	534004	1.76		12000	12000	
Pb207	207	1	He	187.033	187.033	5.05	469745	1.83		12000	12000	
Pb 208	208	1	He	186.264	186.264	4.59	2097904	1.50		12000	12000	
U 238	238	1	He	181.753	181.753	7.65	1902995	4.26		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7188191	1.79	7475944	96.15	80	120	
Sc_45	45	2	H2	41475333	5.22	44729383	92.73	80	120	
Ge_72	72	1	He	3758499	0.55	3950352	95.14	80	120	
Ge_72	72	2	H2	12408301	2.44	13199044	94.01	80	120	
In_115	115	1	He	4386324	1.12	4664305	94.04	80	120	
In_115	115	2	H2	11546775	1.14	12147161	95.06	80	120	
Tm_169	169	1	He	4683595	3.48	4835424	96.86	80	120	

Sample Table

Sample Name	320-22881-M-1-F MSD
Data File Name	095SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:50:52-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	200.837	200.837	3.51	50102	4.36		2000	2000	
Be 9	9	2	H2	186.393	186.393	3.70	33041	4.42		2000	2000	
B 11	11	2	H2	968.459	968.459	3.11	149659	5.42		10000	10000	
Na 23	23	1	He	21246.857	21246.857	0.85	15782703	1.05		100000	100000	
Mg 24	24	1	He	16844.655	16844.655	1.21	6619657	0.12		100000	100000	
Al 27	27	1	He	13018.809	13018.809	1.25	2441626	2.46		100000	100000	
P 31	31	1	He	4185.111	4185.111	0.90	45755	0.42		100000	100000	
K 39	39	1	He	3466.665	3466.665	1.22	1632074	0.16		100000	100000	
Ca 40	40	2	H2	73376.087	73376.087	5.23	277099360	8.05		100000	100000	
Ti 47	47	1	He	600.379	600.379	1.83	74325	1.57		2000	2000	
V 51	51	1	He	214.611	214.611	0.83	677740	0.93		2000	2000	
Cr 52	52	1	He	355.794	355.794	2.05	1343968	2.32		2000	2000	
Mn 55	55	1	He	2817.039	2817.039	2.83	7436433	1.75		22000	22000	
Fe 56	56	1	He	30841.204	30841.204	1.21	100610723	1.14		100000	100000	
Co 59	59	1	He	197.037	197.037	1.28	1049210	0.75		2000	2000	
Ni 60	60	1	He	350.054	350.054	1.30	468118	1.64		2000	2000	
Cu 63	63	1	He	283.920	283.920	1.17	1005591	1.26		2000	2000	
Zn 66	66	1	He	287.254	287.254	2.69	175786	1.38		2000	2000	
As 75	75	1	He	192.651	192.651	4.16	82423	2.93		2000	2000	
Se 78	78	2	H2	180.790	180.790	5.40	45108	3.72		2000	2000	
Sr 88	88	1	He	643.506	643.506	3.46	2384794	2.44		2000	2000	
Mo 95	95	1	He	192.379	192.379	3.39	364730	2.11		2000	2000	
Ag 107	107	1	He	45.077	45.077	2.16	240165	1.46		500	500	
Cd 111	111	1	He	172.365	172.365	2.27	152057	0.87		2000	2000	
Sn 118	118	1	He	176.469	176.469	3.36	408618	2.93		2000	2000	
Sb 121	121	1	He	151.098	151.098	3.71	396433	2.45		2000	2000	
Ba 137	137	1	He	301.982	301.982	1.82	347628	1.04		2000	2000	
Ce 140	140	1	He	193.737	193.737	3.35	2695909	1.62		2000	2000	
Gd 157	157	1	He	173.679	173.679	3.45	519830	1.91		2000	2000	
Au 197	197	1	He	164.339	164.339	3.60	635781	2.11		2000	2000	
Tl 205	205	1	He	42.864	42.864	4.39	373434	3.00		500	500	
Pb206	206	1	He	182.874	182.874	3.35	553981	1.84		12000	12000	
Pb207	207	1	He	188.035	188.035	3.86	487879	2.44		12000	12000	
Pb 208	208	1	He	186.563	186.563	3.47	2170601	2.05		12000	12000	
U 238	238	1	He	182.744	182.744	4.30	1977911	3.15		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7384281	1.31	7475944	98.77	80	120	
Sc_45	45	2	H2	41913796	4.78	44729383	93.71	80	120	
Ge_72	72	1	He	3861237	1.31	3950352	97.74	80	120	
Ge_72	72	2	H2	12493110	1.68	13199044	94.65	80	120	
In_115	115	1	He	4461948	1.72	4664305	95.66	80	120	
In_115	115	2	H2	11870027	0.76	12147161	97.72	80	120	
Tm_169	169	1	He	4834742	1.57	4835424	99.99	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	096_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:54:11-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	109.767	0.590	28223	8.06	100	109.8	90	110	
Be 9	9	2	H2	107.017	1.085	19532	8.60	100	107.0	90	110	
Na 23	23	1	He	5223.058	1.620	3753706	0.89	5100	102.4	90	110	
Mg 24	24	1	He	5087.402	1.360	1925700	2.71	5100	99.8	90	110	
Al 27	27	1	He	5013.787	1.837	905562	2.77	5100	98.3	90	110	
P 31	31	1	He	5037.180	2.905	53017	3.40	5000	100.7	90	110	
K 39	39	1	He	5149.565	2.883	2301191	1.47	5100	101.0	90	110	
Ca 40	40	2	H2	5401.466	8.478	21091525	16.15	5100	105.9	90	110	
Ti 47	47	1	He	206.162	2.035	24583	3.25	200	103.1	90	110	
V 51	51	1	He	102.753	1.523	313243	2.42	100	102.8	90	110	
Cr 52	52	1	He	103.700	2.093	379800	2.66	100	103.7	90	110	
Mn 55	55	1	He	103.437	1.617	263049	1.60	100	103.4	90	110	
Fe 56	56	1	He	5276.604	1.355	16579341	2.30	5100	103.5	90	110	
Co 59	59	1	He	103.877	0.974	532688	2.08	100	103.9	90	110	
Ni 60	60	1	He	105.327	2.166	135646	2.70	100	105.3	90	110	
Cu 63	63	1	He	104.760	1.491	357532	2.61	100	104.8	90	110	
Zn 66	66	1	He	99.899	1.868	61441	1.43	100	99.9	90	110	
As 75	75	1	He	98.929	2.241	42630	1.78	100	98.9	90	110	
Se 78	78	2	H2	106.770	3.589	27710	6.60	100	106.8	90	110	
Sr 88	88	1	He	97.594	2.482	362920	2.09	100	97.6	90	110	
Mo 95	95	1	He	198.629	2.539	377719	2.14	200	99.3	90	110	
Ag 107	107	1	He	51.416	3.183	268334	2.52	50	102.8	90	110	
Cd 111	111	1	He	99.702	3.464	86165	2.78	100	99.7	90	110	
Sn 118	118	1	He	101.999	3.118	231674	2.46	100	102.0	90	110	
Sb 121	121	1	He	51.958	2.661	135542	1.80	50	103.9	90	110	
Ba 137	137	1	He	101.072	1.649	113998	1.58	100	101.1	90	110	
Ce 140	140	1	He	101.761	2.934	1387451	2.37	100	101.8	90	110	
Gd 157	157	1	He	102.897	5.034	286440	2.47	100	102.9	90	110	
Au 197	197	1	He	103.961	4.282	374139	1.83	100	104.0	90	110	
Tl 205	205	1	He	50.646	4.364	410471	2.43	50	101.3	90	110	
Pb206	206	1	He	103.763	5.996	292357	3.69	100	103.8	1	10000	
Pb207	207	1	He	102.387	5.157	247131	3.00	100	102.4	1	10000	
Pb 208	208	1	He	103.306	4.889	1118127	2.81	100	103.3	90	110	
U 238	238	1	He	103.178	4.399	1038947	3.02	100	103.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7110175	1.47	7475944	95.11	80	120	
Sc_45	45	2	H2	43107896	7.56	44729383	96.37	80	120	
Ge_72	72	1	He	3872063	0.44	3950352	98.02	80	120	
Ge_72	72	2	H2	12975949	3.17	13199044	98.31	80	120	
In_115	115	1	He	4370717	0.98	4664305	93.71	80	120	
In_115	115	2	H2	12218791	1.34	12147161	100.59	80	120	
Tm_169	169	1	He	4499500	3.21	4835424	93.05	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	097_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T14:57:38-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.437	18.6	201	6.2	10	
Be 9	9	2	H2	0.025	63.3	5	52.9	1	
Na 23	23	1	He	2.830	25.4	27175	2.3	50	
Mg 24	24	1	He	0.391	15.8	508	4.9	50	
Al 27	27	1	He	0.693	20.5	423	4.2	50	
P 31	31	1	He	0.222	425.7	77	15.2	50	
K 39	39	1	He	9.898	43.2	74598	1.8	50	
Ca 40	40	2	H2	0.806	58.3	38904	11.1	50	
Ti 47	47	1	He	0.033	51.4	8	25.0	5	
V 51	51	1	He	-0.214	-2.2	845	4.0	10	
Cr 52	52	1	He	0.028	78.8	3934	3.3	2	
Mn 55	55	1	He	0.014	58.0	135	14.8	1	
Fe 56	56	1	He	0.753	24.1	6383	7.9	50	
Co 59	59	1	He	0.007	33.2	57	22.4	1	
Ni 60	60	1	He	0.005	81.8	33	15.4	2	
Cu 63	63	1	He	0.256	7.5	1262	3.1	2	
Zn 66	66	1	He	0.052	93.8	225	13.3	5	
As 75	75	1	He	-0.107	-22.1	315	3.0	2	
Se 78	78	2	H2	0.029	81.1	21	32.2	2	
Sr 88	88	1	He	0.000	-3459.4	188	9.5	5	
Mo 95	95	1	He	0.059	17.7	136	15.0	2	
Ag 107	107	1	He	0.000	861.6	72	33.4	1	
Cd 111	111	1	He	0.012	35.5	15	27.2	1	
Sn 118	118	1	He	0.121	25.6	1076	5.9	10	
Sb 121	121	1	He	-0.694	-10.7	1313	12.3	2	
Ba 137	137	1	He	0.004	156.6	23	28.6	1	
Ce 140	140	1	He	0.006	28.2	119	20.3	5	
Gd 157	157	1	He	0.008	16.1	26	15.1	1	
Au 197	197	1	He	0.099	5.5	403	3.0	5	
Tl 205	205	1	He	0.006	31.5	133	10.9	1	
Pb206	206	1	He	0.007	64.3	136	12.4	1	
Pb207	207	1	He	0.006	84.8	104	12.9	1	
Pb 208	208	1	He	0.015	19.3	536	4.1	1	
U 238	238	1	He	0.018	9.1	200	10.0	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7378471	2.46	7475944	98.70	80	120	
Sc_45	45	2	H2	44125951	6.77	44729383	98.65	80	120	
Ge_72	72	1	He	3903904	1.82	3950352	98.82	80	120	
Ge_72	72	2	H2	13151952	3.18	13199044	99.64	80	120	
In_115	115	1	He	4623926	3.36	4664305	99.13	80	120	
In_115	115	2	H2	12503150	2.17	12147161	102.93	80	120	
Tm_169	169	1	He	4711888	2.25	4835424	97.45	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	098_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:01:13-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	109.033	4.125	28712	6.79	100	109.0	90	110	
Be 9	9	2	H2	106.524	3.565	19902	6.09	100	106.5	90	110	
Na 23	23	1	He	5209.070	0.973	3942076	2.05	5100	102.1	90	110	
Mg 24	24	1	He	5146.931	3.206	2050826	3.37	5100	100.9	90	110	
Al 27	27	1	He	4933.088	1.082	938061	2.46	5100	96.7	90	110	
P 31	31	1	He	4984.101	1.183	55232	2.43	5000	99.7	90	110	
K 39	39	1	He	5027.516	0.857	2367655	1.91	5100	98.6	90	110	
Ca 40	40	2	H2	5218.985	8.720	20804704	11.37	5100	102.3	90	110	
Ti 47	47	1	He	198.656	0.933	24936	1.94	200	99.3	90	110	
V 51	51	1	He	101.977	1.957	327338	3.25	100	102.0	90	110	
Cr 52	52	1	He	101.868	1.302	392898	2.67	100	101.9	90	110	
Mn 55	55	1	He	100.093	1.378	268033	2.62	100	100.1	90	110	
Fe 56	56	1	He	5101.555	2.494	16874974	2.80	5100	100.0	90	110	
Co 59	59	1	He	102.567	1.669	553796	3.03	100	102.6	90	110	
Ni 60	60	1	He	102.614	1.852	139149	3.14	100	102.6	90	110	
Cu 63	63	1	He	102.857	1.348	369577	2.47	100	102.9	90	110	
Zn 66	66	1	He	103.460	2.470	64125	3.06	100	103.5	90	110	
As 75	75	1	He	101.420	2.361	44037	2.78	100	101.4	90	110	
Se 78	78	2	H2	105.678	3.659	27782	4.14	100	105.7	90	110	
Sr 88	88	1	He	100.615	1.767	377081	2.22	100	100.6	90	110	
Mo 95	95	1	He	203.863	3.316	390703	3.51	200	101.9	90	110	
Ag 107	107	1	He	50.066	2.954	275740	2.91	50	100.1	90	110	
Cd 111	111	1	He	98.311	4.153	89646	3.39	100	98.3	90	110	
Sn 118	118	1	He	98.974	3.819	237220	3.14	100	99.0	90	110	
Sb 121	121	1	He	50.381	4.577	138749	3.34	50	100.8	90	110	
Ba 137	137	1	He	98.586	3.477	117333	3.60	100	98.6	90	110	
Ce 140	140	1	He	98.751	3.404	1420708	2.99	100	98.8	90	110	
Gd 157	157	1	He	100.300	0.968	291922	3.50	100	100.3	90	110	
Au 197	197	1	He	101.788	0.592	382886	2.74	100	101.8	90	110	
Tl 205	205	1	He	50.180	0.785	425018	2.12	50	100.4	90	110	
Pb206	206	1	He	100.934	1.151	297266	1.49	100	100.9	1	10000	
Pb207	207	1	He	102.235	1.297	257990	3.67	100	102.2	1	10000	
Pb 208	208	1	He	102.211	0.813	1156414	3.04	100	102.2	90	110	
U 238	238	1	He	101.770	1.278	1070862	2.46	100	101.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7485568	1.37	7475944	100.13	80	120	
Sc_45	45	2	H2	44128500	2.86	44729383	98.66	80	120	
Ge_72	72	1	He	3902128	1.29	3950352	98.78	80	120	
Ge_72	72	2	H2	13151284	0.50	13199044	99.64	80	120	
In_115	115	1	He	4612398	2.07	4664305	98.89	80	120	
In_115	115	2	H2	12638459	1.67	12147161	104.04	80	120	
Tm_169	169	1	He	4698961	2.62	4835424	97.18	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	099_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:04:42-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.371	8.7	183	4.8	10	
Be 9	9	2	H2	0.010	76.7	2	58.1	1	
Na 23	23	1	He	2.777	13.6	27043	0.3	50	
Mg 24	24	1	He	0.592	81.9	585	32.9	50	
Al 27	27	1	He	1.011	62.0	482	24.9	50	
P 31	31	1	He	-0.655	-151.9	67	15.0	50	
K 39	39	1	He	10.705	21.4	74716	0.7	50	
Ca 40	40	2	H2	0.734	28.0	38443	11.4	50	
Ti 47	47	1	He	0.022	82.7	7	34.6	5	
V 51	51	1	He	-0.202	-9.2	880	7.5	10	
Cr 52	52	1	He	0.007	458.8	3840	2.0	2	
Mn 55	55	1	He	0.028	183.5	171	79.3	1	
Fe 56	56	1	He	1.235	90.6	7944	46.3	50	
Co 59	59	1	He	0.008	7.5	62	5.6	1	
Ni 60	60	1	He	0.014	16.6	45	6.8	2	
Cu 63	63	1	He	0.234	2.3	1182	2.1	2	
Zn 66	66	1	He	0.050	26.9	227	4.9	5	
As 75	75	1	He	-0.023	-106.6	355	4.2	2	
Se 78	78	2	H2	0.036	56.3	22	27.4	2	
Sr 88	88	1	He	0.006	70.9	214	7.1	5	
Mo 95	95	1	He	0.079	14.3	177	13.2	2	
Ag 107	107	1	He	0.001	185.4	77	15.7	1	
Cd 111	111	1	He	0.004	161.1	8	66.1	1	
Sn 118	118	1	He	0.080	36.0	991	9.5	10	
Sb 121	121	1	He	-0.643	-1.4	1472	1.5	2	
Ba 137	137	1	He	0.008	96.6	29	35.2	1	
Ce 140	140	1	He	0.006	15.4	121	8.8	5	
Gd 157	157	1	He	0.006	22.5	19	20.4	1	
Au 197	197	1	He	0.086	21.9	352	20.2	5	
Tl 205	205	1	He	0.005	57.5	121	19.3	1	
Pb206	206	1	He	0.011	44.4	146	10.3	1	
Pb207	207	1	He	0.004	160.8	99	16.6	1	
Pb 208	208	1	He	0.009	65.0	471	15.9	1	
U 238	238	1	He	0.019	20.0	208	20.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7352651	1.14	7475944	98.35	80	120	
Sc_45	45	2	H2	43949836	9.35	44729383	98.26	80	120	
Ge_72	72	1	He	3942208	1.28	3950352	99.79	80	120	
Ge_72	72	2	H2	12968688	3.34	13199044	98.25	80	120	
In_115	115	1	He	4675683	2.41	4664305	100.24	80	120	
In_115	115	2	H2	12435087	0.40	12147161	102.37	80	120	
Tm_169	169	1	He	4669262	1.86	4835424	96.56	80	120	

Sample Report

Sample Table

Sample Name	320-22811-C-7-A
Data File Name	100SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:08:17-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	7.784	7.784	0.98	2054	7.13		2000	2000	
Be 9	9	2	H2	0.032	0.032	19.14	6	16.88		2000	2000	
B 11	11	2	H2	285.138	285.138	3.90	47455	9.65		10000	10000	
Na 23	23	1	He	30124.182	30124.182	0.55	21884719	0.50		100000	100000	
Mg 24	24	1	He	34155.288	34155.288	2.27	13133266	2.01		100000	100000	
Al 27	27	1	He	25.831	25.831	2.14	5027	2.00		100000	100000	
P 31	31	1	He	25.413	25.413	5.89	345	4.83		100000	100000	
K 39	39	1	He	21789.252	21789.252	0.82	9674633	0.74		100000	100000	
Ca 40	40	2	H2	199607.771	199607.771	8.39	767536832	14.71		100000	100000	>LDR
Ti 47	47	1	He	1.536	1.536	11.69	190	11.86		2000	2000	
V 51	51	1	He	0.023	0.023	65.22	1560	3.24		2000	2000	
Cr 52	52	1	He	1.432	1.432	1.86	9026	0.73		2000	2000	
Mn 55	55	1	He	1607.558	1607.558	0.52	4152994	0.33		22000	22000	
Fe 56	56	1	He	37542.456	37542.456	0.72	119838477	1.17		100000	100000	
Co 59	59	1	He	3.115	3.115	1.78	16248	1.47		2000	2000	
Ni 60	60	1	He	4.994	4.994	1.91	6559	1.38		2000	2000	
Cu 63	63	1	He	0.291	0.291	6.95	1360	5.44		2000	2000	
Zn 66	66	1	He	1.394	1.394	3.14	1025	1.00		2000	2000	
As 75	75	1	He	16.816	16.816	1.59	7391	2.16		2000	2000	
Se 78	78	2	H2	0.130	0.130	22.70	45	17.83		2000	2000	
Sr 88	88	1	He	564.996	564.996	3.77	2056836	2.08		2000	2000	
Mo 95	95	1	He	0.833	0.833	3.60	1575	1.56		2000	2000	
Ag 107	107	1	He	0.014	0.014	3.90	140	2.38		500	500	
Cd 111	111	1	He	0.027	0.027	7.98	28	7.14		2000	2000	
Sn 118	118	1	He	0.157	0.157	23.76	1112	8.38		2000	2000	
Sb 121	121	1	He	-0.728	-0.728	-2.16	1173	4.24		2000	2000	
Ba 137	137	1	He	79.596	79.596	2.25	90860	1.34		2000	2000	
Ce 140	140	1	He	0.792	0.792	4.11	10968	4.07		2000	2000	
Gd 157	157	1	He	0.159	0.159	7.63	453	8.67		2000	2000	
Au 197	197	1	He	0.030	0.030	19.07	141	16.76		2000	2000	
Tl 205	205	1	He	-0.002	-0.002	-53.25	63	15.79		500	500	
Pb206	206	1	He	0.054	0.054	24.12	266	15.59		12000	12000	
Pb207	207	1	He	0.055	0.055	33.13	221	20.02		12000	12000	
Pb 208	208	1	He	0.058	0.058	7.68	993	4.66		12000	12000	
U 238	238	1	He	0.242	0.242	5.00	2491	5.44		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7224988	0.60	7475944	96.64	80	120	
Sc_45	45	2	H2	42554160	6.20	44729383	95.14	80	120	
Ge_72	72	1	He	3793755	2.02	3950352	96.04	80	120	
Ge_72	72	2	H2	12642469	3.99	13199044	95.78	80	120	
In_115	115	1	He	4423821	1.05	4664305	94.84	80	120	
In_115	115	2	H2	11730434	1.69	12147161	96.57	80	120	
Tm_169	169	1	He	4586304	1.69	4835424	94.85	80	120	

Sample Report

Sample Table

Sample Name	sd 320-22811-C-7-A@5
Data File Name	101SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:11:38-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	1.794	1.794	3.34	552	3.23		2000	2000	
Be 9	9	2	H2	0.015	0.015	59.54	3	50.76		2000	2000	
B 11	11	2	H2	70.965	70.965	5.65	15025	8.88		10000	10000	
Na 23	23	1	He	6109.830	6109.830	6.08	4842873	4.31		100000	100000	
Mg 24	24	1	He	7065.953	7065.953	3.87	2952572	2.19		100000	100000	
Al 27	27	1	He	10.632	10.632	70.11	2449	62.88		100000	100000	
P 31	31	1	He	3.969	3.969	96.21	126	36.61		100000	100000	
K 39	39	1	He	4483.964	4483.964	3.36	2222687	1.50		100000	100000	
Ca 40	40	2	H2	37480.052	37480.052	7.88	147908189	13.11		100000	100000	
Ti 47	47	1	He	0.561	0.561	88.88	79	85.74		2000	2000	
V 51	51	1	He	-0.205	-0.205	-41.66	933	32.63		2000	2000	
Cr 52	52	1	He	0.304	0.304	30.63	5294	8.46		2000	2000	
Mn 55	55	1	He	312.606	312.606	3.22	877660	1.72		22000	22000	
Fe 56	56	1	He	7553.954	7553.954	2.50	26206563	0.81		100000	100000	
Co 59	59	1	He	0.636	0.636	6.53	3628	8.27		2000	2000	
Ni 60	60	1	He	1.062	1.062	6.50	1539	8.17		2000	2000	
Cu 63	63	1	He	0.323	0.323	10.61	1598	9.51		2000	2000	
Zn 66	66	1	He	0.566	0.566	9.43	569	9.56		2000	2000	
As 75	75	1	He	3.429	3.429	8.17	1921	2.88		2000	2000	
Se 78	78	2	H2	0.039	0.039	79.08	23	34.37		2000	2000	
Sr 88	88	1	He	109.034	109.034	5.07	427316	1.31		2000	2000	
Mo 95	95	1	He	0.183	0.183	17.28	392	19.76		2000	2000	
Ag 107	107	1	He	0.009	0.009	143.93	118	58.17		500	500	
Cd 111	111	1	He	0.018	0.018	123.34	21	96.22		2000	2000	
Sn 118	118	1	He	0.070	0.070	71.83	961	12.13		2000	2000	
Sb 121	121	1	He	-0.805	-0.805	-5.42	1027	11.23		2000	2000	
Ba 137	137	1	He	16.405	16.405	2.80	19741	2.91		2000	2000	
Ce 140	140	1	He	0.190	0.190	29.07	2794	28.02		2000	2000	
Gd 157	157	1	He	0.062	0.062	96.62	186	95.84		2000	2000	
Au 197	197	1	He	0.046	0.046	98.49	207	84.20		2000	2000	
Tl 205	205	1	He	0.007	0.007	267.73	148	115.16		500	500	
Pb206	206	1	He	0.048	0.048	143.13	258	79.52		12000	12000	
Pb207	207	1	He	0.067	0.067	110.61	262	73.05		12000	12000	
Pb 208	208	1	He	0.061	0.061	109.08	1076	71.76		12000	12000	
U 238	238	1	He	0.079	0.079	69.13	852	68.88		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7853765	1.77	7475944	105.05	80	120	
Sc_45	45	2	H2	43703655	5.36	44729383	97.71	80	120	
Ge_72	72	1	He	4085915	3.76	3950352	103.43	80	120	
Ge_72	72	2	H2	13306666	1.30	13199044	100.82	80	120	
In_115	115	1	He	4659400	0.90	4664305	99.89	80	120	
In_115	115	2	H2	12699507	1.01	12147161	104.55	80	120	
Tm_169	169	1	He	4757141	0.85	4835424	98.38	80	120	

Sample Table

Sample Name	pds 320-22811-C-7-A
Data File Name	102SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:15:06-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	455.480	455.480	1.64	114965	6.27		2000	2000	
Be 9	9	2	H2	437.281	437.281	1.53	78496	6.02		2000	2000	
B 11	11	2	H2	2459.531	2459.531	2.41	379417	8.80		10000	10000	
Na 23	23	1	He	31714.297	31714.297	4.92	23729805	2.31		100000	100000	
Mg 24	24	1	He	34910.961	34910.961	1.98	13835188	1.71		100000	100000	
Al 27	27	1	He	2187.801	2187.801	2.40	413930	1.79		100000	100000	
P 31	31	1	He	2113.539	2113.539	2.60	23335	0.63		100000	100000	
K 39	39	1	He	22911.969	22911.969	1.82	10480797	1.42		100000	100000	
Ca 40	40	2	H2	189926.455	189926.455	6.23	727872107	13.19		100000	100000	>LDR
Ti 47	47	1	He	421.432	421.432	2.68	52607	1.47		2000	2000	
V 51	51	1	He	422.705	422.705	0.95	1344947	2.58		2000	2000	
Cr 52	52	1	He	427.120	427.120	1.03	1626966	3.88		2000	2000	
Mn 55	55	1	He	1946.249	1946.249	2.42	5181919	2.29		22000	22000	
Fe 56	56	1	He	37584.223	37584.223	1.46	123648021	1.74		100000	100000	
Co 59	59	1	He	424.558	424.558	1.10	2280373	2.68		2000	2000	
Ni 60	60	1	He	404.162	404.162	3.38	544830	0.86		2000	2000	
Cu 63	63	1	He	412.536	412.536	1.40	1473535	2.59		2000	2000	
Zn 66	66	1	He	378.687	378.687	2.29	234899	1.53		2000	2000	
As 75	75	1	He	411.759	411.759	1.95	178232	1.51		2000	2000	
Se 78	78	2	H2	393.971	393.971	4.41	100691	5.40		2000	2000	
Sr 88	88	1	He	954.670	954.670	1.92	3587180	1.00		2000	2000	
Mo 95	95	1	He	423.107	423.107	3.13	813325	2.52		2000	2000	
Ag 107	107	1	He	100.715	100.715	3.07	534853	2.82		500	500	
Cd 111	111	1	He	389.234	389.234	1.99	342320	1.41		2000	2000	
Sn 118	118	1	He	419.440	419.440	2.34	967162	1.89		2000	2000	
Sb 121	121	1	He	440.606	440.606	1.62	1146771	1.33		2000	2000	
Ba 137	137	1	He	482.515	482.515	1.06	553763	1.56		2000	2000	
Ce 140	140	1	He	407.683	407.683	3.06	5656518	2.78		2000	2000	
Gd 157	157	1	He	413.603	413.603	1.65	1174384	1.58		2000	2000	
Au 197	197	1	He	407.456	407.456	1.80	1495348	1.51		2000	2000	
Tl 205	205	1	He	101.734	101.734	1.71	840733	1.30		500	500	
Pb206	206	1	He	404.820	404.820	1.00	1163281	1.57		12000	12000	
Pb207	207	1	He	416.837	416.837	2.05	1025793	0.22		12000	12000	
Pb 208	208	1	He	420.548	420.548	1.05	4641333	1.23		12000	12000	
U 238	238	1	He	434.795	434.795	0.34	4464936	1.89		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7448788	3.17	7475944	99.64	80	120	
Sc_45	45	2	H2	42439227	6.90	44729383	94.88	80	120	
Ge_72	72	1	He	3914517	0.93	3950352	99.09	80	120	
Ge_72	72	2	H2	12789103	1.92	13199044	96.89	80	120	
In_115	115	1	He	4447723	1.18	4664305	95.36	80	120	
In_115	115	2	H2	12017795	1.69	12147161	98.94	80	120	
Tm_169	169	1	He	4585581	2.04	4835424	94.83	80	120	

Sample Table

Sample Name	320-22811-B-7-A MS
Data File Name	103SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:18:18-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	228.201	228.201	0.61	59845	6.99		2000	2000	
Be 9	9	2	H2	216.584	216.584	1.26	40363	6.72		2000	2000	
B 11	11	2	H2	1377.981	1377.981	2.71	222349	9.06		10000	10000	
Na 23	23	1	He	32205.271	32205.271	2.06	25002429	2.15		100000	100000	
Mg 24	24	1	He	36550.109	36550.109	1.37	15020984	1.90		100000	100000	
Al 27	27	1	He	1031.282	1031.282	1.51	202499	1.33		100000	100000	
P 31	31	1	He	1104.516	1104.516	2.82	12684	2.12		100000	100000	
K 39	39	1	He	23114.174	23114.174	2.08	10964212	2.49		100000	100000	
Ca 40	40	2	H2	200231.045	200231.045	7.16	796441621	13.71		100000	100000	>LDR
Ti 47	47	1	He	210.139	210.139	1.80	27207	1.75		2000	2000	
V 51	51	1	He	207.303	207.303	2.42	684599	2.18		2000	2000	
Cr 52	52	1	He	206.934	206.934	1.33	819021	1.21		2000	2000	
Mn 55	55	1	He	1804.910	1804.910	3.45	4982428	2.72		22000	22000	
Fe 56	56	1	He	39381.106	39381.106	2.51	134331941	2.15		100000	100000	
Co 59	59	1	He	205.003	205.003	1.35	1141552	1.41		2000	2000	
Ni 60	60	1	He	203.103	203.103	1.63	284017	1.62		2000	2000	
Cu 63	63	1	He	199.410	199.410	2.33	738640	2.25		2000	2000	
Zn 66	66	1	He	194.362	194.362	0.93	122526	1.87		2000	2000	
As 75	75	1	He	220.258	220.258	1.36	96979	1.87		2000	2000	
Se 78	78	2	H2	199.584	199.584	3.96	51983	6.23		2000	2000	
Sr 88	88	1	He	802.159	802.159	2.78	3060447	2.66		2000	2000	
Mo 95	95	1	He	221.466	221.466	1.33	432309	1.76		2000	2000	
Ag 107	107	1	He	50.333	50.333	2.64	276512	2.44		500	500	
Cd 111	111	1	He	193.496	193.496	4.07	175990	3.08		2000	2000	
Sn 118	118	1	He	208.442	208.442	2.79	497472	1.53		2000	2000	
Sb 121	121	1	He	219.613	219.613	2.44	592732	1.04		2000	2000	
Ba 137	137	1	He	286.677	286.677	3.00	340232	1.80		2000	2000	
Ce 140	140	1	He	209.836	209.836	2.54	3011068	1.12		2000	2000	
Gd 157	157	1	He	208.438	208.438	3.22	611213	1.00		2000	2000	
Au 197	197	1	He	194.682	194.682	3.68	737921	2.29		2000	2000	
Tl 205	205	1	He	50.432	50.432	4.15	430429	2.27		500	500	
Pb206	206	1	He	200.270	200.270	3.22	594363	1.21		12000	12000	
Pb207	207	1	He	206.827	206.827	4.57	525644	2.24		12000	12000	
Pb 208	208	1	He	205.215	205.215	3.99	2338873	1.86		12000	12000	
U 238	238	1	He	218.023	218.023	2.89	2312159	1.57		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7721386	0.78	7475944	103.28	80	120	
Sc_45	45	2	H2	44035941	6.42	44729383	98.45	80	120	
Ge_72	72	1	He	3974454	1.17	3950352	100.61	80	120	
Ge_72	72	2	H2	13026606	2.50	13199044	98.69	80	120	
In_115	115	1	He	4600549	1.44	4664305	98.63	80	120	
In_115	115	2	H2	12163265	1.64	12147161	100.13	80	120	
Tm_169	169	1	He	4737348	2.36	4835424	97.97	80	120	

Sample Table

Sample Name	320-22811-B-7-B MSD
Data File Name	104SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:21:36-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	218.018	218.018	1.31	56524	5.84		2000	2000	
Be 9	9	2	H2	206.082	206.082	1.22	37976	6.05		2000	2000	
B 11	11	2	H2	1314.908	1314.908	1.72	209812	6.75		10000	10000	
Na 23	23	1	He	30250.153	30250.153	1.82	22790817	1.88		100000	100000	
Mg 24	24	1	He	34922.176	34922.176	2.81	13928257	3.48		100000	100000	
Al 27	27	1	He	1000.383	1000.383	1.73	190652	2.58		100000	100000	
P 31	31	1	He	1054.659	1054.659	3.00	11759	3.65		100000	100000	
K 39	39	1	He	22335.003	22335.003	0.94	10283276	1.57		100000	100000	
Ca 40	40	2	H2	187929.655	187929.655	3.13	737838059	9.07		100000	100000	>LDR
Ti 47	47	1	He	203.198	203.198	2.76	25534	3.66		2000	2000	
V 51	51	1	He	199.818	199.818	1.85	640500	2.64		2000	2000	
Cr 52	52	1	He	197.772	197.772	1.20	759826	1.98		2000	2000	
Mn 55	55	1	He	1752.404	1752.404	2.08	4695651	2.94		22000	22000	
Fe 56	56	1	He	37614.637	37614.637	1.46	124528157	2.31		100000	100000	
Co 59	59	1	He	197.046	197.046	0.78	1064830	1.65		2000	2000	
Ni 60	60	1	He	197.059	197.059	1.90	267443	2.75		2000	2000	
Cu 63	63	1	He	192.903	192.903	1.39	693474	2.24		2000	2000	
Zn 66	66	1	He	187.532	187.532	2.37	113227	2.38		2000	2000	
As 75	75	1	He	215.035	215.035	2.26	90689	2.41		2000	2000	
Se 78	78	2	H2	191.341	191.341	1.71	49350	4.01		2000	2000	
Sr 88	88	1	He	767.381	767.381	1.70	2804169	1.38		2000	2000	
Mo 95	95	1	He	214.874	214.874	3.57	401725	3.64		2000	2000	
Ag 107	107	1	He	47.434	47.434	2.20	257214	2.34		500	500	
Cd 111	111	1	He	181.959	181.959	1.55	163386	1.76		2000	2000	
Sn 118	118	1	He	197.671	197.671	3.12	465765	3.25		2000	2000	
Sb 121	121	1	He	208.851	208.851	2.33	556598	2.37		2000	2000	
Ba 137	137	1	He	273.059	273.059	2.66	319915	2.65		2000	2000	
Ce 140	140	1	He	200.367	200.367	2.39	2838279	2.41		2000	2000	
Gd 157	157	1	He	197.091	197.091	4.77	562824	2.48		2000	2000	
Au 197	197	1	He	189.393	189.393	3.76	699163	1.12		2000	2000	
Tl 205	205	1	He	48.820	48.820	4.60	405795	1.71		500	500	
Pb206	206	1	He	192.911	192.911	5.14	557514	2.86		12000	12000	
Pb207	207	1	He	199.450	199.450	5.67	493650	3.18		12000	12000	
Pb 208	208	1	He	197.707	197.707	6.10	2193961	3.50		12000	12000	
U 238	238	1	He	209.530	209.530	4.12	2163941	1.81		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7492851	0.89	7475944	100.23	80	120	
Sc_45	45	2	H2	43547909	6.00	44729383	97.36	80	120	
Ge_72	72	1	He	3806568	0.57	3950352	96.36	80	120	
Ge_72	72	2	H2	12903433	2.30	13199044	97.76	80	120	
In_115	115	1	He	4540452	0.67	4664305	97.34	80	120	
In_115	115	2	H2	12180444	0.52	12147161	100.27	80	120	
Tm_169	169	1	He	4615239	3.13	4835424	95.45	80	120	

Sample Table

Sample Name	320-22811-C-8-A
Data File Name	105SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:24:53-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	8.291	8.291	1.97	2203	6.12		2000	2000	
Be 9	9	2	H2	0.039	0.039	22.90	8	20.00		2000	2000	
B 11	11	2	H2	319.127	319.127	1.39	53136	7.30		10000	10000	
Na 23	23	1	He	30612.158	30612.158	5.29	23601801	2.68		100000	100000	
Mg 24	24	1	He	35104.626	35104.626	6.34	14324610	4.02		100000	100000	
Al 27	27	1	He	30.972	30.972	4.83	6336	1.78		100000	100000	
P 31	31	1	He	28.424	28.424	18.94	401	17.98		100000	100000	
K 39	39	1	He	22365.823	22365.823	4.03	10539579	1.22		100000	100000	
Ca 40	40	2	H2	199210.385	199210.385	5.93	772819413	12.23		100000	100000	>LDR
Ti 47	47	1	He	1.556	1.556	10.80	205	13.48		2000	2000	
V 51	51	1	He	0.015	0.015	185.79	1631	6.31		2000	2000	
Cr 52	52	1	He	2.313	2.313	9.23	13023	4.03		2000	2000	
Mn 55	55	1	He	1604.301	1604.301	5.06	4398670	2.32		22000	22000	
Fe 56	56	1	He	37781.761	37781.761	4.07	128018091	1.48		100000	100000	
Co 59	59	1	He	3.613	3.613	5.65	19998	2.90		2000	2000	
Ni 60	60	1	He	5.688	5.688	3.99	7928	1.72		2000	2000	
Cu 63	63	1	He	0.752	0.752	6.29	3137	2.79		2000	2000	
Zn 66	66	1	He	3.069	3.069	3.16	2085	3.60		2000	2000	
As 75	75	1	He	17.359	17.359	1.05	7820	1.05		2000	2000	
Se 78	78	2	H2	0.128	0.128	7.15	46	4.35		2000	2000	
Sr 88	88	1	He	599.080	599.080	1.52	2239824	2.27		2000	2000	
Mo 95	95	1	He	1.019	1.019	1.47	1972	2.11		2000	2000	
Ag 107	107	1	He	0.012	0.012	48.61	130	22.21		500	500	
Cd 111	111	1	He	0.043	0.043	19.20	42	17.17		2000	2000	
Sn 118	118	1	He	0.239	0.239	19.38	1296	6.18		2000	2000	
Sb 121	121	1	He	-0.782	-0.782	-2.71	1032	7.34		2000	2000	
Ba 137	137	1	He	83.751	83.751	3.55	95397	1.98		2000	2000	
Ce 140	140	1	He	0.867	0.867	2.33	11980	1.67		2000	2000	
Gd 157	157	1	He	0.178	0.178	11.45	506	9.72		2000	2000	
Au 197	197	1	He	0.150	0.150	17.72	576	13.72		2000	2000	
Tl 205	205	1	He	0.011	0.011	46.42	169	21.74		500	500	
Pb206	206	1	He	0.111	0.111	5.16	427	0.78		12000	12000	
Pb207	207	1	He	0.116	0.116	13.72	371	12.90		12000	12000	
Pb 208	208	1	He	0.125	0.125	9.51	1723	4.79		12000	12000	
U 238	238	1	He	0.287	0.287	12.26	2940	9.50		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7675207	2.90	7475944	102.67	80	120	
Sc_45	45	2	H2	42980844	6.43	44729383	96.09	80	120	
Ge_72	72	1	He	3894158	0.95	3950352	98.58	80	120	
Ge_72	72	2	H2	12961655	3.42	13199044	98.20	80	120	
In_115	115	1	He	4415566	2.03	4664305	94.67	80	120	
In_115	115	2	H2	12250288	1.45	12147161	100.85	80	120	
Tm_169	169	1	He	4566367	3.02	4835424	94.44	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	106_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:28:12-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	108.527	1.679	29296	8.29	100	108.5	90	110	
Be 9	9	2	H2	104.912	1.735	20094	8.10	100	104.9	90	110	
Na 23	23	1	He	5112.306	3.058	4015872	2.99	5100	100.2	90	110	
Mg 24	24	1	He	5071.468	7.621	2096722	6.87	5100	99.4	90	110	
Al 27	27	1	He	4921.178	4.593	971094	4.21	5100	96.5	90	110	
P 31	31	1	He	4923.231	5.109	56623	5.07	5000	98.5	90	110	
K 39	39	1	He	5114.344	4.682	2498274	4.16	5100	100.3	90	110	
Ca 40	40	2	H2	5050.357	7.519	20671591	14.12	5100	99.0	90	110	
Ti 47	47	1	He	202.825	5.437	26418	4.76	200	101.4	90	110	
V 51	51	1	He	101.125	5.019	336826	4.49	100	101.1	90	110	
Cr 52	52	1	He	101.364	4.696	405700	4.16	100	101.4	90	110	
Mn 55	55	1	He	100.653	3.836	279727	3.83	100	100.7	90	110	
Fe 56	56	1	He	5112.392	6.233	17547809	5.55	5100	100.2	90	110	
Co 59	59	1	He	101.133	4.439	566644	4.15	100	101.1	90	110	
Ni 60	60	1	He	102.820	4.503	144689	4.33	100	102.8	90	110	
Cu 63	63	1	He	101.106	4.394	377006	4.05	100	101.1	90	110	
Zn 66	66	1	He	101.265	3.562	65722	3.94	100	101.3	90	110	
As 75	75	1	He	98.728	1.588	44897	2.38	100	98.7	90	110	
Se 78	78	2	H2	101.058	3.391	27807	5.12	100	101.1	90	110	
Sr 88	88	1	He	99.156	3.376	389131	3.90	100	99.2	90	110	
Mo 95	95	1	He	200.400	3.211	402163	3.63	200	100.2	90	110	
Ag 107	107	1	He	49.968	5.438	279795	3.99	50	99.9	90	110	
Cd 111	111	1	He	98.795	4.536	91633	3.92	100	98.8	90	110	
Sn 118	118	1	He	98.872	4.331	241050	3.92	100	98.9	90	110	
Sb 121	121	1	He	50.589	4.490	141724	3.99	50	101.2	90	110	
Ba 137	137	1	He	98.905	4.031	119718	3.71	100	98.9	90	110	
Ce 140	140	1	He	99.129	3.940	1450932	4.44	100	99.1	90	110	
Gd 157	157	1	He	98.569	3.524	296162	3.77	100	98.6	90	110	
Au 197	197	1	He	98.845	4.749	383926	5.17	100	98.8	90	110	
Tl 205	205	1	He	48.509	2.825	424262	3.12	50	97.0	90	110	
Pb206	206	1	He	99.569	2.990	302844	3.36	100	99.6	1	10000	
Pb207	207	1	He	99.291	4.338	258676	4.69	100	99.3	1	10000	
Pb 208	208	1	He	99.677	3.400	1164371	3.77	100	99.7	90	110	
U 238	238	1	He	99.905	3.352	1085542	3.79	100	99.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7770183	1.65	7475944	103.94	80	120	
Sc_45	45	2	H2	45234357	6.64	44729383	101.13	80	120	
Ge_72	72	1	He	4085741	1.17	3950352	103.43	80	120	
Ge_72	72	2	H2	13762633	2.51	13199044	104.27	80	120	
In_115	115	1	He	4691750	2.42	4664305	100.59	80	120	
In_115	115	2	H2	12786260	3.11	12147161	105.26	80	120	
Tm_169	169	1	He	4851432	0.56	4835424	100.33	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	107_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:31:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.215	29.2	148	14.5	10	
Be 9	9	2	H2	0.012	48.8	3	39.0	1	
Na 23	23	1	He	3.216	35.8	29980	2.4	50	
Mg 24	24	1	He	0.393	18.6	555	5.0	50	
Al 27	27	1	He	0.346	96.5	391	16.8	50	
P 31	31	1	He	-1.761	-7.0	61	1.9	50	
K 39	39	1	He	8.767	31.1	80901	0.9	50	
Ca 40	40	2	H2	1.211	34.4	41599	8.9	50	
Ti 47	47	1	He	0.012	235.8	6	66.7	5	
V 51	51	1	He	-0.301	-7.8	623	12.3	10	
Cr 52	52	1	He	-0.003	-694.9	4168	2.3	2	
Mn 55	55	1	He	0.005	167.8	120	18.8	1	
Fe 56	56	1	He	0.637	23.8	6561	7.5	50	
Co 59	59	1	He	0.005	55.1	51	31.9	1	
Ni 60	60	1	He	0.008	95.6	41	28.4	2	
Cu 63	63	1	He	0.271	3.7	1435	1.9	2	
Zn 66	66	1	He	0.062	110.0	250	18.5	5	
As 75	75	1	He	-0.097	-61.5	344	8.3	2	
Se 78	78	2	H2	0.015	23.2	18	3.3	2	
Sr 88	88	1	He	0.004	80.3	220	7.1	5	
Mo 95	95	1	He	0.063	37.6	154	31.8	2	
Ag 107	107	1	He	0.000	764.9	73	16.4	1	
Cd 111	111	1	He	0.013	82.2	17	59.2	1	
Sn 118	118	1	He	0.073	10.4	996	3.4	10	
Sb 121	121	1	He	-0.731	-2.9	1259	2.8	2	
Ba 137	137	1	He	0.012	104.9	34	45.7	1	
Ce 140	140	1	He	0.004	32.2	99	22.4	5	
Gd 157	157	1	He	0.005	39.8	17	34.6	1	
Au 197	197	1	He	0.078	13.9	332	9.9	5	
Tl 205	205	1	He	0.007	24.4	147	11.4	1	
Pb206	206	1	He	-0.001	-530.3	116	10.1	1	
Pb207	207	1	He	0.014	50.2	128	17.0	1	
Pb 208	208	1	He	0.011	49.6	506	13.9	1	
U 238	238	1	He	0.015	44.9	170	44.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	8055057	0.86	7475944	107.75	80	120	
Sc_45	45	2	H2	45327491	4.73	44729383	101.34	80	120	
Ge_72	72	1	He	4212215	1.04	3950352	106.63	80	120	
Ge_72	72	2	H2	13736981	2.34	13199044	104.08	80	120	
In_115	115	1	He	4787751	2.24	4664305	102.65	80	120	
In_115	115	2	H2	13182915	1.95	12147161	108.53	80	120	
Tm_169	169	1	He	4843780	2.83	4835424	100.17	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	108_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:35:13-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	112.606	0.857	28961	7.64	100	112.6	90	110	> +/- 10%
Be 9	9	2	H2	108.205	1.945	19757	8.45	100	108.2	90	110	
Na 23	23	1	He	5102.654	0.446	4070856	1.97	5100	100.1	90	110	
Mg 24	24	1	He	5101.096	1.988	2142248	1.65	5100	100.0	90	110	
Al 27	27	1	He	4943.527	4.112	990768	4.38	5100	96.9	90	110	
P 31	31	1	He	4976.833	2.588	58130	3.16	5000	99.5	90	110	
K 39	39	1	He	5162.420	1.430	2560783	2.71	5100	101.2	90	110	
Ca 40	40	2	H2	5103.601	3.501	19903757	11.95	5100	100.1	90	110	
Ti 47	47	1	He	200.881	4.173	26576	4.17	200	100.4	90	110	
V 51	51	1	He	100.857	2.660	341200	2.93	100	100.9	90	110	
Cr 52	52	1	He	101.143	3.547	411165	3.77	100	101.1	90	110	
Mn 55	55	1	He	100.807	2.671	284502	2.94	100	100.8	90	110	
Fe 56	56	1	He	5224.464	1.649	18216441	2.46	5100	102.4	90	110	
Co 59	59	1	He	100.949	3.685	574381	3.52	100	100.9	90	110	
Ni 60	60	1	He	101.701	3.257	145359	3.97	100	101.7	90	110	
Cu 63	63	1	He	101.945	3.514	386032	3.31	100	101.9	90	110	
Zn 66	66	1	He	102.028	1.949	66652	3.07	100	102.0	90	110	
As 75	75	1	He	101.181	2.894	46306	3.74	100	101.2	90	110	
Se 78	78	2	H2	103.425	6.089	27363	8.43	100	103.4	90	110	
Sr 88	88	1	He	100.481	1.895	396901	2.89	100	100.5	90	110	
Mo 95	95	1	He	201.540	2.830	407091	3.45	200	100.8	90	110	
Ag 107	107	1	He	51.106	2.259	284813	2.65	50	102.2	90	110	
Cd 111	111	1	He	101.262	2.961	93456	3.46	100	101.3	90	110	
Sn 118	118	1	He	100.780	2.679	244429	2.68	100	100.8	90	110	
Sb 121	121	1	He	51.679	3.167	143983	3.57	50	103.4	90	110	
Ba 137	137	1	He	101.186	3.551	121858	3.89	100	101.2	90	110	
Ce 140	140	1	He	102.035	5.106	1485524	5.25	100	102.0	90	110	
Gd 157	157	1	He	98.906	2.855	300007	4.05	100	98.9	90	110	
Au 197	197	1	He	100.363	1.723	393470	2.93	100	100.4	90	110	
Tl 205	205	1	He	49.377	2.847	435964	4.04	50	98.8	90	110	
Pb206	206	1	He	100.247	3.278	307807	4.40	100	100.2	1	10000	
Pb207	207	1	He	99.219	2.896	260941	4.08	100	99.2	1	10000	
Pb 208	208	1	He	100.548	1.743	1185603	2.94	100	100.5	90	110	
U 238	238	1	He	100.344	1.447	1100520	2.61	100	100.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7890406	1.68	7475944	105.54	80	120	
Sc_45	45	2	H2	43153765	8.53	44729383	96.48	80	120	
Ge_72	72	1	He	4112777	2.24	3950352	104.11	80	120	
Ge_72	72	2	H2	13229232	3.92	13199044	100.23	80	120	
In_115	115	1	He	4666405	1.09	4664305	100.05	80	120	
In_115	115	2	H2	12660185	2.96	12147161	104.22	80	120	
Tm_169	169	1	He	4896768	1.21	4835424	101.27	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	109_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:38:39-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.145	41.8	126	9.6	10	
Be 9	9	2	H2	0.006	84.8	2	66.7	1	
Na 23	23	1	He	2.696	102.8	28429	2.8	50	
Mg 24	24	1	He	0.403	59.2	537	13.5	50	
Al 27	27	1	He	0.701	21.2	447	3.0	50	
P 31	31	1	He	-0.406	-61.3	74	4.7	50	
K 39	39	1	He	5.852	129.5	76495	0.4	50	
Ca 40	40	2	H2	0.564	62.6	38275	6.9	50	
Ti 47	47	1	He	0.020	58.8	7	17.3	5	
V 51	51	1	He	-0.272	-10.9	695	10.8	10	
Cr 52	52	1	He	0.005	1091.1	4043	3.2	2	
Mn 55	55	1	He	-0.002	-241.7	97	8.3	1	
Fe 56	56	1	He	0.570	30.0	6080	6.2	50	
Co 59	59	1	He	0.005	51.4	47	29.7	1	
Ni 60	60	1	He	0.009	142.0	41	44.1	2	
Cu 63	63	1	He	0.237	15.2	1255	6.0	2	
Zn 66	66	1	He	0.016	344.1	209	14.4	5	
As 75	75	1	He	-0.029	-263.3	360	7.8	2	
Se 78	78	2	H2	0.031	121.6	22	47.1	2	
Sr 88	88	1	He	0.012	45.0	242	7.2	5	
Mo 95	95	1	He	0.065	6.6	153	3.8	2	
Ag 107	107	1	He	0.000	1562.2	71	28.6	1	
Cd 111	111	1	He	0.007	101.5	11	57.3	1	
Sn 118	118	1	He	0.056	87.7	926	12.0	10	
Sb 121	121	1	He	-0.712	-5.2	1279	9.4	2	
Ba 137	137	1	He	0.010	162.9	31	62.8	1	
Ce 140	140	1	He	0.005	47.4	107	30.8	5	
Gd 157	157	1	He	0.005	58.6	17	52.9	1	
Au 197	197	1	He	0.081	20.8	338	17.4	5	
Tl 205	205	1	He	0.005	69.6	131	25.7	1	
Pb206	206	1	He	0.003	329.6	124	25.3	1	
Pb207	207	1	He	0.004	241.9	100	26.5	1	
Pb 208	208	1	He	0.013	23.1	528	11.1	1	
U 238	238	1	He	0.017	9.5	193	6.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7764408	4.71	7475944	103.86	80	120	
Sc_45	45	2	H2	44561843	3.49	44729383	99.63	80	120	
Ge_72	72	1	He	4039659	3.93	3950352	102.26	80	120	
Ge_72	72	2	H2	13545427	1.10	13199044	102.62	80	120	
In_115	115	1	He	4654255	1.73	4664305	99.78	80	120	
In_115	115	2	H2	12902271	0.96	12147161	106.22	80	120	
Tm_169	169	1	He	4773894	4.78	4835424	98.73	80	120	

Sample Report

Sample Table

Sample Name	320-22811-C-9-A
Data File Name	110SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:42:14-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	1.887	1.887	2.64	570	6.82		2000	2000	
Be 9	9	2	H2	0.008	0.008	74.73	2	56.77		2000	2000	
B 11	11	2	H2	60.603	60.603	3.72	13216	5.93		10000	10000	
Na 23	23	1	He	23079.067	23079.067	3.50	17403168	4.04		100000	100000	
Mg 24	24	1	He	9756.446	9756.446	2.32	3893522	3.64		100000	100000	
Al 27	27	1	He	9.608	9.608	3.07	2129	5.40		100000	100000	
P 31	31	1	He	12.175	12.175	10.83	211	4.38		100000	100000	
K 39	39	1	He	5193.008	5193.008	5.37	2445897	4.59		100000	100000	
Ca 40	40	2	H2	53860.119	53860.119	4.30	209687349	9.61		100000	100000	
Ti 47	47	1	He	0.313	0.313	29.44	43	26.24		2000	2000	
V 51	51	1	He	-0.196	-0.196	-7.99	919	6.44		2000	2000	
Cr 52	52	1	He	1.308	1.308	3.57	8891	3.75		2000	2000	
Mn 55	55	1	He	87.466	87.466	2.97	234594	4.20		22000	22000	
Fe 56	56	1	He	898.348	898.348	2.75	2979407	3.60		100000	100000	
Co 59	59	1	He	1.606	1.606	3.13	8703	4.48		2000	2000	
Ni 60	60	1	He	1.730	1.730	0.63	2375	3.33		2000	2000	
Cu 63	63	1	He	0.240	0.240	7.10	1227	4.75		2000	2000	
Zn 66	66	1	He	2.929	2.929	4.26	2011	1.09		2000	2000	
As 75	75	1	He	5.298	5.298	6.11	2653	3.19		2000	2000	
Se 78	78	2	H2	0.038	0.038	35.72	23	12.74		2000	2000	
Sr 88	88	1	He	135.061	135.061	6.06	508272	4.91		2000	2000	
Mo 95	95	1	He	0.525	0.525	3.64	1036	6.25		2000	2000	
Ag 107	107	1	He	0.005	0.005	94.93	92	23.24		500	500	
Cd 111	111	1	He	0.019	0.019	88.51	21	67.82		2000	2000	
Sn 118	118	1	He	0.086	0.086	14.87	969	0.99		2000	2000	
Sb 121	121	1	He	-0.777	-0.777	-5.78	1067	8.97		2000	2000	
Ba 137	137	1	He	13.783	13.783	5.07	16084	3.74		2000	2000	
Ce 140	140	1	He	0.043	0.043	35.93	639	31.79		2000	2000	
Gd 157	157	1	He	0.011	0.011	122.16	36	117.20		2000	2000	
Au 197	197	1	He	0.034	0.034	57.43	156	50.27		2000	2000	
Tl 205	205	1	He	0.001	0.001	691.15	88	44.98		500	500	
Pb206	206	1	He	0.126	0.126	9.81	478	11.89		12000	12000	
Pb207	207	1	He	0.118	0.118	22.89	382	21.83		12000	12000	
Pb 208	208	1	He	0.118	0.118	9.66	1670	11.96		12000	12000	
U 238	238	1	He	0.148	0.148	2.12	1533	4.54		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7497655	2.87	7475944	100.29	80	120	
Sc_45	45	2	H2	43172035	5.75	44729383	96.52	80	120	
Ge_72	72	1	He	3922062	3.68	3950352	99.28	80	120	
Ge_72	72	2	H2	13018544	2.90	13199044	98.63	80	120	
In_115	115	1	He	4520132	2.12	4664305	96.91	80	120	
In_115	115	2	H2	12192305	1.47	12147161	100.37	80	120	
Tm_169	169	1	He	4616294	4.37	4835424	95.47	80	120	

Sample Report

Sample Table

Sample Name	sd 320-22811-C-9-A@5
Data File Name	111SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:45:42-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.450	0.450	14.94	197	6.34		2000	2000	
Be 9	9	2	H2	0.005	0.005	28.25	1	21.65		2000	2000	
B 11	11	2	H2	28.488	28.488	7.19	8095	5.21		10000	10000	
Na 23	23	1	He	4645.839	4645.839	4.18	3610008	3.28		100000	100000	
Mg 24	24	1	He	1938.007	1938.007	4.00	792512	2.80		100000	100000	
Al 27	27	1	He	1.293	1.293	9.09	558	3.06		100000	100000	
P 31	31	1	He	0.345	0.345	631.53	82	31.71		100000	100000	
K 39	39	1	He	994.544	994.544	3.63	539134	1.83		100000	100000	
Ca 40	40	2	H2	10868.897	10868.897	4.63	41693756	10.87		100000	100000	
Ti 47	47	1	He	0.077	0.077	73.17	14	51.51		2000	2000	
V 51	51	1	He	-0.234	-0.234	-12.02	816	12.63		2000	2000	
Cr 52	52	1	He	0.209	0.209	14.06	4802	2.12		2000	2000	
Mn 55	55	1	He	17.658	17.658	4.07	48593	2.82		22000	22000	
Fe 56	56	1	He	174.664	174.664	3.67	596740	2.45		100000	100000	
Co 59	59	1	He	0.302	0.302	5.96	1691	4.88		2000	2000	
Ni 60	60	1	He	0.338	0.338	6.50	498	4.87		2000	2000	
Cu 63	63	1	He	0.161	0.161	9.11	966	4.35		2000	2000	
Zn 66	66	1	He	0.462	0.462	14.18	497	9.80		2000	2000	
As 75	75	1	He	0.979	0.979	6.01	811	3.00		2000	2000	
Se 78	78	2	H2	0.035	0.035	66.50	22	25.31		2000	2000	
Sr 88	88	1	He	26.647	26.647	3.25	103730	2.63		2000	2000	
Mo 95	95	1	He	0.119	0.119	3.24	261	4.10		2000	2000	
Ag 107	107	1	He	-0.001	-0.001	-173.56	66	7.77		500	500	
Cd 111	111	1	He	0.000	0.000	1098.73	5	24.74		2000	2000	
Sn 118	118	1	He	0.051	0.051	33.61	894	2.18		2000	2000	
Sb 121	121	1	He	-0.865	-0.865	-3.74	843	9.62		2000	2000	
Ba 137	137	1	He	2.741	2.741	5.43	3241	3.12		2000	2000	
Ce 140	140	1	He	0.005	0.005	35.23	103	25.60		2000	2000	
Gd 157	157	1	He	0.001	0.001	166.84	4	86.60		2000	2000	
Au 197	197	1	He	0.021	0.021	10.27	108	7.78		2000	2000	
Tl 205	205	1	He	-0.003	-0.003	-28.20	53	16.53		500	500	
Pb206	206	1	He	0.033	0.033	22.39	207	8.98		12000	12000	
Pb207	207	1	He	0.012	0.012	61.11	118	14.53		12000	12000	
Pb 208	208	1	He	0.025	0.025	27.60	638	10.77		12000	12000	
U 238	238	1	He	0.028	0.028	20.67	298	19.91		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7682577	1.34	7475944	102.76	80	120	
Sc_45	45	2	H2	42503929	7.13	44729383	95.02	80	120	
Ge_72	72	1	He	4048362	1.74	3950352	102.48	80	120	
Ge_72	72	2	H2	13095844	2.82	13199044	99.22	80	120	
In_115	115	1	He	4560953	2.34	4664305	97.78	80	120	
In_115	115	2	H2	12337618	1.10	12147161	101.57	80	120	
Tm_169	169	1	He	4626987	1.35	4835424	95.69	80	120	

Sample Report

Sample Table

Sample Name	pds 320-22811-C-9-A
Data File Name	112SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:49:15-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	461.618	461.618	3.46	119340	6.14		2000	2000	
Be 9	9	2	H2	447.670	447.670	3.31	82339	6.65		2000	2000	
B 11	11	2	H2	2256.793	2256.793	2.58	356647	6.72		10000	10000	
Na 23	23	1	He	24754.248	24754.248	0.40	18936647	2.90		100000	100000	
Mg 24	24	1	He	11640.667	11640.667	1.06	4711983	2.45		100000	100000	
Al 27	27	1	He	2154.345	2154.345	0.17	416425	3.38		100000	100000	
P 31	31	1	He	2062.447	2062.447	0.80	23269	3.59		100000	100000	
K 39	39	1	He	7035.879	7035.879	2.26	3337075	2.67		100000	100000	
Ca 40	40	2	H2	57604.732	57604.732	4.84	226116560	11.84		100000	100000	
Ti 47	47	1	He	410.408	410.408	1.20	52350	4.09		2000	2000	
V 51	51	1	He	417.296	417.296	2.17	1356395	4.78		2000	2000	
Cr 52	52	1	He	425.064	425.064	4.04	1652473	3.68		2000	2000	
Mn 55	55	1	He	483.914	483.914	1.02	1316201	3.21		22000	22000	
Fe 56	56	1	He	2918.167	2918.167	2.61	9810395	4.16		100000	100000	
Co 59	59	1	He	416.077	416.077	0.96	2282209	2.85		2000	2000	
Ni 60	60	1	He	402.259	402.259	0.54	554076	2.81		2000	2000	
Cu 63	63	1	He	424.425	424.425	0.63	1548564	3.83		2000	2000	
Zn 66	66	1	He	402.230	402.230	3.09	252147	3.78		2000	2000	
As 75	75	1	He	407.304	407.304	3.02	178174	3.69		2000	2000	
Se 78	78	2	H2	416.751	416.751	3.67	109469	5.69		2000	2000	
Sr 88	88	1	He	552.310	552.310	6.54	2097794	7.25		2000	2000	
Mo 95	95	1	He	423.331	423.331	3.49	822446	4.19		2000	2000	
Ag 107	107	1	He	100.870	100.870	2.47	552712	3.44		500	500	
Cd 111	111	1	He	394.444	394.444	3.29	357918	3.83		2000	2000	
Sn 118	118	1	He	412.440	412.440	2.05	981165	2.43		2000	2000	
Sb 121	121	1	He	438.584	438.584	3.34	1177735	3.89		2000	2000	
Ba 137	137	1	He	419.816	419.816	2.11	497026	2.56		2000	2000	
Ce 140	140	1	He	408.412	408.412	1.78	5845340	0.89		2000	2000	
Gd 157	157	1	He	404.627	404.627	1.80	1197225	3.14		2000	2000	
Au 197	197	1	He	426.787	426.787	4.59	1632632	5.93		2000	2000	
Tl 205	205	1	He	101.402	101.402	2.58	873325	3.90		500	500	
Pb206	206	1	He	401.736	401.736	1.46	1202878	2.80		12000	12000	
Pb207	207	1	He	414.022	414.022	2.17	1061872	3.42		12000	12000	
Pb 208	208	1	He	415.577	415.577	1.02	4778917	2.29		12000	12000	
U 238	238	1	He	425.807	425.807	3.23	4555700	3.89		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7606538	3.26	7475944	101.75	80	120	
Sc_45	45	2	H2	43508819	8.10	44729383	97.27	80	120	
Ge_72	72	1	He	3955118	0.69	3950352	100.12	80	120	
Ge_72	72	2	H2	13140116	2.03	13199044	99.55	80	120	
In_115	115	1	He	4588167	1.38	4664305	98.37	80	120	
In_115	115	2	H2	12173638	0.85	12147161	100.22	80	120	
Tm_169	169	1	He	4777017	1.36	4835424	98.79	80	120	

Sample Report

Sample Table

Sample Name	320-22811-C-9-B MS
Data File Name	113SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:52:32-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	215.344	215.344	1.81	54880	5.02		2000	2000	
Be 9	9	2	H2	210.491	210.491	2.23	38123	5.15		2000	2000	
B 11	11	2	H2	1099.364	1099.364	1.61	173055	5.99		10000	10000	
Na 23	23	1	He	23663.974	23663.974	3.27	17578850	1.16		100000	100000	
Mg 24	24	1	He	10781.539	10781.539	3.32	4238179	1.24		100000	100000	
Al 27	27	1	He	958.623	958.623	3.13	180072	0.97		100000	100000	
P 31	31	1	He	988.531	988.531	4.01	10866	1.76		100000	100000	
K 39	39	1	He	5983.604	5983.604	1.07	2767788	1.67		100000	100000	
Ca 40	40	2	H2	55929.314	55929.314	3.84	216043797	10.10		100000	100000	
Ti 47	47	1	He	191.686	191.686	4.90	23733	2.69		2000	2000	
V 51	51	1	He	193.879	193.879	3.00	612565	0.83		2000	2000	
Cr 52	52	1	He	194.431	194.431	3.84	736237	1.61		2000	2000	
Mn 55	55	1	He	273.735	273.735	2.90	723005	0.76		22000	22000	
Fe 56	56	1	He	1852.783	1852.783	2.91	6049486	0.73		100000	100000	
Co 59	59	1	He	192.373	192.373	3.21	1024643	1.18		2000	2000	
Ni 60	60	1	He	193.738	193.738	3.77	259124	1.81		2000	2000	
Cu 63	63	1	He	192.729	192.729	3.10	682880	0.97		2000	2000	
Zn 66	66	1	He	192.376	192.376	4.47	117428	1.91		2000	2000	
As 75	75	1	He	195.393	195.393	2.92	83368	1.01		2000	2000	
Se 78	78	2	H2	199.270	199.270	4.05	50974	3.91		2000	2000	
Sr 88	88	1	He	324.560	324.560	3.52	1199498	1.65		2000	2000	
Mo 95	95	1	He	205.589	205.589	3.17	388697	1.15		2000	2000	
Ag 107	107	1	He	49.317	49.317	2.81	259355	0.12		500	500	
Cd 111	111	1	He	189.492	189.492	3.98	164983	1.30		2000	2000	
Sn 118	118	1	He	200.049	200.049	4.31	457020	1.66		2000	2000	
Sb 121	121	1	He	210.589	210.589	5.08	544063	2.38		2000	2000	
Ba 137	137	1	He	212.898	212.898	3.74	241877	1.11		2000	2000	
Ce 140	140	1	He	197.825	197.825	4.51	2717022	2.01		2000	2000	
Gd 157	157	1	He	194.434	194.434	4.40	554687	1.38		2000	2000	
Au 197	197	1	He	195.651	195.651	5.46	721289	2.32		2000	2000	
Tl 205	205	1	He	48.955	48.955	4.86	406489	1.71		500	500	
Pb206	206	1	He	193.563	193.563	4.08	558908	0.93		12000	12000	
Pb207	207	1	He	200.213	200.213	3.69	495213	0.55		12000	12000	
Pb 208	208	1	He	198.503	198.503	4.16	2201354	1.01		12000	12000	
U 238	238	1	He	209.010	209.010	5.87	2155532	2.73		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7388997	2.26	7475944	98.84	80	120	
Sc_45	45	2	H2	42824192	6.25	44729383	95.74	80	120	
Ge_72	72	1	He	3851859	3.17	3950352	97.51	80	120	
Ge_72	72	2	H2	12801852	0.63	13199044	96.99	80	120	
In_115	115	1	He	4405794	2.74	4664305	94.46	80	120	
In_115	115	2	H2	12396764	0.79	12147161	102.05	80	120	
Tm_169	169	1	He	4610834	3.18	4835424	95.36	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	114_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:55:58-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	111.462	1.668	27331	7.62	100	111.5	90	110	> +/- 10%
Be 9	9	2	H2	107.028	1.108	18616	6.56	100	107.0	90	110	
Na 23	23	1	He	5097.505	3.830	3753334	3.35	5100	100.0	90	110	
Mg 24	24	1	He	5151.183	3.295	1997107	3.33	5100	101.0	90	110	
Al 27	27	1	He	4944.950	1.976	914774	1.62	5100	97.0	90	110	
P 31	31	1	He	4969.950	3.474	53578	3.10	5000	99.4	90	110	
K 39	39	1	He	5050.355	3.666	2313703	3.49	5100	99.0	90	110	
Ca 40	40	2	H2	5055.690	6.139	18813432	13.90	5100	99.1	90	110	
Ti 47	47	1	He	198.915	1.972	24292	1.58	200	99.5	90	110	
V 51	51	1	He	100.626	2.214	314224	1.74	100	100.6	90	110	
Cr 52	52	1	He	101.230	2.453	379841	2.00	100	101.2	90	110	
Mn 55	55	1	He	100.414	3.208	261576	2.81	100	100.4	90	110	
Fe 56	56	1	He	5149.441	4.718	16571792	4.45	5100	101.0	90	110	
Co 59	59	1	He	101.967	2.880	535563	2.49	100	102.0	90	110	
Ni 60	60	1	He	103.260	2.322	136210	1.86	100	103.3	90	110	
Cu 63	63	1	He	102.867	2.277	359576	1.89	100	102.9	90	110	
Zn 66	66	1	He	102.245	0.917	62363	2.52	100	102.2	90	110	
As 75	75	1	He	99.216	0.785	42399	2.03	100	99.2	90	110	
Se 78	78	2	H2	103.170	3.592	25819	7.53	100	103.2	90	110	
Sr 88	88	1	He	99.354	1.329	366447	2.91	100	99.4	90	110	
Mo 95	95	1	He	202.105	0.986	381178	2.54	200	101.1	90	110	
Ag 107	107	1	He	50.228	2.067	265681	1.98	50	100.5	90	110	
Cd 111	111	1	He	99.464	2.288	87124	2.21	100	99.5	90	110	
Sn 118	118	1	He	99.815	1.777	229795	1.67	100	99.8	90	110	
Sb 121	121	1	He	50.682	1.015	134074	0.89	50	101.4	90	110	
Ba 137	137	1	He	100.477	1.302	114847	1.16	100	100.5	90	110	
Ce 140	140	1	He	101.158	2.508	1397858	2.42	100	101.2	90	110	
Gd 157	157	1	He	99.172	3.556	287271	2.22	100	99.2	90	110	
Au 197	197	1	He	101.189	4.019	378847	2.36	100	101.2	90	110	
Tl 205	205	1	He	49.854	3.692	420321	1.79	50	99.7	90	110	
Pb206	206	1	He	101.791	4.196	298416	2.05	100	101.8	1	10000	
Pb207	207	1	He	101.420	4.235	254668	2.04	100	101.4	1	10000	
Pb 208	208	1	He	102.116	4.308	1149729	2.12	100	102.1	90	110	
U 238	238	1	He	102.844	3.952	1077106	1.72	100	102.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7283323	0.47	7475944	97.42	80	120	
Sc_45	45	2	H2	41124405	7.60	44729383	91.94	80	120	
Ge_72	72	1	He	3839702	1.62	3950352	97.20	80	120	
Ge_72	72	2	H2	12509118	4.00	13199044	94.77	80	120	
In_115	115	1	He	4429215	0.14	4664305	94.96	80	120	
In_115	115	2	H2	12331679	0.81	12147161	101.52	80	120	
Tm_169	169	1	He	4679623	2.53	4835424	96.78	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	115_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T15:59:26-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.171	16.2	124	5.2	10	
Be 9	9	2	H2	0.024	68.9	5	61.9	1	
Na 23	23	1	He	4.693	46.0	28172	4.5	50	
Mg 24	24	1	He	0.953	86.5	717	43.6	50	
Al 27	27	1	He	0.789	21.2	436	7.5	50	
P 31	31	1	He	-0.216	-567.0	71	16.9	50	
K 39	39	1	He	6.498	101.2	72093	1.9	50	
Ca 40	40	2	H2	0.858	57.7	36716	9.3	50	
Ti 47	47	1	He	0.023	180.7	7	75.5	5	
V 51	51	1	He	-0.191	-7.1	907	5.3	10	
Cr 52	52	1	He	-0.017	-224.2	3714	2.1	2	
Mn 55	55	1	He	0.023	145.7	155	54.6	1	
Fe 56	56	1	He	0.700	50.9	6128	17.6	50	
Co 59	59	1	He	0.020	112.4	121	94.3	1	
Ni 60	60	1	He	0.015	194.6	45	81.4	2	
Cu 63	63	1	He	0.257	11.6	1251	7.3	2	
Zn 66	66	1	He	0.046	48.7	221	6.8	5	
As 75	75	1	He	-0.138	-24.4	301	5.4	2	
Se 78	78	2	H2	0.038	28.5	22	11.3	2	
Sr 88	88	1	He	0.023	103.3	276	33.4	5	
Mo 95	95	1	He	0.078	31.4	172	27.8	2	
Ag 107	107	1	He	0.008	75.7	108	28.7	1	
Cd 111	111	1	He	0.023	117.2	25	96.1	1	
Sn 118	118	1	He	0.154	52.5	1116	16.3	10	
Sb 121	121	1	He	-0.745	-7.5	1140	12.2	2	
Ba 137	137	1	He	0.018	122.8	39	65.5	1	
Ce 140	140	1	He	0.012	108.6	207	90.8	5	
Gd 157	157	1	He	0.013	122.1	38	113.4	1	
Au 197	197	1	He	0.107	30.4	423	25.5	5	
Tl 205	205	1	He	0.015	61.6	203	34.1	1	
Pb206	206	1	He	0.018	116.2	163	34.9	1	
Pb207	207	1	He	0.024	55.7	146	19.7	1	
Pb 208	208	1	He	0.028	42.2	676	17.0	1	
U 238	238	1	He	0.038	63.5	401	59.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7282213	2.30	7475944	97.41	80	120	
Sc_45	45	2	H2	41438704	4.18	44729383	92.64	80	120	
Ge_72	72	1	He	3899330	0.65	3950352	98.71	80	120	
Ge_72	72	2	H2	12884889	1.06	13199044	97.62	80	120	
In_115	115	1	He	4468596	1.15	4664305	95.80	80	120	
In_115	115	2	H2	12109705	1.35	12147161	99.69	80	120	
Tm_169	169	1	He	4632323	2.50	4835424	95.80	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	116_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:03:01-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	111.516	0.905	28019	7.79	100	111.5	90	110	> +/- 10%
Be 9	9	2	H2	106.618	1.150	19003	6.99	100	106.6	90	110	
Na 23	23	1	He	5262.344	1.955	3953955	2.08	5100	103.2	90	110	
Mg 24	24	1	He	5120.091	2.552	2025423	0.98	5100	100.4	90	110	
Al 27	27	1	He	4955.034	3.458	935190	1.38	5100	97.2	90	110	
P 31	31	1	He	4964.202	3.260	54602	1.07	5000	99.3	90	110	
K 39	39	1	He	5048.222	4.180	2359378	2.19	5100	99.0	90	110	
Ca 40	40	2	H2	5059.600	5.017	19282235	12.93	5100	99.2	90	110	
Ti 47	47	1	He	202.010	3.688	25168	1.39	200	101.0	90	110	
V 51	51	1	He	101.381	3.581	322993	1.88	100	101.4	90	110	
Cr 52	52	1	He	101.513	3.662	388605	1.73	100	101.5	90	110	
Mn 55	55	1	He	101.248	2.695	269137	1.27	100	101.2	90	110	
Fe 56	56	1	He	5179.268	3.169	17006234	1.00	5100	101.6	90	110	
Co 59	59	1	He	102.253	3.146	547970	1.07	100	102.3	90	110	
Ni 60	60	1	He	103.018	3.186	138654	1.40	100	103.0	90	110	
Cu 63	63	1	He	103.198	2.945	368094	1.82	100	103.2	90	110	
Zn 66	66	1	He	101.420	1.535	63496	0.95	100	101.4	90	110	
As 75	75	1	He	98.527	2.496	43220	1.60	100	98.5	90	110	
Se 78	78	2	H2	102.329	4.955	26363	7.38	100	102.3	90	110	
Sr 88	88	1	He	98.771	2.480	373879	1.54	100	98.8	90	110	
Mo 95	95	1	He	201.845	2.249	390721	1.28	200	100.9	90	110	
Ag 107	107	1	He	50.719	3.956	276538	0.55	50	101.4	90	110	
Cd 111	111	1	He	99.500	5.429	89808	2.05	100	99.5	90	110	
Sn 118	118	1	He	99.784	4.290	236780	0.88	100	99.8	90	110	
Sb 121	121	1	He	50.788	4.574	138470	1.12	50	101.6	90	110	
Ba 137	137	1	He	98.836	5.257	116415	1.87	100	98.8	90	110	
Ce 140	140	1	He	100.095	5.024	1425434	1.79	100	100.1	90	110	
Gd 157	157	1	He	100.367	4.461	294700	2.07	100	100.4	90	110	
Au 197	197	1	He	102.693	4.025	389780	1.47	100	102.7	90	110	
Tl 205	205	1	He	50.015	4.650	427471	2.38	50	100.0	90	110	
Pb206	206	1	He	101.366	4.502	301274	1.95	100	101.4	1	10000	
Pb207	207	1	He	101.714	3.637	258975	1.15	100	101.7	1	10000	
Pb 208	208	1	He	101.962	4.231	1163924	1.68	100	102.0	90	110	
U 238	238	1	He	103.541	4.400	1099374	1.93	100	103.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7434621	2.71	7475944	99.45	80	120	
Sc_45	45	2	H2	42140541	7.98	44729383	94.21	80	120	
Ge_72	72	1	He	3941880	1.05	3950352	99.79	80	120	
Ge_72	72	2	H2	12880601	3.08	13199044	97.59	80	120	
In_115	115	1	He	4569707	3.47	4664305	97.97	80	120	
In_115	115	2	H2	12469456	1.79	12147161	102.65	80	120	
Tm_169	169	1	He	4744732	2.58	4835424	98.12	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	117_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:06:26-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.121	29.5	113	1.2	10	
Be 9	9	2	H2	0.015	111.4	3	105.1	1	
Na 23	23	1	He	1.863	35.4	26801	1.5	50	
Mg 24	24	1	He	0.439	43.0	535	16.0	50	
Al 27	27	1	He	0.859	30.8	461	12.9	50	
P 31	31	1	He	-1.357	-71.2	61	16.3	50	
K 39	39	1	He	0.924	21.0	71494	2.0	50	
Ca 40	40	2	H2	0.658	47.4	36321	9.1	50	
Ti 47	47	1	He	0.016	169.0	6	57.7	5	
V 51	51	1	He	-0.215	-6.7	854	3.6	10	
Cr 52	52	1	He	-0.035	-36.7	3743	1.3	2	
Mn 55	55	1	He	0.003	383.2	106	27.4	1	
Fe 56	56	1	He	0.580	36.0	5910	13.7	50	
Co 59	59	1	He	0.009	53.5	67	39.9	1	
Ni 60	60	1	He	-0.001	-57.4	26	0.0	2	
Cu 63	63	1	He	0.228	3.5	1181	0.7	2	
Zn 66	66	1	He	0.012	370.7	199	13.4	5	
As 75	75	1	He	-0.053	-36.0	335	1.7	2	
Se 78	78	2	H2	0.049	74.0	25	34.5	2	
Sr 88	88	1	He	0.014	83.8	237	17.5	5	
Mo 95	95	1	He	0.063	48.2	142	39.9	2	
Ag 107	107	1	He	0.004	91.3	91	20.1	1	
Cd 111	111	1	He	0.008	66.3	11	36.7	1	
Sn 118	118	1	He	0.083	25.5	978	7.7	10	
Sb 121	121	1	He	-0.738	-4.4	1188	5.8	2	
Ba 137	137	1	He	0.007	171.1	27	50.0	1	
Ce 140	140	1	He	0.009	30.1	158	26.6	5	
Gd 157	157	1	He	0.009	54.6	28	54.1	1	
Au 197	197	1	He	0.102	6.5	413	10.6	5	
Tl 205	205	1	He	0.009	16.8	154	3.3	1	
Pb206	206	1	He	0.002	438.8	120	26.8	1	
Pb207	207	1	He	0.010	110.1	112	20.2	1	
Pb 208	208	1	He	0.012	37.6	500	11.7	1	
U 238	238	1	He	0.024	26.6	260	30.0	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7473828	1.91	7475944	99.97	80	120	
Sc_45	45	2	H2	41874163	7.23	44729383	93.62	80	120	
Ge_72	72	1	He	3863688	0.84	3950352	97.81	80	120	
Ge_72	72	2	H2	12981438	2.42	13199044	98.35	80	120	
In_115	115	1	He	4584318	3.54	4664305	98.29	80	120	
In_115	115	2	H2	12333275	2.36	12147161	101.53	80	120	
Tm_169	169	1	He	4674991	4.52	4835424	96.68	80	120	

Sample Table

Sample Name	320-22811-C-9-C MSD
Data File Name	118SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:10:01-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	224.707	224.707	1.92	56517	5.56		2000	2000	
Be 9	9	2	H2	218.314	218.314	1.23	39022	5.14		2000	2000	
B 11	11	2	H2	1115.073	1115.073	2.22	173187	6.63		10000	10000	
Na 23	23	1	He	25264.087	25264.087	4.10	18730985	4.13		100000	100000	
Mg 24	24	1	He	11166.764	11166.764	2.64	4383415	4.50		100000	100000	
Al 27	27	1	He	1001.112	1001.112	4.00	187719	4.57		100000	100000	
P 31	31	1	He	1030.317	1030.317	1.77	11304	2.84		100000	100000	
K 39	39	1	He	6201.060	6201.060	2.71	2859172	2.12		100000	100000	
Ca 40	40	2	H2	57128.634	57128.634	6.60	217709605	11.12		100000	100000	
Ti 47	47	1	He	204.369	204.369	4.73	25266	5.19		2000	2000	
V 51	51	1	He	204.707	204.707	3.10	645662	4.32		2000	2000	
Cr 52	52	1	He	205.741	205.741	2.53	777608	3.46		2000	2000	
Mn 55	55	1	He	288.790	288.790	3.41	761458	4.19		22000	22000	
Fe 56	56	1	He	1923.605	1923.605	3.79	6267585	3.14		100000	100000	
Co 59	59	1	He	204.901	204.901	3.38	1089484	3.97		2000	2000	
Ni 60	60	1	He	204.091	204.091	3.11	272489	3.31		2000	2000	
Cu 63	63	1	He	203.833	203.833	3.42	720935	3.94		2000	2000	
Zn 66	66	1	He	204.053	204.053	3.18	123600	3.95		2000	2000	
As 75	75	1	He	208.696	208.696	2.59	88314	3.17		2000	2000	
Se 78	78	2	H2	203.595	203.595	4.66	51891	3.59		2000	2000	
Sr 88	88	1	He	342.921	342.921	3.57	1257512	4.39		2000	2000	
Mo 95	95	1	He	221.819	221.819	3.98	416105	4.67		2000	2000	
Ag 107	107	1	He	51.272	51.272	4.26	272055	3.79		500	500	
Cd 111	111	1	He	198.690	198.690	4.48	174577	3.99		2000	2000	
Sn 118	118	1	He	206.647	206.647	4.91	476413	4.40		2000	2000	
Sb 121	121	1	He	220.644	220.644	5.34	575217	4.83		2000	2000	
Ba 137	137	1	He	216.086	216.086	3.73	247748	3.31		2000	2000	
Ce 140	140	1	He	207.195	207.195	4.39	2871992	3.84		2000	2000	
Gd 157	157	1	He	201.559	201.559	1.21	586282	3.88		2000	2000	
Au 197	197	1	He	200.292	200.292	1.03	753086	4.02		2000	2000	
Tl 205	205	1	He	50.445	50.445	0.91	427121	3.84		500	500	
Pb206	206	1	He	200.509	200.509	0.39	590231	3.42		12000	12000	
Pb207	207	1	He	207.226	207.226	1.14	522559	4.08		12000	12000	
Pb 208	208	1	He	204.789	204.789	1.05	2315577	4.02		12000	12000	
U 238	238	1	He	218.292	218.292	1.47	2296443	4.45		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7373113	2.44	7475944	98.62	80	120	
Sc_45	45	2	H2	42231840	4.42	44729383	94.42	80	120	
Ge_72	72	1	He	3818880	1.40	3950352	96.67	80	120	
Ge_72	72	2	H2	12759276	1.48	13199044	96.67	80	120	
In_115	115	1	He	4443647	0.60	4664305	95.27	80	120	
In_115	115	2	H2	12063225	0.80	12147161	99.31	80	120	
Tm_169	169	1	He	4696190	3.04	4835424	97.12	80	120	

Sample Report

Sample Table

Sample Name	320-22811-C-10-A
Data File Name	119SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:13:25-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	2.183	2.183	2.44	611	2.90		2000	2000	
Be 9	9	2	H2	0.036	0.036	112.46	7	103.49		2000	2000	
B 11	11	2	H2	76.472	76.472	0.61	14851	5.39		10000	10000	
Na 23	23	1	He	22438.496	22438.496	3.27	16315358	2.66		100000	100000	
Mg 24	24	1	He	9453.073	9453.073	4.17	3637531	4.29		100000	100000	
Al 27	27	1	He	4.838	4.838	18.11	1177	14.51		100000	100000	
P 31	31	1	He	10.332	10.332	36.13	183	20.48		100000	100000	
K 39	39	1	He	4926.543	4926.543	2.35	2242041	2.49		100000	100000	
Ca 40	40	2	H2	54196.668	54196.668	5.37	199880005	10.40		100000	100000	
Ti 47	47	1	He	0.231	0.231	42.41	32	39.03		2000	2000	
V 51	51	1	He	-0.142	-0.142	-12.16	1051	5.15		2000	2000	
Cr 52	52	1	He	1.045	1.045	4.08	7604	0.56		2000	2000	
Mn 55	55	1	He	84.330	84.330	3.14	218085	3.19		22000	22000	
Fe 56	56	1	He	856.899	856.899	3.40	2740042	2.24		100000	100000	
Co 59	59	1	He	1.239	1.239	4.02	6474	2.45		2000	2000	
Ni 60	60	1	He	1.407	1.407	7.65	1867	7.45		2000	2000	
Cu 63	63	1	He	0.149	0.149	7.60	866	2.95		2000	2000	
Zn 66	66	1	He	2.312	2.312	3.92	1549	3.56		2000	2000	
As 75	75	1	He	5.213	5.213	11.11	2485	6.17		2000	2000	
Se 78	78	2	H2	0.105	0.105	25.18	38	17.37		2000	2000	
Sr 88	88	1	He	132.219	132.219	5.36	472978	2.54		2000	2000	
Mo 95	95	1	He	0.568	0.568	17.13	1058	13.56		2000	2000	
Ag 107	107	1	He	0.003	0.003	7.91	80	0.00		500	500	
Cd 111	111	1	He	0.016	0.016	53.08	19	40.56		2000	2000	
Sn 118	118	1	He	0.269	0.269	22.38	1362	11.25		2000	2000	
Sb 121	121	1	He	-0.725	-0.725	-5.71	1174	10.50		2000	2000	
Ba 137	137	1	He	13.298	13.298	2.33	15117	3.13		2000	2000	
Ce 140	140	1	He	0.043	0.043	12.10	626	12.55		2000	2000	
Gd 157	157	1	He	0.017	0.017	42.53	49	38.78		2000	2000	
Au 197	197	1	He	0.129	0.129	10.84	490	12.60		2000	2000	
Tl 205	205	1	He	0.012	0.012	17.78	179	8.41		500	500	
Pb206	206	1	He	0.096	0.096	16.42	377	10.21		12000	12000	
Pb207	207	1	He	0.088	0.088	18.79	296	15.80		12000	12000	
Pb 208	208	1	He	0.103	0.103	4.69	1459	4.89		12000	12000	
U 238	238	1	He	0.164	0.164	14.30	1650	14.17		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7230919	2.59	7475944	96.72	80	120	
Sc_45	45	2	H2	40877963	4.92	44729383	91.39	80	120	
Ge_72	72	1	He	3729457	3.59	3950352	94.41	80	120	
Ge_72	72	2	H2	12463074	0.38	13199044	94.42	80	120	
In_115	115	1	He	4399928	1.40	4664305	94.33	80	120	
In_115	115	2	H2	11803031	1.79	12147161	97.17	80	120	
Tm_169	169	1	He	4466140	2.40	4835424	92.36	80	120	

Sample Table

Sample Name	320-22811-C-11-A
Data File Name	120SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:16:53-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	2.632	2.632	4.43	730	2.82		2000	2000	
Be 9	9	2	H2	0.011	0.011	71.48	2	58.08		2000	2000	
B 11	11	2	H2	69.468	69.468	3.55	14004	4.72		10000	10000	
Na 23	23	1	He	12387.782	12387.782	2.48	8992195	1.53		100000	100000	
Mg 24	24	1	He	30712.949	30712.949	5.63	11777671	4.26		100000	100000	
Al 27	27	1	He	12.422	12.422	4.52	2560	2.80		100000	100000	
P 31	31	1	He	5.920	5.920	18.12	136	6.41		100000	100000	
K 39	39	1	He	2389.702	2389.702	3.18	1119491	2.15		100000	100000	
Ca 40	40	2	H2	143456.822	143456.822	8.08	535543243	10.16		100000	100000	>LDR
Ti 47	47	1	He	0.732	0.732	31.67	92	28.76		2000	2000	
V 51	51	1	He	-0.209	-0.209	-36.35	845	29.98		2000	2000	
Cr 52	52	1	He	4.756	4.756	3.68	21227	2.66		2000	2000	
Mn 55	55	1	He	67.516	67.516	3.62	174091	2.99		22000	22000	
Fe 56	56	1	He	19671.518	19671.518	3.40	62640383	2.69		100000	100000	
Co 59	59	1	He	0.735	0.735	3.93	3840	3.68		2000	2000	
Ni 60	60	1	He	5.483	5.483	4.40	7181	3.02		2000	2000	
Cu 63	63	1	He	1.018	1.018	0.74	3870	2.74		2000	2000	
Zn 66	66	1	He	2.773	2.773	2.72	1871	2.95		2000	2000	
As 75	75	1	He	2.963	2.963	2.26	1606	2.70		2000	2000	
Se 78	78	2	H2	0.069	0.069	40.64	30	24.85		2000	2000	
Sr 88	88	1	He	365.124	365.124	0.54	1342275	1.61		2000	2000	
Mo 95	95	1	He	1.672	1.672	1.75	3166	1.79		2000	2000	
Ag 107	107	1	He	0.007	0.007	78.21	106	26.86		500	500	
Cd 111	111	1	He	0.008	0.008	84.76	11	50.94		2000	2000	
Sn 118	118	1	He	0.153	0.153	30.06	1120	11.60		2000	2000	
Sb 121	121	1	He	-0.836	-0.836	-4.99	907	10.74		2000	2000	
Ba 137	137	1	He	39.700	39.700	4.68	45958	3.21		2000	2000	
Ce 140	140	1	He	0.044	0.044	5.20	656	5.34		2000	2000	
Gd 157	157	1	He	0.011	0.011	24.38	32	21.53		2000	2000	
Au 197	197	1	He	0.042	0.042	16.88	181	13.57		2000	2000	
Tl 205	205	1	He	0.001	0.001	12.31	90	0.00		500	500	
Pb206	206	1	He	0.085	0.085	7.60	352	6.44		12000	12000	
Pb207	207	1	He	0.092	0.092	12.47	311	9.96		12000	12000	
Pb 208	208	1	He	0.093	0.093	9.67	1377	7.13		12000	12000	
U 238	238	1	He	0.481	0.481	5.75	4916	5.28		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7209399	2.12	7475944	96.43	80	120	
Sc_45	45	2	H2	41417291	2.89	44729383	92.60	80	120	
Ge_72	72	1	He	3828934	1.16	3950352	96.93	80	120	
Ge_72	72	2	H2	12548111	1.24	13199044	95.07	80	120	
In_115	115	1	He	4487180	2.12	4664305	96.20	80	120	
In_115	115	2	H2	11984023	1.96	12147161	98.66	80	120	
Tm_169	169	1	He	4561299	1.25	4835424	94.33	80	120	

Sample Table

Sample Name	320-22811-C-12-A
Data File Name	121SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:20:18-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	1.310	1.310	2.77	402	5.01		2000	2000	
Be 9	9	2	H2	0.057	0.057	22.75	10	20.48		2000	2000	
B 11	11	2	H2	46.254	46.254	2.44	10480	5.41		10000	10000	
Na 23	23	1	He	9456.544	9456.544	2.89	7084852	1.64		100000	100000	
Mg 24	24	1	He	26651.430	26651.430	2.96	10544096	2.51		100000	100000	
Al 27	27	1	He	172.077	172.077	6.21	32757	4.09		100000	100000	
P 31	31	1	He	16.955	16.955	11.87	261	5.74		100000	100000	
K 39	39	1	He	4465.407	4465.407	7.38	2094095	4.45		100000	100000	
Ca 40	40	2	H2	166243.748	166243.748	6.39	617092544	10.35		100000	100000	>LDR
Ti 47	47	1	He	6.606	6.606	3.83	828	6.52		2000	2000	
V 51	51	1	He	0.010	0.010	116.33	1563	1.09		2000	2000	
Cr 52	52	1	He	0.410	0.410	9.39	5411	1.73		2000	2000	
Mn 55	55	1	He	1423.702	1423.702	4.46	3782390	1.79		22000	22000	
Fe 56	56	1	He	7666.285	7666.285	2.64	25176913	0.94		100000	100000	
Co 59	59	1	He	9.964	9.964	2.63	53428	0.21		2000	2000	
Ni 60	60	1	He	14.178	14.178	5.10	19101	2.38		2000	2000	
Cu 63	63	1	He	1.031	1.031	6.68	4031	3.40		2000	2000	
Zn 66	66	1	He	9.623	9.623	0.92	6140	2.58		2000	2000	
As 75	75	1	He	7.664	7.664	2.99	3661	1.89		2000	2000	
Se 78	78	2	H2	0.056	0.056	70.97	26	36.49		2000	2000	
Sr 88	88	1	He	178.145	178.145	1.19	667472	1.32		2000	2000	
Mo 95	95	1	He	2.480	2.480	3.07	4775	1.81		2000	2000	
Ag 107	107	1	He	0.008	0.008	29.80	113	12.82		500	500	
Cd 111	111	1	He	0.082	0.082	3.23	78	2.56		2000	2000	
Sn 118	118	1	He	0.184	0.184	26.25	1201	8.51		2000	2000	
Sb 121	121	1	He	-0.883	-0.883	-3.22	790	9.58		2000	2000	
Ba 137	137	1	He	91.327	91.327	3.21	106676	2.78		2000	2000	
Ce 140	140	1	He	1.940	1.940	2.19	27425	1.87		2000	2000	
Gd 157	157	1	He	0.242	0.242	8.64	717	7.66		2000	2000	
Au 197	197	1	He	0.027	0.027	8.42	133	5.00		2000	2000	
Tl 205	205	1	He	1.216	1.216	2.98	10557	2.03		500	500	
Pb206	206	1	He	0.386	0.386	9.97	1271	8.25		12000	12000	
Pb207	207	1	He	0.314	0.314	11.74	898	12.10		12000	12000	
Pb 208	208	1	He	0.353	0.353	2.46	4435	3.36		12000	12000	
U 238	238	1	He	2.323	2.323	3.28	24854	2.40		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7435835	2.72	7475944	99.46	80	120	
Sc_45	45	2	H2	41152816	3.91	44729383	92.00	80	120	
Ge_72	72	1	He	3902360	1.79	3950352	98.79	80	120	
Ge_72	72	2	H2	12599206	1.77	13199044	95.46	80	120	
In_115	115	1	He	4526747	1.05	4664305	97.05	80	120	
In_115	115	2	H2	12224035	1.62	12147161	100.63	80	120	
Tm_169	169	1	He	4778051	1.65	4835424	98.81	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	122_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:23:41-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	109.847	2.885	28388	5.96	100	109.8	90	110	
Be 9	9	2	H2	106.160	2.338	19465	5.03	100	106.2	90	110	
Na 23	23	1	He	5128.668	3.127	3932297	2.71	5100	100.6	90	110	
Mg 24	24	1	He	5082.778	0.794	2052086	1.40	5100	99.7	90	110	
Al 27	27	1	He	4910.692	1.782	946044	2.03	5100	96.3	90	110	
P 31	31	1	He	4864.805	1.409	54618	1.57	5000	97.3	90	110	
K 39	39	1	He	4944.910	3.414	2360253	2.69	5100	97.0	90	110	
Ca 40	40	2	H2	5075.956	6.963	19861870	10.19	5100	99.5	90	110	
Ti 47	47	1	He	200.811	2.389	25538	2.49	200	100.4	90	110	
V 51	51	1	He	99.823	2.645	324628	2.66	100	99.8	90	110	
Cr 52	52	1	He	100.120	1.749	391295	2.30	100	100.1	90	110	
Mn 55	55	1	He	99.703	1.582	270477	1.53	100	99.7	90	110	
Fe 56	56	1	He	4991.675	3.661	16730671	3.99	5100	97.9	90	110	
Co 59	59	1	He	99.768	2.543	545713	2.67	100	99.8	90	110	
Ni 60	60	1	He	100.484	2.525	138042	2.78	100	100.5	90	110	
Cu 63	63	1	He	100.493	2.030	365829	2.22	100	100.5	90	110	
Zn 66	66	1	He	101.521	2.493	63570	2.37	100	101.5	90	110	
As 75	75	1	He	98.864	2.138	43378	2.28	100	98.9	90	110	
Se 78	78	2	H2	101.542	4.697	27014	4.25	100	101.5	90	110	
Sr 88	88	1	He	99.145	2.357	375405	2.52	100	99.1	90	110	
Mo 95	95	1	He	200.660	2.193	388533	2.31	200	100.3	90	110	
Ag 107	107	1	He	49.273	4.290	274271	1.85	50	98.5	90	110	
Cd 111	111	1	He	97.444	4.227	89824	1.88	100	97.4	90	110	
Sn 118	118	1	He	98.307	4.103	238220	2.59	100	98.3	90	110	
Sb 121	121	1	He	50.197	4.930	139769	2.71	50	100.4	90	110	
Ba 137	137	1	He	97.950	4.435	117813	1.87	100	97.9	90	110	
Ce 140	140	1	He	98.175	4.219	1427784	2.42	100	98.2	90	110	
Gd 157	157	1	He	98.392	3.501	294802	2.27	100	98.4	90	110	
Au 197	197	1	He	100.102	3.353	387718	2.55	100	100.1	90	110	
Tl 205	205	1	He	48.575	2.384	423688	1.30	50	97.1	90	110	
Pb206	206	1	He	99.270	3.025	301116	2.39	100	99.3	1	10000	
Pb207	207	1	He	98.555	2.645	256066	2.11	100	98.6	1	10000	
Pb 208	208	1	He	99.337	3.355	1157210	2.58	100	99.3	90	110	
U 238	238	1	He	100.544	3.587	1089414	2.65	100	100.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7584532	1.14	7475944	101.45	80	120	
Sc_45	45	2	H2	43316437	3.39	44729383	96.84	80	120	
Ge_72	72	1	He	3942344	0.79	3950352	99.80	80	120	
Ge_72	72	2	H2	13312498	1.12	13199044	100.86	80	120	
In_115	115	1	He	4664727	3.09	4664305	100.01	80	120	
In_115	115	2	H2	12823534	1.80	12147161	105.57	80	120	
Tm_169	169	1	He	4839499	1.35	4835424	100.08	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	123_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:27:09-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.209	166.2	134	60.0	10	
Be 9	9	2	H2	0.219	164.3	38	161.8	1	
Na 23	23	1	He	3.011	85.6	28098	5.5	50	
Mg 24	24	1	He	2.337	128.1	1298	90.9	50	
Al 27	27	1	He	1.005	50.5	495	18.1	50	
P 31	31	1	He	-0.855	-53.0	67	6.2	50	
K 39	39	1	He	-0.631	-348.1	71931	1.2	50	
Ca 40	40	2	H2	128.349	170.2	499848	158.2	50	>+/-RL
Ti 47	47	1	He	0.083	26.5	15	20.8	5	
V 51	51	1	He	-0.227	-5.4	830	3.4	10	
Cr 52	52	1	He	-0.042	-55.8	3775	1.0	2	
Mn 55	55	1	He	0.052	145.6	240	83.9	1	
Fe 56	56	1	He	1.669	105.7	9596	59.7	50	
Co 59	59	1	He	0.010	63.7	73	45.4	1	
Ni 60	60	1	He	0.009	144.5	40	45.0	2	
Cu 63	63	1	He	0.248	4.2	1273	4.6	2	
Zn 66	66	1	He	0.029	297.4	215	21.0	5	
As 75	75	1	He	-0.089	-86.4	330	8.8	2	
Se 78	78	2	H2	0.170	173.6	57	133.5	2	
Sr 88	88	1	He	0.028	103.4	299	33.5	5	
Mo 95	95	1	He	0.062	36.4	146	29.1	2	
Ag 107	107	1	He	0.003	90.4	89	19.2	1	
Cd 111	111	1	He	0.007	135.8	11	75.8	1	
Sn 118	118	1	He	0.091	31.2	1017	6.6	10	
Sb 121	121	1	He	-0.769	-3.0	1130	5.0	2	
Ba 137	137	1	He	0.013	120.0	34	53.3	1	
Ce 140	140	1	He	0.009	49.0	164	37.7	5	
Gd 157	157	1	He	0.010	20.2	33	20.0	1	
Au 197	197	1	He	0.079	17.5	334	14.9	5	
Tl 205	205	1	He	0.003	161.0	109	34.1	1	
Pb206	206	1	He	0.009	117.9	144	21.9	1	
Pb207	207	1	He	0.008	71.2	111	12.1	1	
Pb 208	208	1	He	0.013	36.6	532	9.9	1	
U 238	238	1	He	0.023	40.6	252	38.5	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7595752	1.69	7475944	101.60	80	120	
Sc_45	45	2	H2	42128004	5.29	44729383	94.18	80	120	
Ge_72	72	1	He	3998016	3.58	3950352	101.21	80	120	
Ge_72	72	2	H2	13146139	2.02	13199044	99.60	80	120	
In_115	115	1	He	4681191	0.73	4664305	100.36	80	120	
In_115	115	2	H2	12425498	1.63	12147161	102.29	80	120	
Tm_169	169	1	He	4823242	1.34	4835424	99.75	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	124_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:30:44-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	114.308	1.394	28071	4.13	100	114.3	90	110	> +/- 10%
Be 9	9	2	H2	110.025	1.839	19176	4.20	100	110.0	90	110	> +/- 10%
Na 23	23	1	He	5319.277	1.571	3832399	2.54	5100	104.3	90	110	
Mg 24	24	1	He	5287.571	1.375	2006073	1.98	5100	103.7	90	110	
Al 27	27	1	He	5090.356	2.018	921566	2.60	5100	99.8	90	110	
P 31	31	1	He	5037.833	1.939	53155	2.88	5000	100.8	90	110	
K 39	39	1	He	4994.019	4.326	2239626	4.29	5100	97.9	90	110	
Ca 40	40	2	H2	5145.283	7.182	19136619	10.02	5100	100.9	90	110	
Ti 47	47	1	He	207.346	1.929	24782	2.74	200	103.7	90	110	
V 51	51	1	He	103.052	1.644	314891	2.09	100	103.1	90	110	
Cr 52	52	1	He	103.368	2.278	379514	2.77	100	103.4	90	110	
Mn 55	55	1	He	103.231	1.855	263185	2.53	100	103.2	90	110	
Fe 56	56	1	He	5227.527	1.789	16464769	2.51	5100	102.5	90	110	
Co 59	59	1	He	103.772	2.551	533445	3.20	100	103.8	90	110	
Ni 60	60	1	He	104.454	2.505	134851	3.10	100	104.5	90	110	
Cu 63	63	1	He	104.231	2.666	356589	3.41	100	104.2	90	110	
Zn 66	66	1	He	102.201	1.668	62346	3.14	100	102.2	90	110	
As 75	75	1	He	99.402	1.748	42488	3.19	100	99.4	90	110	
Se 78	78	2	H2	104.658	2.961	26468	3.33	100	104.7	90	110	
Sr 88	88	1	He	99.228	1.241	366023	2.85	100	99.2	90	110	
Mo 95	95	1	He	202.224	2.056	381489	3.63	200	101.1	90	110	
Ag 107	107	1	He	49.869	4.708	267851	3.43	50	99.7	90	110	
Cd 111	111	1	He	98.848	3.750	87926	2.48	100	98.8	90	110	
Sn 118	118	1	He	99.272	4.378	232082	3.11	100	99.3	90	110	
Sb 121	121	1	He	50.714	4.124	136235	2.76	50	101.4	90	110	
Ba 137	137	1	He	98.269	4.493	114057	3.21	100	98.3	90	110	
Ce 140	140	1	He	100.020	4.428	1403467	3.15	100	100.0	90	110	
Gd 157	157	1	He	100.516	2.536	289615	3.79	100	100.5	90	110	
Au 197	197	1	He	101.802	2.343	379143	3.59	100	101.8	90	110	
Tl 205	205	1	He	49.541	1.278	415459	2.53	50	99.1	90	110	
Pb206	206	1	He	101.952	2.068	297340	3.30	100	102.0	1	10000	
Pb207	207	1	He	100.370	1.924	250727	3.18	100	100.4	1	10000	
Pb 208	208	1	He	101.863	1.804	1140943	3.03	100	101.9	90	110	
U 238	238	1	He	102.280	2.419	1065667	3.67	100	102.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7127134	1.06	7475944	95.33	80	120	
Sc_45	45	2	H2	41179236	3.05	44729383	92.06	80	120	
Ge_72	72	1	He	3840126	1.63	3950352	97.21	80	120	
Ge_72	72	2	H2	12651960	0.55	13199044	95.86	80	120	
In_115	115	1	He	4499265	1.30	4664305	96.46	80	120	
In_115	115	2	H2	12168619	0.61	12147161	100.18	80	120	
Tm_169	169	1	He	4651516	1.26	4835424	96.20	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	125_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:34:11-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.016	87.2	88	6.5	10	
Be 9	9	2	H2	0.019	51.2	4	52.7	1	
Na 23	23	1	He	2.691	51.6	26654	3.3	50	
Mg 24	24	1	He	0.606	17.3	583	7.1	50	
Al 27	27	1	He	0.799	30.6	437	10.1	50	
P 31	31	1	He	-1.525	-139.0	57	40.1	50	
K 39	39	1	He	6.123	14.0	71792	0.2	50	
Ca 40	40	2	H2	0.534	35.0	36295	7.9	50	
Ti 47	47	1	He	0.017	189.7	6	66.7	5	
V 51	51	1	He	-0.192	-13.1	903	8.5	10	
Cr 52	52	1	He	-0.028	-183.7	3666	5.3	2	
Mn 55	55	1	He	0.003	97.1	103	6.0	1	
Fe 56	56	1	He	0.629	27.9	5893	9.2	50	
Co 59	59	1	He	0.006	8.2	49	4.7	1	
Ni 60	60	1	He	-0.002	-390.7	23	47.2	2	
Cu 63	63	1	He	0.233	2.4	1163	2.2	2	
Zn 66	66	1	He	0.030	123.4	211	15.0	5	
As 75	75	1	He	-0.060	-121.4	332	6.0	2	
Se 78	78	2	H2	0.023	36.9	19	11.2	2	
Sr 88	88	1	He	0.008	147.5	215	17.2	5	
Mo 95	95	1	He	0.069	28.7	153	22.7	2	
Ag 107	107	1	He	0.002	285.7	77	34.0	1	
Cd 111	111	1	He	0.004	112.8	8	50.0	1	
Sn 118	118	1	He	0.058	55.8	906	9.8	10	
Sb 121	121	1	He	-0.749	-5.3	1144	10.6	2	
Ba 137	137	1	He	0.011	197.6	31	80.4	1	
Ce 140	140	1	He	0.007	32.6	139	25.0	5	
Gd 157	157	1	He	0.010	64.4	31	59.0	1	
Au 197	197	1	He	0.072	22.9	299	21.7	5	
Tl 205	205	1	He	0.005	56.1	124	17.8	1	
Pb206	206	1	He	-0.001	-211.9	109	7.7	1	
Pb207	207	1	He	0.001	441.7	91	17.3	1	
Pb 208	208	1	He	0.003	58.5	391	3.4	1	
U 238	238	1	He	0.020	16.8	219	15.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7264265	0.62	7475944	97.17	80	120	
Sc_45	45	2	H2	42401929	6.69	44729383	94.80	80	120	
Ge_72	72	1	He	3880264	3.97	3950352	98.23	80	120	
Ge_72	72	2	H2	12925350	2.21	13199044	97.93	80	120	
In_115	115	1	He	4522393	1.60	4664305	96.96	80	120	
In_115	115	2	H2	12320117	0.72	12147161	101.42	80	120	
Tm_169	169	1	He	4642354	1.31	4835424	96.01	80	120	

Sample Table

Sample Name	320-22811-C-7-B
Data File Name	126SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:37:46-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	7.814	7.814	4.09	1982	6.26		2000	2000	
Be 9	9	2	H2	0.030	0.030	20.43	6	18.18		2000	2000	
B 11	11	2	H2	285.980	285.980	2.80	45713	5.78		10000	10000	
Na 23	23	1	He	30812.050	30812.050	4.40	22503600	2.04		100000	100000	
Mg 24	24	1	He	34677.196	34677.196	5.99	13403043	3.80		100000	100000	
Al 27	27	1	He	24.378	24.378	3.30	4787	0.83		100000	100000	
P 31	31	1	He	22.038	22.038	8.82	311	8.40		100000	100000	
K 39	39	1	He	21920.931	21920.931	4.48	9784969	2.33		100000	100000	
Ca 40	40	2	H2	194647.918	194647.918	5.36	717984896	8.64		100000	100000	>LDR
Ti 47	47	1	He	0.905	0.905	12.32	114	9.77		2000	2000	
V 51	51	1	He	-0.025	-0.025	-259.36	1415	11.86		2000	2000	
Cr 52	52	1	He	0.754	0.754	5.68	6567	2.61		2000	2000	
Mn 55	55	1	He	1605.690	1605.690	1.20	4172610	1.63		22000	22000	
Fe 56	56	1	He	36926.804	36926.804	2.54	118538795	1.16		100000	100000	
Co 59	59	1	He	3.134	3.134	1.81	16445	0.89		2000	2000	
Ni 60	60	1	He	4.990	4.990	2.95	6591	1.74		2000	2000	
Cu 63	63	1	He	0.194	0.194	11.85	1027	9.08		2000	2000	
Zn 66	66	1	He	1.483	1.483	4.66	1074	4.39		2000	2000	
As 75	75	1	He	17.153	17.153	1.05	7498	0.43		2000	2000	
Se 78	78	2	H2	0.121	0.121	27.79	42	19.09		2000	2000	
Sr 88	88	1	He	570.462	570.462	2.16	2068060	1.74		2000	2000	
Mo 95	95	1	He	0.646	0.646	4.04	1221	3.51		2000	2000	
Ag 107	107	1	He	0.014	0.014	29.20	137	13.58		500	500	
Cd 111	111	1	He	0.017	0.017	18.69	19	12.37		2000	2000	
Sn 118	118	1	He	0.135	0.135	25.54	1048	5.69		2000	2000	
Sb 121	121	1	He	-0.836	-0.836	-3.10	882	6.89		2000	2000	
Ba 137	137	1	He	81.455	81.455	4.87	91871	3.06		2000	2000	
Ce 140	140	1	He	0.733	0.733	4.35	10034	2.43		2000	2000	
Gd 157	157	1	He	0.150	0.150	3.66	434	2.47		2000	2000	
Au 197	197	1	He	0.028	0.028	24.59	132	18.92		2000	2000	
Tl 205	205	1	He	-0.001	-0.001	-317.71	77	21.74		500	500	
Pb206	206	1	He	0.049	0.049	16.39	254	8.92		12000	12000	
Pb207	207	1	He	0.046	0.046	35.58	201	18.85		12000	12000	
Pb 208	208	1	He	0.049	0.049	11.36	910	5.76		12000	12000	
U 238	238	1	He	0.240	0.240	4.13	2505	2.92		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7268583	2.43	7475944	97.23	80	120	
Sc_45	45	2	H2	40914781	3.21	44729383	91.47	80	120	
Ge_72	72	1	He	3776388	0.57	3950352	95.60	80	120	
Ge_72	72	2	H2	12464751	0.67	13199044	94.44	80	120	
In_115	115	1	He	4373155	2.21	4664305	93.76	80	120	
In_115	115	2	H2	11863461	0.78	12147161	97.66	80	120	
Tm_169	169	1	He	4649944	1.21	4835424	96.16	80	120	

Sample Report

Sample Table

Sample Name	sd 320-22811-C-7-B@5
Data File Name	127SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:41:06-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	1.406	1.406	5.83	446	9.29		2000	2000	
Be 9	9	2	H2	0.013	0.013	35.24	3	28.64		2000	2000	
B 11	11	2	H2	65.840	65.840	2.10	14011	7.96		10000	10000	
Na 23	23	1	He	5948.519	5948.519	4.14	4491120	2.28		100000	100000	
Mg 24	24	1	He	6872.372	6872.372	2.39	2734826	0.96		100000	100000	
Al 27	27	1	He	5.392	5.392	11.85	1320	6.96		100000	100000	
P 31	31	1	He	4.609	4.609	79.74	127	34.46		100000	100000	
K 39	39	1	He	4445.914	4445.914	6.86	2098086	4.80		100000	100000	
Ca 40	40	2	H2	35636.254	35636.254	6.23	138692995	13.13		100000	100000	
Ti 47	47	1	He	0.224	0.224	14.59	32	10.83		2000	2000	
V 51	51	1	He	-0.288	-0.288	-6.07	621	7.07		2000	2000	
Cr 52	52	1	He	0.105	0.105	30.78	4278	3.12		2000	2000	
Mn 55	55	1	He	313.765	313.765	4.97	838563	3.11		22000	22000	
Fe 56	56	1	He	7587.925	7587.925	5.91	25053745	4.00		100000	100000	
Co 59	59	1	He	0.631	0.631	3.60	3419	1.32		2000	2000	
Ni 60	60	1	He	1.047	1.047	4.17	1444	1.92		2000	2000	
Cu 63	63	1	He	0.217	0.217	4.47	1141	0.79		2000	2000	
Zn 66	66	1	He	1.102	1.102	3.49	885	0.13		2000	2000	
As 75	75	1	He	3.281	3.281	7.32	1795	3.73		2000	2000	
Se 78	78	2	H2	0.054	0.054	68.05	27	38.08		2000	2000	
Sr 88	88	1	He	108.208	108.208	5.14	410371	2.38		2000	2000	
Mo 95	95	1	He	0.135	0.135	10.09	284	7.53		2000	2000	
Ag 107	107	1	He	0.004	0.004	86.84	93	25.00		500	500	
Cd 111	111	1	He	0.003	0.003	275.49	7	103.25		2000	2000	
Sn 118	118	1	He	0.041	0.041	94.23	882	8.08		2000	2000	
Sb 121	121	1	He	-0.923	-0.923	-3.05	698	11.16		2000	2000	
Ba 137	137	1	He	15.878	15.878	3.61	18927	1.07		2000	2000	
Ce 140	140	1	He	0.132	0.132	11.82	1929	9.95		2000	2000	
Gd 157	157	1	He	0.031	0.031	35.19	92	36.38		2000	2000	
Au 197	197	1	He	0.018	0.018	45.11	98	33.11		2000	2000	
Tl 205	205	1	He	-0.004	-0.004	-29.69	46	21.13		500	500	
Pb206	206	1	He	0.030	0.030	21.94	201	11.28		12000	12000	
Pb207	207	1	He	0.023	0.023	36.76	146	11.53		12000	12000	
Pb 208	208	1	He	0.028	0.028	7.25	687	6.06		12000	12000	
U 238	238	1	He	0.046	0.046	3.95	497	1.78		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7478684	2.31	7475944	100.04	80	120	
Sc_45	45	2	H2	43092209	6.94	44729383	96.34	80	120	
Ge_72	72	1	He	3952475	2.73	3950352	100.05	80	120	
Ge_72	72	2	H2	13155363	3.50	13199044	99.67	80	120	
In_115	115	1	He	4617996	2.59	4664305	99.01	80	120	
In_115	115	2	H2	12350043	3.46	12147161	101.67	80	120	
Tm_169	169	1	He	4704256	2.91	4835424	97.29	80	120	

Sample Table

Sample Name	pds 320-22811-C-7-B
Data File Name	128SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:44:34-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	474.727	474.727	1.44	119772	3.70		2000	2000	
Be 9	9	2	H2	458.195	458.195	1.43	82220	3.42		2000	2000	
B 11	11	2	H2	2562.936	2562.936	1.69	394774	5.25		10000	10000	
Na 23	23	1	He	31637.592	31637.592	2.36	23699938	3.36		100000	100000	
Mg 24	24	1	He	36058.031	36058.031	2.46	14297375	3.26		100000	100000	
Al 27	27	1	He	2214.296	2214.296	1.72	419130	1.89		100000	100000	
P 31	31	1	He	2105.170	2105.170	2.95	23256	2.91		100000	100000	
K 39	39	1	He	23192.928	23192.928	1.95	10611765	1.18		100000	100000	
Ca 40	40	2	H2	194913.887	194913.887	4.17	745283669	8.23		100000	100000	>LDR
Ti 47	47	1	He	417.356	417.356	3.24	52123	3.08		2000	2000	
V 51	51	1	He	428.199	428.199	3.34	1363222	4.94		2000	2000	
Cr 52	52	1	He	434.100	434.100	4.02	1652540	1.57		2000	2000	
Mn 55	55	1	He	1959.216	1959.216	1.01	5219007	2.14		22000	22000	
Fe 56	56	1	He	38989.443	38989.443	3.56	128339717	4.42		100000	100000	
Co 59	59	1	He	431.144	431.144	2.31	2316412	3.09		2000	2000	
Ni 60	60	1	He	407.176	407.176	3.07	549297	3.27		2000	2000	
Cu 63	63	1	He	409.980	409.980	1.67	1465236	3.73		2000	2000	
Zn 66	66	1	He	385.005	385.005	1.37	238739	1.70		2000	2000	
As 75	75	1	He	415.538	415.538	2.24	179805	2.66		2000	2000	
Se 78	78	2	H2	413.695	413.695	0.84	104986	2.52		2000	2000	
Sr 88	88	1	He	947.566	947.566	1.01	3559369	1.55		2000	2000	
Mo 95	95	1	He	426.658	426.658	2.84	819923	3.13		2000	2000	
Ag 107	107	1	He	100.450	100.450	1.15	543129	2.18		500	500	
Cd 111	111	1	He	385.879	385.879	0.67	345588	2.90		2000	2000	
Sn 118	118	1	He	417.473	417.473	1.74	980523	4.35		2000	2000	
Sb 121	121	1	He	441.867	441.867	1.16	1171024	2.82		2000	2000	
Ba 137	137	1	He	487.257	487.257	1.02	569353	2.67		2000	2000	
Ce 140	140	1	He	411.853	411.853	1.92	5817858	2.35		2000	2000	
Gd 157	157	1	He	411.710	411.710	1.97	1204806	3.65		2000	2000	
Au 197	197	1	He	411.607	411.607	3.16	1557415	5.49		2000	2000	
Tl 205	205	1	He	102.158	102.158	2.32	869969	3.12		500	500	
Pb206	206	1	He	398.497	398.497	1.62	1180059	3.26		12000	12000	
Pb207	207	1	He	415.398	415.398	1.77	1053538	2.85		12000	12000	
Pb 208	208	1	He	414.781	414.781	1.71	4718184	3.88		12000	12000	
U 238	238	1	He	424.248	424.248	0.39	4489918	3.51		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7451060	2.95	7475944	99.67	80	120	
Sc_45	45	2	H2	42416357	4.22	44729383	94.83	80	120	
Ge_72	72	1	He	3912684	0.55	3950352	99.05	80	120	
Ge_72	72	2	H2	12703322	3.24	13199044	96.24	80	120	
In_115	115	1	He	4529195	3.35	4664305	97.10	80	120	
In_115	115	2	H2	12109993	2.86	12147161	99.69	80	120	
Tm_169	169	1	He	4725663	3.39	4835424	97.73	80	120	

Sample Table

Sample Name	320-22811-B-7-C MS
Data File Name	129SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:47:46-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	225.510	225.510	2.26	55205	3.37		2000	2000	
Be 9	9	2	H2	214.679	214.679	1.65	37346	2.18		2000	2000	
B 11	11	2	H2	1345.828	1345.828	2.82	202633	3.98		10000	10000	
Na 23	23	1	He	31251.011	31251.011	6.04	23677036	3.53		100000	100000	
Mg 24	24	1	He	35170.689	35170.689	4.69	14108042	2.19		100000	100000	
Al 27	27	1	He	997.608	997.608	4.03	191241	1.53		100000	100000	
P 31	31	1	He	1050.865	1050.865	3.63	11786	1.12		100000	100000	
K 39	39	1	He	22633.829	22633.829	3.31	10483282	1.02		100000	100000	
Ca 40	40	2	H2	192761.383	192761.383	6.01	713994709	7.43		100000	100000	>LDR
Ti 47	47	1	He	200.909	200.909	4.30	25392	1.77		2000	2000	
V 51	51	1	He	197.872	197.872	4.56	637979	2.39		2000	2000	
Cr 52	52	1	He	197.333	197.333	3.88	762674	1.62		2000	2000	
Mn 55	55	1	He	1788.740	1788.740	3.34	4821633	0.85		22000	22000	
Fe 56	56	1	He	37902.740	37902.740	5.19	126201243	2.94		100000	100000	
Co 59	59	1	He	196.423	196.423	4.59	1067664	2.15		2000	2000	
Ni 60	60	1	He	196.188	196.188	5.15	267776	2.76		2000	2000	
Cu 63	63	1	He	192.106	192.106	4.50	694628	2.03		2000	2000	
Zn 66	66	1	He	185.368	185.368	2.68	115064	1.23		2000	2000	
As 75	75	1	He	210.036	210.036	4.21	91059	2.71		2000	2000	
Se 78	78	2	H2	198.854	198.854	2.79	48519	2.70		2000	2000	
Sr 88	88	1	He	772.522	772.522	6.66	2901180	5.27		2000	2000	
Mo 95	95	1	He	213.729	213.729	4.10	410734	2.62		2000	2000	
Ag 107	107	1	He	49.513	49.513	1.60	262823	2.14		500	500	
Cd 111	111	1	He	192.715	192.715	2.13	169366	1.21		2000	2000	
Sn 118	118	1	He	202.863	202.863	1.36	467920	2.29		2000	2000	
Sb 121	121	1	He	215.515	215.515	2.01	562146	2.34		2000	2000	
Ba 137	137	1	He	282.427	282.427	1.89	323964	3.09		2000	2000	
Ce 140	140	1	He	209.510	209.510	2.29	2905585	3.23		2000	2000	
Gd 157	157	1	He	196.405	196.405	3.79	580327	1.16		2000	2000	
Au 197	197	1	He	183.651	183.651	5.92	701134	3.18		2000	2000	
Tl 205	205	1	He	48.059	48.059	5.54	413223	2.88		500	500	
Pb206	206	1	He	192.288	192.288	4.97	574918	2.45		12000	12000	
Pb207	207	1	He	197.449	197.449	4.86	505653	2.15		12000	12000	
Pb 208	208	1	He	195.459	195.459	4.99	2244524	2.55		12000	12000	
U 238	238	1	He	211.350	211.350	5.50	2257797	3.40		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7542775	2.58	7475944	100.89	80	120	
Sc_45	45	2	H2	41111188	1.71	44729383	91.91	80	120	
Ge_72	72	1	He	3914421	1.52	3950352	99.09	80	120	
Ge_72	72	2	H2	12210267	0.09	13199044	92.51	80	120	
In_115	115	1	He	4445307	2.44	4664305	95.30	80	120	
In_115	115	2	H2	11857340	1.53	12147161	97.61	80	120	
Tm_169	169	1	He	4774473	2.77	4835424	98.74	80	120	

Sample Table

Sample Name	320-22811-B-7-D MSD
Data File Name	130SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:51:04-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	234.192	234.192	1.70	59376	5.61		2000	2000	
Be 9	9	2	H2	221.149	221.149	2.65	39849	5.73		2000	2000	
B 11	11	2	H2	1409.060	1409.060	2.31	219729	7.71		10000	10000	
Na 23	23	1	He	31510.463	31510.463	1.88	24140663	1.20		100000	100000	
Mg 24	24	1	He	36232.303	36232.303	1.85	14693727	1.56		100000	100000	
Al 27	27	1	He	1009.833	1009.833	1.02	195689	0.28		100000	100000	
P 31	31	1	He	1049.988	1049.988	1.99	11904	1.52		100000	100000	
K 39	39	1	He	22924.672	22924.672	1.41	10731867	1.66		100000	100000	
Ca 40	40	2	H2	196485.596	196485.596	4.18	754936021	10.29		100000	100000	>LDR
Ti 47	47	1	He	205.744	205.744	0.99	26291	2.10		2000	2000	
V 51	51	1	He	204.258	204.258	1.20	665713	0.43		2000	2000	
Cr 52	52	1	He	201.847	201.847	1.08	788504	0.99		2000	2000	
Mn 55	55	1	He	1824.381	1824.381	1.83	4970355	0.60		22000	22000	
Fe 56	56	1	He	39089.423	39089.423	0.67	131597555	1.02		100000	100000	
Co 59	59	1	He	201.561	201.561	1.01	1107686	1.33		2000	2000	
Ni 60	60	1	He	201.694	201.694	1.47	278326	0.25		2000	2000	
Cu 63	63	1	He	196.862	196.862	1.03	719625	0.33		2000	2000	
Zn 66	66	1	He	191.413	191.413	2.85	119924	0.70		2000	2000	
As 75	75	1	He	217.460	217.460	2.49	95168	0.17		2000	2000	
Se 78	78	2	H2	199.066	199.066	2.22	51593	5.38		2000	2000	
Sr 88	88	1	He	786.775	786.775	2.45	2983744	0.58		2000	2000	
Mo 95	95	1	He	218.055	218.055	2.03	423093	0.60		2000	2000	
Ag 107	107	1	He	49.782	49.782	1.00	272257	2.07		500	500	
Cd 111	111	1	He	192.188	192.188	2.23	174006	0.72		2000	2000	
Sn 118	118	1	He	207.093	207.093	3.08	491924	1.12		2000	2000	
Sb 121	121	1	He	217.845	217.845	1.88	585306	1.05		2000	2000	
Ba 137	137	1	He	286.291	286.291	1.63	338272	1.85		2000	2000	
Ce 140	140	1	He	208.633	208.633	4.24	2979420	2.73		2000	2000	
Gd 157	157	1	He	206.915	206.915	3.61	598479	1.60		2000	2000	
Au 197	197	1	He	198.008	198.008	2.53	740404	0.92		2000	2000	
Tl 205	205	1	He	50.985	50.985	3.82	429222	1.22		500	500	
Pb206	206	1	He	201.654	201.654	3.90	590257	1.42		12000	12000	
Pb207	207	1	He	210.701	210.701	3.76	528248	0.81		12000	12000	
Pb 208	208	1	He	206.648	206.648	3.40	2323273	0.16		12000	12000	
U 238	238	1	He	219.942	219.942	3.30	2300445	0.20		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7620323	1.24	7475944	101.93	80	120	
Sc_45	45	2	H2	42598744	6.22	44729383	95.24	80	120	
Ge_72	72	1	He	3951896	2.49	3950352	100.04	80	120	
Ge_72	72	2	H2	12969069	4.70	13199044	98.26	80	120	
In_115	115	1	He	4579694	2.27	4664305	98.19	80	120	
In_115	115	2	H2	12514808	1.97	12147161	103.03	80	120	
Tm_169	169	1	He	4673998	3.47	4835424	96.66	80	120	

Sample Table

Sample Name	320-22811-C-8-B
Data File Name	131SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:54:22-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	8.008	8.008	3.95	2053	3.95		2000	2000	
Be 9	9	2	H2	0.041	0.041	32.77	8	29.06		2000	2000	
B 11	11	2	H2	306.532	306.532	4.28	49333	6.06		10000	10000	
Na 23	23	1	He	30081.596	30081.596	0.24	22309137	2.46		100000	100000	
Mg 24	24	1	He	34468.209	34468.209	1.35	13531367	3.24		100000	100000	
Al 27	27	1	He	22.557	22.557	2.58	4517	0.82		100000	100000	
P 31	31	1	He	25.854	25.854	7.92	357	7.01		100000	100000	
K 39	39	1	He	21469.493	21469.493	2.15	9730125	1.97		100000	100000	
Ca 40	40	2	H2	187521.873	187521.873	7.34	700515371	10.53		100000	100000	>LDR
Ti 47	47	1	He	0.859	0.859	20.32	110	18.98		2000	2000	
V 51	51	1	He	-0.039	-0.039	-55.47	1395	4.81		2000	2000	
Cr 52	52	1	He	0.852	0.852	7.53	7027	1.25		2000	2000	
Mn 55	55	1	He	1558.746	1558.746	2.25	4109601	1.52		22000	22000	
Fe 56	56	1	He	37285.896	37285.896	3.36	121429611	1.02		100000	100000	
Co 59	59	1	He	3.409	3.409	2.04	18145	1.35		2000	2000	
Ni 60	60	1	He	5.065	5.065	1.64	6793	3.32		2000	2000	
Cu 63	63	1	He	0.293	0.293	4.70	1395	5.37		2000	2000	
Zn 66	66	1	He	2.549	2.549	10.07	1721	7.62		2000	2000	
As 75	75	1	He	16.577	16.577	3.47	7302	1.88		2000	2000	
Se 78	78	2	H2	0.111	0.111	37.23	40	24.87		2000	2000	
Sr 88	88	1	He	573.566	573.566	3.49	2092011	1.99		2000	2000	
Mo 95	95	1	He	0.768	0.768	10.06	1455	8.64		2000	2000	
Ag 107	107	1	He	0.013	0.013	30.61	136	17.27		500	500	
Cd 111	111	1	He	0.041	0.041	11.29	40	8.66		2000	2000	
Sn 118	118	1	He	0.201	0.201	23.51	1214	7.82		2000	2000	
Sb 121	121	1	He	-0.868	-0.868	-2.23	812	4.52		2000	2000	
Ba 137	137	1	He	79.696	79.696	2.96	91154	1.99		2000	2000	
Ce 140	140	1	He	0.733	0.733	2.96	10175	2.52		2000	2000	
Gd 157	157	1	He	0.147	0.147	16.97	418	16.38		2000	2000	
Au 197	197	1	He	0.147	0.147	24.44	568	22.89		2000	2000	
Tl 205	205	1	He	0.009	0.009	43.21	153	19.92		500	500	
Pb206	206	1	He	0.054	0.054	24.13	263	12.47		12000	12000	
Pb207	207	1	He	0.062	0.062	16.21	239	8.41		12000	12000	
Pb 208	208	1	He	0.064	0.064	16.57	1057	8.79		12000	12000	
U 238	238	1	He	0.272	0.272	6.42	2788	5.61		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7375281	2.34	7475944	98.65	80	120	
Sc_45	45	2	H2	41424544	3.43	44729383	92.61	80	120	
Ge_72	72	1	He	3800567	1.56	3950352	96.21	80	120	
Ge_72	72	2	H2	12402507	1.88	13199044	93.97	80	120	
In_115	115	1	He	4433041	1.69	4664305	95.04	80	120	
In_115	115	2	H2	11900647	0.92	12147161	97.97	80	120	
Tm_169	169	1	He	4570255	2.53	4835424	94.52	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	132_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T16:57:42-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	112.934	1.644	27826	3.82	100	112.9	90	110	> +/- 10%
Be 9	9	2	H2	108.260	1.480	18926	2.50	100	108.3	90	110	
Na 23	23	1	He	5183.679	2.449	3955409	2.87	5100	101.6	90	110	
Mg 24	24	1	He	5104.571	1.833	2050517	0.33	5100	100.1	90	110	
Al 27	27	1	He	4955.390	1.201	950106	2.41	5100	97.2	90	110	
P 31	31	1	He	4943.530	0.960	55237	2.22	5000	98.9	90	110	
K 39	39	1	He	5074.558	0.858	2409112	2.33	5100	99.5	90	110	
Ca 40	40	2	H2	5150.316	2.244	19210495	6.15	5100	101.0	90	110	
Ti 47	47	1	He	201.672	1.798	25528	3.08	200	100.8	90	110	
V 51	51	1	He	100.307	1.638	324644	2.55	100	100.3	90	110	
Cr 52	52	1	He	100.991	1.502	392764	2.54	100	101.0	90	110	
Mn 55	55	1	He	100.690	1.573	271832	1.87	100	100.7	90	110	
Fe 56	56	1	He	5144.324	0.860	17158087	1.81	5100	100.9	90	110	
Co 59	59	1	He	100.944	1.373	549505	2.32	100	100.9	90	110	
Ni 60	60	1	He	102.174	0.966	139695	2.41	100	102.2	90	110	
Cu 63	63	1	He	101.876	0.886	369096	2.28	100	101.9	90	110	
Zn 66	66	1	He	103.747	3.918	64145	2.66	100	103.7	90	110	
As 75	75	1	He	100.819	4.262	43670	2.83	100	100.8	90	110	
Se 78	78	2	H2	102.662	4.374	26654	2.93	100	102.7	90	110	
Sr 88	88	1	He	101.507	3.757	379504	2.37	100	101.5	90	110	
Mo 95	95	1	He	206.887	2.733	395605	1.83	200	103.4	90	110	
Ag 107	107	1	He	50.106	2.297	274813	3.16	50	100.2	90	110	
Cd 111	111	1	He	99.226	2.344	90125	3.44	100	99.2	90	110	
Sn 118	118	1	He	99.965	1.830	238616	2.58	100	100.0	90	110	
Sb 121	121	1	He	51.422	2.147	140994	2.66	50	102.8	90	110	
Ba 137	137	1	He	99.800	1.362	118276	2.41	100	99.8	90	110	
Ce 140	140	1	He	100.397	1.586	1438442	2.46	100	100.4	90	110	
Gd 157	157	1	He	101.166	1.615	296894	2.06	100	101.2	90	110	
Au 197	197	1	He	101.475	2.849	384934	2.97	100	101.5	90	110	
Tl 205	205	1	He	49.530	2.590	423086	2.54	50	99.1	90	110	
Pb206	206	1	He	101.093	2.087	300324	2.54	100	101.1	1	10000	
Pb207	207	1	He	101.098	1.784	257231	1.78	100	101.1	1	10000	
Pb 208	208	1	He	101.319	2.193	1156015	2.66	100	101.3	90	110	
U 238	238	1	He	102.457	3.288	1087457	4.00	100	102.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7547787	1.52	7475944	100.96	80	120	
Sc_45	45	2	H2	41327773	4.01	44729383	92.40	80	120	
Ge_72	72	1	He	3894274	1.84	3950352	98.58	80	120	
Ge_72	72	2	H2	12995751	2.02	13199044	98.46	80	120	
In_115	115	1	He	4592001	1.23	4664305	98.45	80	120	
In_115	115	2	H2	12225552	0.79	12147161	100.65	80	120	
Tm_169	169	1	He	4738775	1.18	4835424	98.00	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	133_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:01:10-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.266	18.9	150	6.2	10	
Be 9	9	2	H2	0.017	24.1	3	22.9	1	
Na 23	23	1	He	4.344	20.1	29424	3.3	50	
Mg 24	24	1	He	0.658	13.0	637	7.0	50	
Al 27	27	1	He	0.931	37.5	486	12.1	50	
P 31	31	1	He	-1.128	-135.8	65	24.0	50	
K 39	39	1	He	7.991	38.9	76668	0.7	50	
Ca 40	40	2	H2	1.582	36.8	39981	7.8	50	
Ti 47	47	1	He	0.010	247.6	5	57.3	5	
V 51	51	1	He	-0.298	-4.4	603	7.0	10	
Cr 52	52	1	He	-0.006	-421.0	3954	1.4	2	
Mn 55	55	1	He	0.011	60.3	131	15.3	1	
Fe 56	56	1	He	0.881	19.7	7082	9.8	50	
Co 59	59	1	He	0.007	49.8	59	34.1	1	
Ni 60	60	1	He	0.013	22.8	46	11.5	2	
Cu 63	63	1	He	0.272	5.6	1372	2.1	2	
Zn 66	66	1	He	0.059	91.1	238	11.9	5	
As 75	75	1	He	-0.110	-31.5	326	1.7	2	
Se 78	78	2	H2	0.027	78.2	20	25.6	2	
Sr 88	88	1	He	0.018	30.8	265	8.5	5	
Mo 95	95	1	He	0.073	29.3	169	25.7	2	
Ag 107	107	1	He	0.001	49.5	73	0.0	1	
Cd 111	111	1	He	0.012	15.3	16	12.5	1	
Sn 118	118	1	He	0.067	53.6	958	8.0	10	
Sb 121	121	1	He	-0.802	-4.1	1037	9.0	2	
Ba 137	137	1	He	0.015	22.4	37	9.1	1	
Ce 140	140	1	He	0.006	33.3	127	23.4	5	
Gd 157	157	1	He	0.007	80.6	23	75.6	1	
Au 197	197	1	He	0.090	18.6	379	20.1	5	
Tl 205	205	1	He	0.003	72.7	110	18.2	1	
Pb206	206	1	He	0.006	91.3	133	13.9	1	
Pb207	207	1	He	0.004	171.9	101	18.7	1	
Pb 208	208	1	He	0.011	25.7	502	8.0	1	
U 238	238	1	He	0.018	7.7	200	7.3	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7671565	2.61	7475944	102.62	80	120	
Sc_45	45	2	H2	42073963	4.48	44729383	94.06	80	120	
Ge_72	72	1	He	4058841	3.00	3950352	102.75	80	120	
Ge_72	72	2	H2	13032399	1.75	13199044	98.74	80	120	
In_115	115	1	He	4675804	2.24	4664305	100.25	80	120	
In_115	115	2	H2	12496085	2.15	12147161	102.87	80	120	
Tm_169	169	1	He	4796252	3.05	4835424	99.19	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	134_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:04:45-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	113.228	3.732	27882	5.02	100	113.2	90	110	> +/- 10%
Be 9	9	2	H2	109.102	2.735	19064	3.92	100	109.1	90	110	
Na 23	23	1	He	5073.937	2.770	3918366	2.28	5100	99.5	90	110	
Mg 24	24	1	He	5017.497	1.439	2040032	0.97	5100	98.4	90	110	
Al 27	27	1	He	4875.039	2.587	945788	2.14	5100	95.6	90	110	
P 31	31	1	He	4841.363	1.845	54741	1.50	5000	96.8	90	110	
K 39	39	1	He	4949.242	0.839	2379432	0.95	5100	97.0	90	110	
Ca 40	40	2	H2	5136.929	8.475	19143461	9.73	5100	100.7	90	110	
Ti 47	47	1	He	198.995	2.874	25486	2.39	200	99.5	90	110	
V 51	51	1	He	99.601	3.148	326193	2.64	100	99.6	90	110	
Cr 52	52	1	He	100.473	2.989	395397	2.45	100	100.5	90	110	
Mn 55	55	1	He	99.094	2.352	270728	1.86	100	99.1	90	110	
Fe 56	56	1	He	5083.290	3.198	17156236	2.71	5100	99.7	90	110	
Co 59	59	1	He	100.002	2.162	550859	1.72	100	100.0	90	110	
Ni 60	60	1	He	101.094	3.076	139853	2.61	100	101.1	90	110	
Cu 63	63	1	He	100.557	2.249	368644	1.76	100	100.6	90	110	
Zn 66	66	1	He	101.429	2.917	63881	1.89	100	101.4	90	110	
As 75	75	1	He	99.164	2.403	43764	1.75	100	99.2	90	110	
Se 78	78	2	H2	104.827	2.548	26445	3.55	100	104.8	90	110	
Sr 88	88	1	He	99.508	2.578	378969	1.74	100	99.5	90	110	
Mo 95	95	1	He	200.697	3.530	390863	2.91	200	100.3	90	110	
Ag 107	107	1	He	50.555	3.639	273773	2.51	50	101.1	90	110	
Cd 111	111	1	He	100.429	4.445	90058	3.43	100	100.4	90	110	
Sn 118	118	1	He	100.994	3.142	238039	2.01	100	101.0	90	110	
Sb 121	121	1	He	51.984	4.001	140708	2.80	50	104.0	90	110	
Ba 137	137	1	He	100.497	3.162	117605	2.03	100	100.5	90	110	
Ce 140	140	1	He	101.878	2.851	1441368	1.73	100	101.9	90	110	
Gd 157	157	1	He	101.098	2.572	291782	1.98	100	101.1	90	110	
Au 197	197	1	He	102.998	2.263	384262	1.79	100	103.0	90	110	
Tl 205	205	1	He	50.001	2.548	420086	2.39	50	100.0	90	110	
Pb206	206	1	He	103.010	2.304	300964	2.16	100	103.0	1	10000	
Pb207	207	1	He	102.186	3.373	255703	2.88	100	102.2	1	10000	
Pb 208	208	1	He	102.920	2.667	1154836	2.31	100	102.9	90	110	
U 238	238	1	He	103.934	2.867	1084773	2.58	100	103.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7638427	0.51	7475944	102.17	80	120	
Sc_45	45	2	H2	41284956	1.33	44729383	92.30	80	120	
Ge_72	72	1	He	3965944	1.09	3950352	100.39	80	120	
Ge_72	72	2	H2	12619752	1.16	13199044	95.61	80	120	
In_115	115	1	He	4535712	1.12	4664305	97.24	80	120	
In_115	115	2	H2	12210868	0.58	12147161	100.52	80	120	
Tm_169	169	1	He	4660885	0.87	4835424	96.39	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	135_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:08:12-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.137	34.2	118	12.9	10	
Be 9	9	2	H2	0.019	48.0	4	41.7	1	
Na 23	23	1	He	1.559	95.4	27344	2.9	50	
Mg 24	24	1	He	0.492	10.0	571	5.9	50	
Al 27	27	1	He	0.802	37.5	464	15.0	50	
P 31	31	1	He	0.010	6897.8	78	8.9	50	
K 39	39	1	He	2.864	159.3	74481	2.0	50	
Ca 40	40	2	H2	0.838	24.9	37136	6.5	50	
Ti 47	47	1	He	0.031	104.7	8	50.0	5	
V 51	51	1	He	-0.257	-4.0	741	3.1	10	
Cr 52	52	1	He	-0.017	-220.4	3922	1.5	2	
Mn 55	55	1	He	-0.002	-439.3	95	30.6	1	
Fe 56	56	1	He	0.633	25.3	6256	9.5	50	
Co 59	59	1	He	0.009	60.3	72	46.2	1	
Ni 60	60	1	He	0.009	149.7	41	49.5	2	
Cu 63	63	1	He	0.231	5.1	1225	4.3	2	
Zn 66	66	1	He	0.047	159.8	228	16.7	5	
As 75	75	1	He	-0.105	-33.3	326	3.6	2	
Se 78	78	2	H2	0.038	43.0	23	17.8	2	
Sr 88	88	1	He	0.009	69.7	229	13.0	5	
Mo 95	95	1	He	0.057	18.7	137	12.7	2	
Ag 107	107	1	He	0.001	233.4	77	23.0	1	
Cd 111	111	1	He	0.007	100.4	11	57.3	1	
Sn 118	118	1	He	0.055	89.0	912	13.8	10	
Sb 121	121	1	He	-0.801	-2.4	1021	6.2	2	
Ba 137	137	1	He	0.016	80.6	38	40.8	1	
Ce 140	140	1	He	0.008	33.8	146	26.8	5	
Gd 157	157	1	He	0.006	65.6	20	60.1	1	
Au 197	197	1	He	0.078	24.5	324	24.8	5	
Tl 205	205	1	He	0.005	20.6	124	10.1	1	
Pb206	206	1	He	-0.004	-83.1	103	11.6	1	
Pb207	207	1	He	0.014	82.0	123	20.4	1	
Pb 208	208	1	He	0.012	25.7	508	10.4	1	
U 238	238	1	He	0.020	12.4	222	15.2	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7693588	2.44	7475944	102.91	80	120	
Sc_45	45	2	H2	42032581	4.46	44729383	93.97	80	120	
Ge_72	72	1	He	4032230	4.92	3950352	102.07	80	120	
Ge_72	72	2	H2	12954432	1.85	13199044	98.15	80	120	
In_115	115	1	He	4592773	1.39	4664305	98.47	80	120	
In_115	115	2	H2	12550773	3.64	12147161	103.32	80	120	
Tm_169	169	1	He	4699396	3.50	4835424	97.19	80	120	

Sample Report

Sample Table

Sample Name	320-22811-C-9-D
Data File Name	136SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:11:47-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	2.042	2.042	6.15	583	7.93		2000	2000	
Be 9	9	2	H2	0.016	0.016	28.01	3	24.12		2000	2000	
B 11	11	2	H2	64.723	64.723	3.19	13263	6.10		10000	10000	
Na 23	23	1	He	23672.543	23672.543	4.05	17978071	3.89		100000	100000	
Mg 24	24	1	He	9998.880	9998.880	6.92	4017811	6.50		100000	100000	
Al 27	27	1	He	4.240	4.240	14.50	1113	10.15		100000	100000	
P 31	31	1	He	8.009	8.009	38.30	166	20.90		100000	100000	
K 39	39	1	He	5197.439	5197.439	3.50	2466442	3.36		100000	100000	
Ca 40	40	2	H2	55670.480	55670.480	7.06	207481595	11.39		100000	100000	
Ti 47	47	1	He	0.220	0.220	50.97	32	45.07		2000	2000	
V 51	51	1	He	-0.173	-0.173	-1.39	999	1.03		2000	2000	
Cr 52	52	1	He	0.220	0.220	12.04	4765	1.25		2000	2000	
Mn 55	55	1	He	89.515	89.515	3.74	241771	3.62		22000	22000	
Fe 56	56	1	He	683.226	683.226	4.34	2282970	4.04		100000	100000	
Co 59	59	1	He	1.276	1.276	5.68	6967	5.71		2000	2000	
Ni 60	60	1	He	1.366	1.366	7.64	1895	7.98		2000	2000	
Cu 63	63	1	He	0.203	0.203	7.64	1102	5.70		2000	2000	
Zn 66	66	1	He	1.739	1.739	3.04	1270	4.62		2000	2000	
As 75	75	1	He	5.367	5.367	3.37	2676	2.47		2000	2000	
Se 78	78	2	H2	0.024	0.024	53.90	19	15.46		2000	2000	
Sr 88	88	1	He	140.441	140.441	1.39	527175	2.87		2000	2000	
Mo 95	95	1	He	0.483	0.483	9.29	951	11.19		2000	2000	
Ag 107	107	1	He	0.006	0.006	98.13	100	29.62		500	500	
Cd 111	111	1	He	0.005	0.005	149.96	9	70.50		2000	2000	
Sn 118	118	1	He	0.148	0.148	22.17	1126	5.40		2000	2000	
Sb 121	121	1	He	-0.905	-0.905	-3.53	738	9.91		2000	2000	
Ba 137	137	1	He	14.209	14.209	6.40	16755	5.71		2000	2000	
Ce 140	140	1	He	0.012	0.012	23.35	203	17.73		2000	2000	
Gd 157	157	1	He	0.006	0.006	112.02	19	100.37		2000	2000	
Au 197	197	1	He	0.037	0.037	31.56	172	26.28		2000	2000	
Tl 205	205	1	He	-0.001	-0.001	-381.62	77	38.65		500	500	
Pb206	206	1	He	0.045	0.045	19.82	248	8.96		12000	12000	
Pb207	207	1	He	0.044	0.044	24.14	201	15.04		12000	12000	
Pb 208	208	1	He	0.051	0.051	8.99	959	5.92		12000	12000	
U 238	238	1	He	0.142	0.142	3.70	1523	5.69		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7550891	0.91	7475944	101.00	80	120	
Sc_45	45	2	H2	41311091	5.01	44729383	92.36	80	120	
Ge_72	72	1	He	3908631	2.04	3950352	98.94	80	120	
Ge_72	72	2	H2	12755522	2.72	13199044	96.64	80	120	
In_115	115	1	He	4566680	1.83	4664305	97.91	80	120	
In_115	115	2	H2	11926848	1.00	12147161	98.19	80	120	
Tm_169	169	1	He	4748703	2.19	4835424	98.21	80	120	

Sample Report

Sample Table

Sample Name	sd 320-22811-C-9-D@5
Data File Name	137SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:15:15-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.544	0.544	12.45	218	2.38		2000	2000	
Be 9	9	2	H2	0.008	0.008	28.67	2	17.32		2000	2000	
B 11	11	2	H2	28.230	28.230	4.54	7953	3.63		10000	10000	
Na 23	23	1	He	4855.887	4855.887	3.13	3734958	2.81		100000	100000	
Mg 24	24	1	He	2013.765	2013.765	3.31	815415	2.97		100000	100000	
Al 27	27	1	He	1.203	1.203	27.09	535	11.92		100000	100000	
P 31	31	1	He	-0.040	-0.040	-2871.47	77	16.97		100000	100000	
K 39	39	1	He	1022.961	1022.961	3.68	547013	2.86		100000	100000	
Ca 40	40	2	H2	11149.984	11149.984	5.81	42210073	10.53		100000	100000	
Ti 47	47	1	He	0.067	0.067	13.75	13	9.12		2000	2000	
V 51	51	1	He	-0.221	-0.221	-1.66	851	1.49		2000	2000	
Cr 52	52	1	He	-0.010	-0.010	-61.22	3906	0.28		2000	2000	
Mn 55	55	1	He	17.896	17.896	3.85	48762	3.50		22000	22000	
Fe 56	56	1	He	133.728	133.728	3.81	453338	3.44		100000	100000	
Co 59	59	1	He	0.247	0.247	1.71	1373	1.88		2000	2000	
Ni 60	60	1	He	0.312	0.312	10.22	457	9.72		2000	2000	
Cu 63	63	1	He	0.169	0.169	5.57	984	3.78		2000	2000	
Zn 66	66	1	He	0.368	0.368	15.99	427	10.70		2000	2000	
As 75	75	1	He	1.077	1.077	10.56	837	6.93		2000	2000	
Se 78	78	2	H2	0.024	0.024	73.59	19	22.94		2000	2000	
Sr 88	88	1	He	28.393	28.393	1.17	108155	2.73		2000	2000	
Mo 95	95	1	He	0.102	0.102	15.08	222	11.46		2000	2000	
Ag 107	107	1	He	0.000	0.000	271.91	70	4.76		500	500	
Cd 111	111	1	He	0.008	0.008	48.29	12	28.87		2000	2000	
Sn 118	118	1	He	0.000	0.000	5348.81	784	6.62		2000	2000	
Sb 121	121	1	He	-0.892	-0.892	-3.18	782	10.95		2000	2000	
Ba 137	137	1	He	2.898	2.898	5.17	3464	5.15		2000	2000	
Ce 140	140	1	He	0.001	0.001	165.66	46	37.54		2000	2000	
Gd 157	157	1	He	0.000	0.000	-183.19	1	173.21		2000	2000	
Au 197	197	1	He	0.013	0.013	26.33	81	15.56		2000	2000	
Tl 205	205	1	He	-0.005	-0.005	-7.83	39	9.89		500	500	
Pb206	206	1	He	0.012	0.012	105.70	150	25.63		12000	12000	
Pb207	207	1	He	0.012	0.012	58.06	120	15.47		12000	12000	
Pb 208	208	1	He	0.019	0.019	36.63	581	13.82		12000	12000	
U 238	238	1	He	0.029	0.029	8.41	316	7.03		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7605376	0.35	7475944	101.73	80	120	
Sc_45	45	2	H2	41941091	5.31	44729383	93.77	80	120	
Ge_72	72	1	He	3961004	2.42	3950352	100.27	80	120	
Ge_72	72	2	H2	13026472	1.66	13199044	98.69	80	120	
In_115	115	1	He	4607081	1.23	4664305	98.77	80	120	
In_115	115	2	H2	12407558	1.46	12147161	102.14	80	120	
Tm_169	169	1	He	4741298	1.24	4835424	98.05	80	120	

Sample Table

Sample Name	pds 320-22811-C-9-D
Data File Name	138SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:18:47-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	442.994	442.994	1.66	106652	5.13		2000	2000	
Be 9	9	2	H2	432.243	432.243	1.25	74009	4.78		2000	2000	
B 11	11	2	H2	2153.319	2153.319	2.81	317020	6.38		10000	10000	
Na 23	23	1	He	24745.603	24745.603	1.22	18128993	2.46		100000	100000	
Mg 24	24	1	He	11578.621	11578.621	1.68	4489699	3.42		100000	100000	
Al 27	27	1	He	2154.469	2154.469	2.06	398860	3.80		100000	100000	
P 31	31	1	He	2011.850	2011.850	1.61	21739	3.25		100000	100000	
K 39	39	1	He	6945.933	6945.933	2.15	3156722	3.30		100000	100000	
Ca 40	40	2	H2	56501.893	56501.893	5.88	206166581	9.81		100000	100000	
Ti 47	47	1	He	403.295	403.295	1.34	49261	3.11		2000	2000	
V 51	51	1	He	406.039	406.039	1.44	1263763	3.23		2000	2000	
Cr 52	52	1	He	422.288	422.288	1.57	1572559	1.39		2000	2000	
Mn 55	55	1	He	483.063	483.063	1.16	1258372	2.95		22000	22000	
Fe 56	56	1	He	2699.361	2699.361	1.42	8691737	3.26		100000	100000	
Co 59	59	1	He	425.354	425.354	5.05	2235418	6.59		2000	2000	
Ni 60	60	1	He	401.250	401.250	2.12	529415	3.86		2000	2000	
Cu 63	63	1	He	406.536	406.536	2.91	1420581	4.46		2000	2000	
Zn 66	66	1	He	392.248	392.248	1.91	238623	3.55		2000	2000	
As 75	75	1	He	398.882	398.882	1.24	169335	3.13		2000	2000	
Se 78	78	2	H2	398.928	398.928	4.61	98756	5.82		2000	2000	
Sr 88	88	1	He	548.785	548.785	1.29	2022770	3.95		2000	2000	
Mo 95	95	1	He	421.358	421.358	1.27	794369	3.12		2000	2000	
Ag 107	107	1	He	100.802	100.802	2.72	529633	3.18		500	500	
Cd 111	111	1	He	393.042	393.042	2.75	341995	3.01		2000	2000	
Sn 118	118	1	He	411.505	411.505	1.64	938953	3.07		2000	2000	
Sb 121	121	1	He	441.953	441.953	2.56	1138188	3.61		2000	2000	
Ba 137	137	1	He	417.006	417.006	2.75	473456	3.13		2000	2000	
Ce 140	140	1	He	401.713	401.713	4.73	5515239	5.35		2000	2000	
Gd 157	157	1	He	406.818	406.818	5.05	1142072	3.70		2000	2000	
Au 197	197	1	He	427.295	427.295	6.96	1549804	4.84		2000	2000	
Tl 205	205	1	He	102.515	102.515	4.73	837661	3.37		500	500	
Pb206	206	1	He	407.171	407.171	4.72	1156769	3.30		12000	12000	
Pb207	207	1	He	421.573	421.573	5.00	1025754	3.19		12000	12000	
Pb 208	208	1	He	425.746	425.746	6.43	4643678	4.20		12000	12000	
U 238	238	1	He	439.021	439.021	5.52	4455479	3.12		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7283843	1.87	7475944	97.43	80	120	
Sc_45	45	2	H2	40456932	4.16	44729383	90.45	80	120	
Ge_72	72	1	He	3838486	2.71	3950352	97.17	80	120	
Ge_72	72	2	H2	12386060	1.74	13199044	93.84	80	120	
In_115	115	1	He	4400435	2.19	4664305	94.34	80	120	
In_115	115	2	H2	11632755	2.72	12147161	95.77	80	120	
Tm_169	169	1	He	4536067	2.88	4835424	93.81	80	120	

Sample Report

Sample Table

Sample Name	320-22811-C-9-E MS
Data File Name	139SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:22:07-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	224.222	224.222	1.78	53670	4.91		2000	2000	
Be 9	9	2	H2	220.091	220.091	2.23	37442	5.05		2000	2000	
B 11	11	2	H2	1144.812	1144.812	2.99	169100	6.10		10000	10000	
Na 23	23	1	He	24452.473	24452.473	1.49	17707840	2.60		100000	100000	
Mg 24	24	1	He	10878.204	10878.204	1.28	4168511	1.92		100000	100000	
Al 27	27	1	He	981.629	981.629	1.45	179755	2.56		100000	100000	
P 31	31	1	He	1002.260	1002.260	1.70	10741	3.04		100000	100000	
K 39	39	1	He	6072.084	6072.084	1.53	2735974	2.10		100000	100000	
Ca 40	40	2	H2	58442.798	58442.798	7.36	211857957	10.64		100000	100000	
Ti 47	47	1	He	197.003	197.003	2.14	23787	3.43		2000	2000	
V 51	51	1	He	199.858	199.858	2.29	615607	3.64		2000	2000	
Cr 52	52	1	He	197.472	197.472	2.31	729063	3.57		2000	2000	
Mn 55	55	1	He	282.679	282.679	1.76	727875	2.95		22000	22000	
Fe 56	56	1	He	1678.589	1678.589	3.13	5344302	4.50		100000	100000	
Co 59	59	1	He	198.775	198.775	1.94	1032196	3.10		2000	2000	
Ni 60	60	1	He	198.402	198.402	1.37	258723	2.69		2000	2000	
Cu 63	63	1	He	198.209	198.209	1.80	684686	3.10		2000	2000	
Zn 66	66	1	He	196.992	196.992	2.10	117801	2.61		2000	2000	
As 75	75	1	He	201.732	201.732	1.34	84327	4.11		2000	2000	
Se 78	78	2	H2	199.194	199.194	3.42	49716	3.61		2000	2000	
Sr 88	88	1	He	335.673	335.673	2.28	1215089	2.53		2000	2000	
Mo 95	95	1	He	212.227	212.227	1.60	393118	3.64		2000	2000	
Ag 107	107	1	He	49.197	49.197	2.53	259310	2.70		500	500	
Cd 111	111	1	He	191.300	191.300	2.76	166971	2.99		2000	2000	
Sn 118	118	1	He	198.963	198.963	3.06	455696	3.25		2000	2000	
Sb 121	121	1	He	213.951	213.951	3.03	554164	3.06		2000	2000	
Ba 137	137	1	He	212.523	212.523	2.92	242035	3.04		2000	2000	
Ce 140	140	1	He	204.011	204.011	2.71	2809091	2.81		2000	2000	
Gd 157	157	1	He	200.993	200.993	0.60	564279	2.94		2000	2000	
Au 197	197	1	He	200.746	200.746	1.76	728372	2.67		2000	2000	
Tl 205	205	1	He	49.970	49.970	1.98	408354	3.45		500	500	
Pb206	206	1	He	199.752	199.752	1.79	567492	2.73		12000	12000	
Pb207	207	1	He	208.491	208.491	2.03	507402	3.46		12000	12000	
Pb 208	208	1	He	204.613	204.613	1.66	2232641	2.71		12000	12000	
U 238	238	1	He	222.495	222.495	0.91	2259027	3.45		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7199410	1.37	7475944	96.30	80	120	
Sc_45	45	2	H2	40188016	3.19	44729383	89.85	80	120	
Ge_72	72	1	He	3772277	4.13	3950352	95.49	80	120	
Ge_72	72	2	H2	12491051	1.88	13199044	94.64	80	120	
In_115	115	1	He	4413377	0.47	4664305	94.62	80	120	
In_115	115	2	H2	12035912	1.48	12147161	99.08	80	120	
Tm_169	169	1	He	4533440	3.02	4835424	93.75	80	120	

Sample Report

Sample Table

Sample Name	320-22811-C-9-F MSD
Data File Name	140SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:25:32-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	218.274	218.274	2.34	52111	5.73		2000	2000	
Be 9	9	2	H2	213.997	213.997	2.87	36316	6.37		2000	2000	
B 11	11	2	H2	1112.610	1112.610	3.35	164060	7.45		10000	10000	
Na 23	23	1	He	24249.111	24249.111	0.64	18139127	2.60		100000	100000	
Mg 24	24	1	He	10718.445	10718.445	4.48	4242886	5.11		100000	100000	
Al 27	27	1	He	977.794	977.794	1.66	184960	3.22		100000	100000	
P 31	31	1	He	1004.253	1004.253	2.91	11111	1.40		100000	100000	
K 39	39	1	He	6026.037	6026.037	0.81	2805378	2.61		100000	100000	
Ca 40	40	2	H2	55868.220	55868.220	6.75	202105931	11.37		100000	100000	
Ti 47	47	1	He	198.413	198.413	1.87	24742	2.75		2000	2000	
V 51	51	1	He	198.065	198.065	1.00	630059	2.13		2000	2000	
Cr 52	52	1	He	199.254	199.254	0.90	759774	2.79		2000	2000	
Mn 55	55	1	He	279.296	279.296	1.07	742753	2.18		22000	22000	
Fe 56	56	1	He	1657.868	1657.868	2.20	5449287	0.93		100000	100000	
Co 59	59	1	He	197.797	197.797	0.86	1060781	1.91		2000	2000	
Ni 60	60	1	He	196.330	196.330	1.20	264429	2.41		2000	2000	
Cu 63	63	1	He	196.322	196.322	1.11	700420	2.38		2000	2000	
Zn 66	66	1	He	190.398	190.398	3.19	120484	2.54		2000	2000	
As 75	75	1	He	195.948	195.948	3.88	86641	3.16		2000	2000	
Se 78	78	2	H2	193.192	193.192	3.03	48047	4.54		2000	2000	
Sr 88	88	1	He	322.665	322.665	2.99	1235961	2.29		2000	2000	
Mo 95	95	1	He	209.094	209.094	2.84	409722	2.13		2000	2000	
Ag 107	107	1	He	49.788	49.788	4.58	267880	3.45		500	500	
Cd 111	111	1	He	195.610	195.610	3.72	174287	2.47		2000	2000	
Sn 118	118	1	He	200.334	200.334	3.49	468387	2.12		2000	2000	
Sb 121	121	1	He	215.210	215.210	3.50	569048	2.31		2000	2000	
Ba 137	137	1	He	211.728	211.728	3.30	246169	2.22		2000	2000	
Ce 140	140	1	He	205.407	205.407	2.22	2887668	1.15		2000	2000	
Gd 157	157	1	He	195.853	195.853	2.11	579484	2.09		2000	2000	
Au 197	197	1	He	195.815	195.815	2.74	748869	2.67		2000	2000	
Tl 205	205	1	He	49.156	49.156	1.64	423362	1.64		500	500	
Pb206	206	1	He	196.315	196.315	2.48	587854	2.31		12000	12000	
Pb207	207	1	He	202.280	202.280	2.53	518825	2.48		12000	12000	
Pb 208	208	1	He	199.934	199.934	2.03	2299417	1.91		12000	12000	
U 238	238	1	He	213.070	213.070	1.59	2279698	1.42		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7436563	1.99	7475944	99.47	80	120	
Sc_45	45	2	H2	40091159	4.83	44729383	89.63	80	120	
Ge_72	72	1	He	3990220	0.73	3950352	101.01	80	120	
Ge_72	72	2	H2	12442034	1.63	13199044	94.26	80	120	
In_115	115	1	He	4506904	1.42	4664305	96.63	80	120	
In_115	115	2	H2	11809909	1.80	12147161	97.22	80	120	
Tm_169	169	1	He	4777679	0.42	4835424	98.81	80	120	

Sample Report

Sample Table

Sample Name	320-22811-C-10-B
Data File Name	141SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:28:57-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	2.112	2.112	3.20	601	6.74		2000	2000	
Be 9	9	2	H2	0.022	0.022	58.97	4	55.43		2000	2000	
B 11	11	2	H2	83.952	83.952	2.37	16124	5.55		10000	10000	
Na 23	23	1	He	22915.852	22915.852	3.09	16884007	1.94		100000	100000	
Mg 24	24	1	He	9908.100	9908.100	3.67	3862253	1.70		100000	100000	
Al 27	27	1	He	16.607	16.607	1.92	3381	0.74		100000	100000	
P 31	31	1	He	9.551	9.551	36.13	177	19.45		100000	100000	
K 39	39	1	He	5038.113	5038.113	5.31	2321018	3.97		100000	100000	
Ca 40	40	2	H2	52781.483	52781.483	5.69	196776741	10.52		100000	100000	
Ti 47	47	1	He	0.337	0.337	16.45	45	15.49		2000	2000	
V 51	51	1	He	-0.143	-0.143	-19.60	1063	8.75		2000	2000	
Cr 52	52	1	He	0.307	0.307	6.41	4949	0.95		2000	2000	
Mn 55	55	1	He	86.521	86.521	4.63	226669	3.42		22000	22000	
Fe 56	56	1	He	672.899	672.899	4.57	2181234	3.62		100000	100000	
Co 59	59	1	He	1.078	1.078	3.15	5717	3.47		2000	2000	
Ni 60	60	1	He	1.420	1.420	6.25	1909	3.96		2000	2000	
Cu 63	63	1	He	0.239	0.239	4.84	1193	1.95		2000	2000	
Zn 66	66	1	He	1.843	1.843	3.68	1317	0.61		2000	2000	
As 75	75	1	He	4.981	4.981	5.29	2479	5.50		2000	2000	
Se 78	78	2	H2	0.077	0.077	65.71	32	38.98		2000	2000	
Sr 88	88	1	He	133.688	133.688	4.41	495256	2.79		2000	2000	
Mo 95	95	1	He	0.500	0.500	4.63	970	3.15		2000	2000	
Ag 107	107	1	He	0.009	0.009	43.26	113	15.56		500	500	
Cd 111	111	1	He	0.023	0.023	57.97	25	47.59		2000	2000	
Sn 118	118	1	He	0.307	0.307	7.76	1482	1.70		2000	2000	
Sb 121	121	1	He	-0.892	-0.892	-2.32	762	8.58		2000	2000	
Ba 137	137	1	He	13.668	13.668	7.39	15887	5.24		2000	2000	
Ce 140	140	1	He	0.034	0.034	17.30	513	14.06		2000	2000	
Gd 157	157	1	He	0.018	0.018	24.12	56	21.08		2000	2000	
Au 197	197	1	He	0.117	0.117	19.70	477	16.39		2000	2000	
Tl 205	205	1	He	0.010	0.010	18.97	169	7.98		500	500	
Pb206	206	1	He	0.053	0.053	12.62	274	8.79		12000	12000	
Pb207	207	1	He	0.071	0.071	2.82	273	3.23		12000	12000	
Pb 208	208	1	He	0.068	0.068	7.93	1148	3.24		12000	12000	
U 238	238	1	He	0.170	0.170	6.15	1826	5.59		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7327611	2.42	7475944	98.02	80	120	
Sc_45	45	2	H2	41324031	4.89	44729383	92.39	80	120	
Ge_72	72	1	He	3860215	2.79	3950352	97.72	80	120	
Ge_72	72	2	H2	12635283	1.60	13199044	95.73	80	120	
In_115	115	1	He	4504447	2.19	4664305	96.57	80	120	
In_115	115	2	H2	12249051	0.58	12147161	100.84	80	120	
Tm_169	169	1	He	4777058	2.24	4835424	98.79	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	142_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:32:23-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	109.942	1.700	26487	7.07	100	109.9	90	110	
Be 9	9	2	H2	104.842	1.834	17925	7.19	100	104.8	90	110	
Na 23	23	1	He	5011.609	2.034	3729689	4.14	5100	98.3	90	110	
Mg 24	24	1	He	4997.922	3.701	1958365	5.60	5100	98.0	90	110	
Al 27	27	1	He	4830.223	0.570	902875	3.15	5100	94.7	90	110	
P 31	31	1	He	4752.912	0.432	51777	3.07	5000	95.1	90	110	
K 39	39	1	He	4957.355	2.092	2295398	2.40	5100	97.2	90	110	
Ca 40	40	2	H2	5099.044	7.721	18616567	12.87	5100	100.0	90	110	
Ti 47	47	1	He	195.495	1.957	24122	3.47	200	97.7	90	110	
V 51	51	1	He	98.730	1.271	311557	3.43	100	98.7	90	110	
Cr 52	52	1	He	99.232	1.688	376375	4.21	100	99.2	90	110	
Mn 55	55	1	He	98.710	1.178	259862	3.82	100	98.7	90	110	
Fe 56	56	1	He	5049.276	0.421	16417154	2.33	5100	99.0	90	110	
Co 59	59	1	He	98.845	1.354	524611	3.53	100	98.8	90	110	
Ni 60	60	1	He	99.568	1.613	132741	4.28	100	99.6	90	110	
Cu 63	63	1	He	99.376	1.436	351072	4.10	100	99.4	90	110	
Zn 66	66	1	He	101.469	3.211	61238	3.47	100	101.5	90	110	
As 75	75	1	He	98.997	3.411	41869	4.19	100	99.0	90	110	
Se 78	78	2	H2	101.693	1.885	25185	5.65	100	101.7	90	110	
Sr 88	88	1	He	100.229	4.156	365805	4.80	100	100.2	90	110	
Mo 95	95	1	He	203.533	3.789	379867	4.45	200	101.8	90	110	
Ag 107	107	1	He	49.431	1.934	268265	3.20	50	98.9	90	110	
Cd 111	111	1	He	97.113	3.234	87280	4.31	100	97.1	90	110	
Sn 118	118	1	He	98.586	3.476	232890	4.48	100	98.6	90	110	
Sb 121	121	1	He	50.713	2.391	137644	3.50	50	101.4	90	110	
Ba 137	137	1	He	98.632	3.045	115652	3.37	100	98.6	90	110	
Ce 140	140	1	He	100.410	4.808	1424047	6.30	100	100.4	90	110	
Gd 157	157	1	He	99.548	4.189	288446	3.98	100	99.5	90	110	
Au 197	197	1	He	101.121	3.842	378741	3.59	100	101.1	90	110	
Tl 205	205	1	He	49.277	4.139	415628	3.96	50	98.6	90	110	
Pb206	206	1	He	100.713	5.004	295399	4.79	100	100.7	1	10000	
Pb207	207	1	He	100.606	4.222	252752	4.02	100	100.6	1	10000	
Pb 208	208	1	He	101.515	4.386	1143548	4.16	100	101.5	90	110	
U 238	238	1	He	103.602	4.371	1085552	4.16	100	103.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7358391	2.75	7475944	98.43	80	120	
Sc_45	45	2	H2	40377660	5.42	44729383	90.27	80	120	
Ge_72	72	1	He	3799563	1.32	3950352	96.18	80	120	
Ge_72	72	2	H2	12384669	3.76	13199044	93.83	80	120	
In_115	115	1	He	4543726	1.62	4664305	97.41	80	120	
In_115	115	2	H2	12248840	2.38	12147161	100.84	80	120	
Tm_169	169	1	He	4679106	0.37	4835424	96.77	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	143_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:35:50-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.130	14.9	115	7.7	10	
Be 9	9	2	H2	0.011	56.2	2	49.5	1	
Na 23	23	1	He	2.553	12.5	26523	2.2	50	
Mg 24	24	1	He	0.425	27.9	513	11.6	50	
Al 27	27	1	He	0.835	7.3	443	1.4	50	
P 31	31	1	He	-1.231	-125.5	61	30.6	50	
K 39	39	1	He	2.669	114.1	70158	1.2	50	
Ca 40	40	2	H2	0.595	76.1	36116	7.3	50	
Ti 47	47	1	He	0.023	79.9	7	34.6	5	
V 51	51	1	He	-0.193	-4.1	896	1.2	10	
Cr 52	52	1	He	-0.038	-52.2	3624	1.8	2	
Mn 55	55	1	He	0.002	78.1	101	6.9	1	
Fe 56	56	1	He	0.470	17.1	5383	7.7	50	
Co 59	59	1	He	0.007	44.2	55	29.8	1	
Ni 60	60	1	He	-0.009	-44.1	15	31.5	2	
Cu 63	63	1	He	0.227	6.6	1144	7.3	2	
Zn 66	66	1	He	0.013	339.6	198	14.7	5	
As 75	75	1	He	-0.078	-67.2	322	6.6	2	
Se 78	78	2	H2	0.050	34.8	25	16.4	2	
Sr 88	88	1	He	0.014	73.7	238	16.2	5	
Mo 95	95	1	He	0.056	21.4	128	17.4	2	
Ag 107	107	1	He	0.002	103.0	83	16.0	1	
Cd 111	111	1	He	0.007	16.8	11	10.2	1	
Sn 118	118	1	He	0.105	7.2	1043	1.8	10	
Sb 121	121	1	He	-0.851	-0.3	899	0.6	2	
Ba 137	137	1	He	0.009	59.9	30	22.2	1	
Ce 140	140	1	He	0.009	23.1	164	18.3	5	
Gd 157	157	1	He	0.006	30.1	19	27.0	1	
Au 197	197	1	He	0.079	22.7	326	21.3	5	
Tl 205	205	1	He	0.004	59.0	116	17.4	1	
Pb206	206	1	He	0.011	45.7	146	10.8	1	
Pb207	207	1	He	0.018	25.9	133	9.0	1	
Pb 208	208	1	He	0.018	6.6	572	1.8	1	
U 238	238	1	He	0.019	30.1	206	29.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7256132	2.97	7475944	97.06	80	120	
Sc_45	45	2	H2	41927121	4.32	44729383	93.74	80	120	
Ge_72	72	1	He	3835688	1.21	3950352	97.10	80	120	
Ge_72	72	2	H2	12762917	1.46	13199044	96.70	80	120	
In_115	115	1	He	4648301	1.10	4664305	99.66	80	120	
In_115	115	2	H2	12154898	1.66	12147161	100.06	80	120	
Tm_169	169	1	He	4693232	0.86	4835424	97.06	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	144_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:39:24-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	109.360	3.878	26328	5.96	100	109.4	90	110	
Be 9	9	2	H2	104.400	3.085	17834	5.20	100	104.4	90	110	
Na 23	23	1	He	5082.085	4.152	3745803	2.80	5100	99.6	90	110	
Mg 24	24	1	He	5078.269	5.385	1970230	3.83	5100	99.6	90	110	
Al 27	27	1	He	4971.308	3.682	920494	1.96	5100	97.5	90	110	
P 31	31	1	He	4998.208	3.305	53936	1.59	5000	100.0	90	110	
K 39	39	1	He	5118.490	5.359	2345658	3.50	5100	100.4	90	110	
Ca 40	40	2	H2	4974.758	10.309	18134861	12.50	5100	97.5	90	110	
Ti 47	47	1	He	200.792	5.125	24540	3.41	200	100.4	90	110	
V 51	51	1	He	100.765	3.799	314947	2.11	100	100.8	90	110	
Cr 52	52	1	He	101.346	3.213	380658	1.62	100	101.3	90	110	
Mn 55	55	1	He	100.175	4.064	261196	2.43	100	100.2	90	110	
Fe 56	56	1	He	5241.470	3.544	16884411	1.89	5100	102.8	90	110	
Co 59	59	1	He	101.650	4.521	534354	2.81	100	101.7	90	110	
Ni 60	60	1	He	102.027	4.493	134699	2.79	100	102.0	90	110	
Cu 63	63	1	He	102.426	4.140	358355	2.51	100	102.4	90	110	
Zn 66	66	1	He	101.031	2.079	62792	2.89	100	101.0	90	110	
As 75	75	1	He	98.388	1.030	42849	2.37	100	98.4	90	110	
Se 78	78	2	H2	101.695	5.777	25202	4.88	100	101.7	90	110	
Sr 88	88	1	He	98.222	0.865	369117	2.04	100	98.2	90	110	
Mo 95	95	1	He	201.033	1.665	386364	2.92	200	100.5	90	110	
Ag 107	107	1	He	48.571	2.598	267723	2.37	50	97.1	90	110	
Cd 111	111	1	He	97.499	2.381	88992	2.03	100	97.5	90	110	
Sn 118	118	1	He	97.914	1.775	234913	1.47	100	97.9	90	110	
Sb 121	121	1	He	49.997	2.338	137872	2.31	50	100.0	90	110	
Ba 137	137	1	He	98.633	2.618	117480	2.43	100	98.6	90	110	
Ce 140	140	1	He	98.048	3.350	1411793	2.98	100	98.0	90	110	
Gd 157	157	1	He	99.757	3.604	292279	1.81	100	99.8	90	110	
Au 197	197	1	He	102.280	5.087	387287	3.26	100	102.3	90	110	
Tl 205	205	1	He	49.887	4.967	425395	3.22	50	99.8	90	110	
Pb206	206	1	He	102.095	5.023	302746	3.28	100	102.1	1	10000	
Pb207	207	1	He	100.508	4.685	255290	2.92	100	100.5	1	10000	
Pb 208	208	1	He	101.970	4.657	1161373	2.98	100	102.0	90	110	
U 238	238	1	He	102.490	3.598	1085918	2.04	100	102.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7292791	1.75	7475944	97.55	80	120	
Sc_45	45	2	H2	40350964	2.14	44729383	90.21	80	120	
Ge_72	72	1	He	3912645	1.61	3950352	99.05	80	120	
Ge_72	72	2	H2	12404375	1.90	13199044	93.98	80	120	
In_115	115	1	He	4615676	0.84	4664305	98.96	80	120	
In_115	115	2	H2	12021776	1.70	12147161	98.97	80	120	
Tm_169	169	1	He	4733108	1.86	4835424	97.88	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	145_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:42:52-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.107	51.3	108	10.0	10	
Be 9	9	2	H2	0.006	83.0	2	66.7	1	
Na 23	23	1	He	1.681	24.1	25718	0.6	50	
Mg 24	24	1	He	0.476	53.3	529	19.1	50	
Al 27	27	1	He	0.770	16.7	428	5.4	50	
P 31	31	1	He	0.209	888.1	75	26.6	50	
K 39	39	1	He	2.179	48.3	69501	0.6	50	
Ca 40	40	2	H2	0.526	72.7	35453	6.2	50	
Ti 47	47	1	He	0.029	87.4	7	41.7	5	
V 51	51	1	He	-0.210	-7.3	839	4.9	10	
Cr 52	52	1	He	-0.042	-25.4	3583	1.5	2	
Mn 55	55	1	He	0.006	103.8	111	15.2	1	
Fe 56	56	1	He	0.664	23.1	5962	8.8	50	
Co 59	59	1	He	0.012	41.6	79	32.4	1	
Ni 60	60	1	He	0.015	90.9	46	39.8	2	
Cu 63	63	1	He	0.238	14.4	1170	10.4	2	
Zn 66	66	1	He	0.010	204.8	199	6.5	5	
As 75	75	1	He	-0.069	-50.8	330	4.3	2	
Se 78	78	2	H2	0.044	120.2	24	56.3	2	
Sr 88	88	1	He	0.015	35.2	243	8.3	5	
Mo 95	95	1	He	0.063	18.4	143	15.3	2	
Ag 107	107	1	He	0.005	84.2	96	23.2	1	
Cd 111	111	1	He	0.007	108.4	11	60.3	1	
Sn 118	118	1	He	0.108	3.3	1041	2.0	10	
Sb 121	121	1	He	-0.844	-3.7	909	7.6	2	
Ba 137	137	1	He	0.013	71.3	34	31.1	1	
Ce 140	140	1	He	0.008	39.4	151	28.8	5	
Gd 157	157	1	He	0.011	15.6	34	14.8	1	
Au 197	197	1	He	0.099	11.4	396	10.2	5	
Tl 205	205	1	He	0.007	27.3	141	11.7	1	
Pb206	206	1	He	0.007	64.2	133	10.0	1	
Pb207	207	1	He	0.012	120.9	117	30.1	1	
Pb 208	208	1	He	0.013	37.1	504	10.6	1	
U 238	238	1	He	0.021	10.6	220	10.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7207925	0.69	7475944	96.41	80	120	
Sc_45	45	2	H2	41471963	4.63	44729383	92.72	80	120	
Ge_72	72	1	He	3887289	0.40	3950352	98.40	80	120	
Ge_72	72	2	H2	12751119	0.23	13199044	96.61	80	120	
In_115	115	1	He	4610467	1.56	4664305	98.85	80	120	
In_115	115	2	H2	12454794	1.36	12147161	102.53	80	120	
Tm_169	169	1	He	4625477	0.48	4835424	95.66	80	120	

Sample Table

Sample Name	320-22811-C-11-B
Data File Name	146SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:46:27-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	2.655	2.655	4.71	711	6.10		2000	2000	
Be 9	9	2	H2	0.022	0.022	72.06	4	68.23		2000	2000	
B 11	11	2	H2	65.418	65.418	3.35	12952	6.44		10000	10000	
Na 23	23	1	He	12393.956	12393.956	1.62	8919563	1.08		100000	100000	
Mg 24	24	1	He	30291.804	30291.804	1.25	11522839	2.54		100000	100000	
Al 27	27	1	He	5.204	5.204	7.06	1229	6.30		100000	100000	
P 31	31	1	He	7.225	7.225	19.62	149	9.16		100000	100000	
K 39	39	1	He	2345.569	2345.569	0.13	1090814	1.58		100000	100000	
Ca 40	40	2	H2	141357.706	141357.706	7.27	510403072	11.53		100000	100000	>LDR
Ti 47	47	1	He	0.197	0.197	92.51	27	78.92		2000	2000	
V 51	51	1	He	-0.284	-0.284	-6.32	605	10.81		2000	2000	
Cr 52	52	1	He	1.718	1.718	9.91	9963	4.80		2000	2000	
Mn 55	55	1	He	64.355	64.355	0.97	164549	2.05		22000	22000	
Fe 56	56	1	He	18562.269	18562.269	0.84	58608448	1.51		100000	100000	
Co 59	59	1	He	0.731	0.731	1.20	3783	0.98		2000	2000	
Ni 60	60	1	He	4.254	4.254	1.45	5532	2.37		2000	2000	
Cu 63	63	1	He	0.557	0.557	4.32	2257	4.21		2000	2000	
Zn 66	66	1	He	3.839	3.839	4.49	2454	3.38		2000	2000	
As 75	75	1	He	2.829	2.829	5.68	1510	3.04		2000	2000	
Se 78	78	2	H2	0.075	0.075	84.96	30	49.10		2000	2000	
Sr 88	88	1	He	376.480	376.480	1.62	1349261	1.27		2000	2000	
Mo 95	95	1	He	1.270	1.270	2.09	2350	3.13		2000	2000	
Ag 107	107	1	He	0.000	0.000	1600.19	68	51.66		500	500	
Cd 111	111	1	He	0.003	0.003	403.79	7	147.99		2000	2000	
Sn 118	118	1	He	0.093	0.093	25.23	947	2.46		2000	2000	
Sb 121	121	1	He	-0.908	-0.908	-2.50	693	5.46		2000	2000	
Ba 137	137	1	He	40.925	40.925	3.17	45810	2.64		2000	2000	
Ce 140	140	1	He	0.013	0.013	24.35	206	21.10		2000	2000	
Gd 157	157	1	He	0.005	0.005	105.08	17	91.67		2000	2000	
Au 197	197	1	He	0.028	0.028	27.55	138	22.35		2000	2000	
Tl 205	205	1	He	0.000	0.000	2137.62	84	8.22		500	500	
Pb206	206	1	He	0.052	0.052	22.16	269	13.66		12000	12000	
Pb207	207	1	He	0.060	0.060	23.79	241	13.85		12000	12000	
Pb 208	208	1	He	0.068	0.068	16.27	1143	9.81		12000	12000	
U 238	238	1	He	0.438	0.438	3.57	4670	2.40		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7146660	1.67	7475944	95.60	80	120	
Sc_45	45	2	H2	40015873	4.16	44729383	89.46	80	120	
Ge_72	72	1	He	3733239	1.32	3950352	94.50	80	120	
Ge_72	72	2	H2	12130756	2.48	13199044	91.91	80	120	
In_115	115	1	He	4338471	3.28	4664305	93.01	80	120	
In_115	115	2	H2	11912080	2.57	12147161	98.06	80	120	
Tm_169	169	1	He	4750440	1.15	4835424	98.24	80	120	

Sample Table

Sample Name	320-22811-C-12-B
Data File Name	147SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:49:51-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	1.049	1.049	17.63	326	10.50		2000	2000	
Be 9	9	2	H2	0.024	0.024	21.20	4	17.63		2000	2000	
B 11	11	2	H2	42.377	42.377	2.35	9585	4.44		10000	10000	
Na 23	23	1	He	9044.144	9044.144	2.34	6626753	3.41		100000	100000	
Mg 24	24	1	He	25061.890	25061.890	1.08	9694180	2.57		100000	100000	
Al 27	27	1	He	28.410	28.410	2.19	5531	1.21		100000	100000	
P 31	31	1	He	9.517	9.517	18.73	176	11.86		100000	100000	
K 39	39	1	He	4192.704	4192.704	2.34	1928635	3.68		100000	100000	
Ca 40	40	2	H2	155263.281	155263.281	4.54	557754613	9.21		100000	100000	>LDR
Ti 47	47	1	He	1.067	1.067	9.63	134	10.76		2000	2000	
V 51	51	1	He	-0.211	-0.211	-27.38	841	19.81		2000	2000	
Cr 52	52	1	He	0.074	0.074	35.69	4044	1.28		2000	2000	
Mn 55	55	1	He	1314.891	1314.891	0.40	3416816	1.91		22000	22000	
Fe 56	56	1	He	6870.649	6870.649	1.34	22060733	1.73		100000	100000	
Co 59	59	1	He	9.186	9.186	1.52	48164	2.66		2000	2000	
Ni 60	60	1	He	12.396	12.396	0.50	16338	1.05		2000	2000	
Cu 63	63	1	He	1.674	1.674	0.95	6185	2.16		2000	2000	
Zn 66	66	1	He	9.150	9.150	2.46	5748	2.57		2000	2000	
As 75	75	1	He	7.052	7.052	4.94	3339	3.80		2000	2000	
Se 78	78	2	H2	0.070	0.070	16.18	29	8.58		2000	2000	
Sr 88	88	1	He	170.287	170.287	3.34	627080	2.39		2000	2000	
Mo 95	95	1	He	2.422	2.422	2.84	4584	1.55		2000	2000	
Ag 107	107	1	He	0.002	0.002	196.51	79	29.98		500	500	
Cd 111	111	1	He	0.042	0.042	41.29	42	37.80		2000	2000	
Sn 118	118	1	He	0.154	0.154	22.44	1119	6.11		2000	2000	
Sb 121	121	1	He	-0.931	-0.931	-1.45	657	4.03		2000	2000	
Ba 137	137	1	He	86.168	86.168	2.82	99657	1.35		2000	2000	
Ce 140	140	1	He	0.839	0.839	2.73	11769	2.46		2000	2000	
Gd 157	157	1	He	0.102	0.102	16.88	297	17.00		2000	2000	
Au 197	197	1	He	0.037	0.037	57.81	168	48.11		2000	2000	
Tl 205	205	1	He	0.800	0.800	4.38	6824	2.76		500	500	
Pb206	206	1	He	0.122	0.122	20.75	471	16.48		12000	12000	
Pb207	207	1	He	0.137	0.137	26.87	433	21.99		12000	12000	
Pb 208	208	1	He	0.129	0.129	22.10	1814	18.34		12000	12000	
U 238	238	1	He	2.248	2.248	0.74	23570	2.34		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7266866	1.52	7475944	97.20	80	120	
Sc_45	45	2	H2	39839397	4.84	44729383	89.07	80	120	
Ge_72	72	1	He	3835939	1.49	3950352	97.10	80	120	
Ge_72	72	2	H2	12307159	1.78	13199044	93.24	80	120	
In_115	115	1	He	4482801	1.68	4664305	96.11	80	120	
In_115	115	2	H2	11545329	1.08	12147161	95.05	80	120	
Tm_169	169	1	He	4679872	1.61	4835424	96.78	80	120	

Sample Table

Sample Name	720-75353-G-1-A
Data File Name	148SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:53:14-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	63.917	63.917	5.01	15256	2.99		2000	2000	
Be 9	9	2	H2	0.003	0.003	150.26	1	91.65		2000	2000	
B 11	11	2	H2	6437.145	6437.145	4.17	928181	2.16		10000	10000	
Mg 24	24	1	He	2243661.648	2243661.648	3.41	941727872	0.29		100000	100000	>LDR
Al 27	27	1	He	7.320	7.320	7.97	1781	7.32		100000	100000	
P 31	31	1	He	1061.045	1061.045	1.75	12455	1.97		100000	100000	
K 39	39	1	He	4245.912	4245.912	0.89	2119721	3.22		100000	100000	
Ca 40	40	2	H2	562466.955	562466.955	5.08	2022921003	3.25		100000	100000	>LDR
Ti 47	47	1	He	0.825	0.825	3.12	113	1.02		2000	2000	
V 51	51	1	He	4.628	4.628	0.89	17211	3.34		2000	2000	
Cr 52	52	1	He	1.582	1.582	3.42	10466	4.59		2000	2000	
Mn 55	55	1	He	15810.390	15810.390	1.59	44606652	2.48		22000	22000	
Fe 56	56	1	He	10.916	10.916	10.53	42198	6.88		100000	100000	
Co 59	59	1	He	21.982	21.982	2.99	125054	0.71		2000	2000	
Ni 60	60	1	He	36.210	36.210	2.90	51749	0.72		2000	2000	
Cu 63	63	1	He	2.647	2.647	5.07	10389	1.73		2000	2000	
Zn 66	66	1	He	6.255	6.255	2.69	3487	2.03		2000	2000	
As 75	75	1	He	12.399	12.399	1.86	4899	2.99		2000	2000	
Se 78	78	2	H2	0.523	0.523	4.48	123	2.93		2000	2000	
Sr 88	88	1	He	13455.767	13455.767	2.37	43309887	2.07		2000	2000	>LDR
Mo 95	95	1	He	9.969	9.969	1.76	16443	3.97		2000	2000	
Ag 107	107	1	He	0.065	0.065	15.22	329	12.51		500	500	
Cd 111	111	1	He	0.329	0.329	7.01	235	5.40		2000	2000	
Sn 118	118	1	He	0.115	0.115	14.43	819	2.31		2000	2000	
Sb 121	121	1	He	0.050	0.050	122.58	2566	4.30		2000	2000	
Ba 137	137	1	He	97.471	97.471	2.31	89732	1.77		2000	2000	
Ce 140	140	1	He	0.051	0.051	8.59	593	6.90		2000	2000	
Gd 157	157	1	He	0.020	0.020	11.65	47	12.37		2000	2000	
Au 197	197	1	He	0.011	0.011	12.51	54	7.07		2000	2000	
Tl 205	205	1	He	0.038	0.038	15.81	311	11.36		500	500	
Pb206	206	1	He	0.103	0.103	15.73	324	12.68		12000	12000	
Pb207	207	1	He	0.107	0.107	16.09	278	11.40		12000	12000	
Pb 208	208	1	He	0.114	0.114	3.76	1288	4.15		12000	12000	
U 238	238	1	He	23.525	23.525	2.09	192149	0.88		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7892990	3.67	7475944	105.58	80	120	
Sc_45	45	2	H2	39965788	2.01	44729383	89.35	80	120	
Ge_72	72	1	He	3355226	4.36	3950352	84.93	80	120	
Ge_72	72	2	H2	10767656	1.47	13199044	81.58	80	120	
In_115	115	1	He	3568001	1.98	4664305	76.50	80	120	ISTD Failed
In_115	115	2	H2	9603679	1.94	12147161	79.06	80	120	ISTD Failed
Tm_169	169	1	He	3647757	1.22	4835424	75.44	80	120	ISTD Failed

Sample Table

Sample Name	720-75353-E-2-A
Data File Name	149SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:56:35-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	52.271	52.271	6.48	12864	4.07		2000	2000	
Be 9	9	2	H2	0.011	0.011	103.37	2	87.37		2000	2000	
B 11	11	2	H2	4521.491	4521.491	5.32	672549	2.81		10000	10000	
Mg 24	24	1	He	2557392.039	2557392.039	3.53	1156816981	2.47		100000	100000	>LDR
Al 27	27	1	He	31.927	31.927	4.14	7230	3.79		100000	100000	
P 31	31	1	He	626.072	626.072	3.48	7952	2.60		100000	100000	
K 39	39	1	He	5666.496	5666.496	1.66	3019978	0.58		100000	100000	
Ca 40	40	2	H2	716812.686	716812.686	5.20	2655447893	2.73		100000	100000	>LDR
Ti 47	47	1	He	1.843	1.843	13.35	267	13.31		2000	2000	
V 51	51	1	He	1.563	1.563	2.54	7420	1.30		2000	2000	
Cr 52	52	1	He	1.948	1.948	4.23	12860	3.78		2000	2000	
Mn 55	55	1	He	15057.976	15057.976	2.46	45766664	1.72		22000	22000	
Fe 56	56	1	He	7850.788	7850.788	2.54	29485304	1.48		100000	100000	
Co 59	59	1	He	7.086	7.086	2.27	43459	1.28		2000	2000	
Ni 60	60	1	He	34.571	34.571	2.63	53243	1.55		2000	2000	
Cu 63	63	1	He	1.665	1.665	5.88	7197	4.50		2000	2000	
Zn 66	66	1	He	22.905	22.905	2.47	13791	2.46		2000	2000	
As 75	75	1	He	4.902	4.902	2.83	2376	2.05		2000	2000	
Se 78	78	2	H2	0.537	0.537	28.36	130	24.74		2000	2000	
Sr 88	88	1	He	13936.932	13936.932	2.65	50182508	2.07		2000	2000	>LDR
Mo 95	95	1	He	19.504	19.504	3.81	35946	2.82		2000	2000	
Ag 107	107	1	He	0.068	0.068	12.12	372	9.90		500	500	
Cd 111	111	1	He	0.331	0.331	6.04	257	6.30		2000	2000	
Sn 118	118	1	He	0.081	0.081	16.39	818	2.95		2000	2000	
Sb 121	121	1	He	0.257	0.257	8.51	3240	1.19		2000	2000	
Ba 137	137	1	He	78.256	78.256	1.02	77895	1.16		2000	2000	
Ce 140	140	1	He	0.086	0.086	2.78	1067	2.36		2000	2000	
Gd 157	157	1	He	0.029	0.029	33.53	67	35.00		2000	2000	
Au 197	197	1	He	0.015	0.015	16.45	67	8.66		2000	2000	
Tl 205	205	1	He	0.003	0.003	53.54	83	14.42		500	500	
Pb206	206	1	He	0.193	0.193	7.20	529	3.17		12000	12000	
Pb207	207	1	He	0.199	0.199	14.27	459	14.17		12000	12000	
Pb 208	208	1	He	0.208	0.208	9.33	2105	6.65		12000	12000	
U 238	238	1	He	5.226	5.226	4.56	42634	2.35		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	8501374	1.08	7475944	113.72	80	120	
Sc_45	45	2	H2	41175216	2.53	44729383	92.05	80	120	
Ge_72	72	1	He	3751417	1.24	3950352	94.96	80	120	
Ge_72	72	2	H2	11098964	1.58	13199044	84.09	80	120	
In_115	115	1	He	3856908	0.34	4664305	82.69	80	120	
In_115	115	2	H2	9816716	2.20	12147161	80.81	80	120	
Tm_169	169	1	He	3645586	2.96	4835424	75.39	80	120	ISTD Failed

Sample Report

Sample Table

Sample Name	720-75353-G-3-A
Data File Name	150SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T17:59:56-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	66.509	66.509	4.28	18217	3.66		2000	2000	
Be 9	9	2	H2	0.003	0.003	160.22	1	100.00		2000	2000	
B 11	11	2	H2	5918.554	5918.554	3.89	979769	3.24		10000	10000	
Na 23	23	1	He	4275567.087	4275567.087	5.24	3925400405	1.02		100000	100000	>LDR
Mg 24	24	1	He	951313.131	951313.131	3.41	463073856	1.82		100000	100000	>LDR
Al 27	27	1	He	4.752	4.752	12.22	1470	10.85		100000	100000	
P 31	31	1	He	139.157	139.157	8.57	1972	5.42		100000	100000	
K 39	39	1	He	5813.848	5813.848	2.71	3332157	1.79		100000	100000	
Ca 40	40	2	H2	422895.801	422895.801	3.32	1745776939	2.59		100000	100000	>LDR
Ti 47	47	1	He	0.847	0.847	21.13	135	19.78		2000	2000	
V 51	51	1	He	2.974	2.974	3.92	13490	1.34		2000	2000	
Cr 52	52	1	He	1.182	1.182	6.53	10260	0.72		2000	2000	
Mn 55	55	1	He	3374.853	3374.853	3.54	11038579	2.91		22000	22000	
Fe 56	56	1	He	60.014	60.014	8.25	247376	7.69		100000	100000	
Co 59	59	1	He	19.405	19.405	4.09	127995	1.75		2000	2000	
Ni 60	60	1	He	21.556	21.556	4.26	35730	2.35		2000	2000	
Cu 63	63	1	He	3.727	3.727	4.78	16780	0.74		2000	2000	
Zn 66	66	1	He	5.317	5.317	4.35	3672	3.80		2000	2000	
As 75	75	1	He	1.881	1.881	9.94	1236	6.45		2000	2000	
Se 78	78	2	H2	0.277	0.277	12.88	82	10.63		2000	2000	
Sr 88	88	1	He	8162.929	8162.929	1.71	32278686	1.24		2000	2000	>LDR
Mo 95	95	1	He	10.362	10.362	3.38	20986	2.70		2000	2000	
Ag 107	107	1	He	0.270	0.270	12.56	1456	11.01		500	500	
Cd 111	111	1	He	0.904	0.904	5.75	775	6.34		2000	2000	
Sn 118	118	1	He	0.299	0.299	6.61	1401	3.53		2000	2000	
Sb 121	121	1	He	-0.378	-0.378	-8.47	2025	3.13		2000	2000	
Ba 137	137	1	He	58.084	58.084	1.98	64649	1.11		2000	2000	
Ce 140	140	1	He	0.102	0.102	42.05	1405	40.10		2000	2000	
Gd 157	157	1	He	0.044	0.044	108.96	111	105.70		2000	2000	
Au 197	197	1	He	0.023	0.023	112.39	101	81.85		2000	2000	
Tl 205	205	1	He	0.020	0.020	43.89	216	27.24		500	500	
Pb206	206	1	He	0.089	0.089	29.19	324	18.65		12000	12000	
Pb207	207	1	He	0.090	0.090	20.42	272	15.60		12000	12000	
Pb 208	208	1	He	0.096	0.096	20.73	1257	13.89		12000	12000	
U 238	238	1	He	34.732	34.732	4.35	315843	1.81		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	9154134	4.20	7475944	122.45	80	120	ISTD Failed
Sc_45	45	2	H2	45850348	0.71	44729383	102.51	80	120	
Ge_72	72	1	He	4119492	0.68	3950352	104.28	80	120	
Ge_72	72	2	H2	12567913	0.33	13199044	95.22	80	120	
In_115	115	1	He	4313021	1.16	4664305	92.47	80	120	
In_115	115	2	H2	10877127	0.32	12147161	89.54	80	120	
Tm_169	169	1	He	4063846	2.92	4835424	84.04	80	120	

Sample Report

Sample Table

Sample Name	720-75353-F-4-A
Data File Name	151SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:03:17-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	299.206	299.206	2.47	73736	0.89		2000	2000	
Be 9	9	2	H2	0.002	0.002	90.50	1	43.30		2000	2000	
B 11	11	2	H2	22602.998	22602.998	4.89	3368494	3.41		10000	10000	>LDR
Mg 24	24	1	He	3863256.571	3863256.571	2.51	1778369109	1.80		100000	100000	>LDR
Al 27	27	1	He	6.110	6.110	4.66	1686	2.38		100000	100000	
P 31	31	1	He	591.207	591.207	1.50	7647	0.20		100000	100000	
K 39	39	1	He	1601161.542	1601161.542	1.14	845196523	0.75		100000	100000	>LDR
Ca 40	40	2	H2	961358.688	961358.688	1.25	3584941397	0.49		100000	100000	>LDR
Ti 47	47	1	He	0.689	0.689	18.04	105	18.06		2000	2000	
V 51	51	1	He	2.801	2.801	2.55	12121	0.87		2000	2000	
Cr 52	52	1	He	2.477	2.477	1.94	15417	0.46		2000	2000	
Mn 55	55	1	He	26766.083	26766.083	3.01	82770779	1.71		22000	22000	>LDR
Fe 56	56	1	He	1615.754	1615.754	3.31	6178390	2.55		100000	100000	
Co 59	59	1	He	54.501	54.501	2.74	339971	1.99		2000	2000	
Ni 60	60	1	He	145.847	145.847	2.22	228483	1.77		2000	2000	
Cu 63	63	1	He	6.153	6.153	0.89	25939	0.97		2000	2000	
Zn 66	66	1	He	5.095	5.095	3.61	3201	2.20		2000	2000	
As 75	75	1	He	5.643	5.643	5.49	2672	1.64		2000	2000	
Se 78	78	2	H2	0.895	0.895	4.33	205	2.77		2000	2000	
Sr 88	88	1	He	9570.983	9570.983	6.04	34316380	2.28		2000	2000	>LDR
Mo 95	95	1	He	9.052	9.052	7.03	16623	3.64		2000	2000	
Ag 107	107	1	He	0.054	0.054	19.32	297	16.20		500	500	
Cd 111	111	1	He	0.347	0.347	12.47	261	10.99		2000	2000	
Sn 118	118	1	He	0.275	0.275	4.95	1173	1.77		2000	2000	
Sb 121	121	1	He	0.018	0.018	311.47	2631	5.86		2000	2000	
Ba 137	137	1	He	139.712	139.712	1.76	135397	0.60		2000	2000	
Ce 140	140	1	He	0.181	0.181	4.99	2145	5.39		2000	2000	
Gd 157	157	1	He	0.035	0.035	57.75	76	54.45		2000	2000	
Au 197	197	1	He	0.013	0.013	31.84	59	22.88		2000	2000	
Tl 205	205	1	He	0.266	0.266	1.57	1701	4.50		500	500	
Pb206	206	1	He	0.178	0.178	11.06	463	7.91		12000	12000	
Pb207	207	1	He	0.188	0.188	4.77	410	7.45		12000	12000	
Pb 208	208	1	He	0.176	0.176	9.81	1708	7.36		12000	12000	
U 238	238	1	He	23.921	23.921	4.49	182802	1.32		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	8650696	1.36	7475944	115.71	80	120	
Sc_45	45	2	H2	41417429	1.74	44729383	92.60	80	120	
Ge_72	72	1	He	3740688	3.78	3950352	94.69	80	120	
Ge_72	72	2	H2	10889305	2.22	13199044	82.50	80	120	
In_115	115	1	He	3756034	1.36	4664305	80.53	80	120	
In_115	115	2	H2	9387030	2.15	12147161	77.28	80	120	ISTD Failed
Tm_169	169	1	He	3415783	3.55	4835424	70.64	80	120	ISTD Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	152_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:06:32-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	100.018	3.471	29470	3.25	100	100.0	90	110	
Be 9	9	2	H2	99.342	4.141	20765	3.93	100	99.3	90	110	
Na 23	23	1	He	5776.068	5.863	6055130	9.73	5100	113.3	90	110	> +/- 10%
Mg 24	24	1	He	5097.921	0.986	2812429	5.17	5100	100.0	90	110	
Al 27	27	1	He	5073.229	4.543	1336276	7.87	5100	99.5	90	110	
P 31	31	1	He	4976.153	1.804	76339	5.24	5000	99.5	90	110	
K 39	39	1	He	5348.876	3.165	3481746	6.27	5100	104.9	90	110	
Ca 40	40	2	H2	5090.685	5.723	22683737	5.62	5100	99.8	90	110	
Ti 47	47	1	He	195.322	1.525	33940	4.89	200	97.7	90	110	
V 51	51	1	He	97.793	1.644	434695	5.72	100	97.8	90	110	
Cr 52	52	1	He	92.942	1.988	496757	5.59	100	92.9	90	110	
Mn 55	55	1	He	97.990	1.654	363295	5.54	100	98.0	90	110	
Fe 56	56	1	He	4830.962	4.158	22140509	7.96	5100	94.7	90	110	
Co 59	59	1	He	91.227	2.341	682013	6.08	100	91.2	90	110	
Ni 60	60	1	He	90.559	1.764	170034	5.88	100	90.6	90	110	
Cu 63	63	1	He	88.613	1.929	440911	5.70	100	88.6	90	110	> +/- 10%
Zn 66	66	1	He	96.343	2.340	80249	4.69	100	96.3	90	110	
As 75	75	1	He	97.877	1.937	57126	4.88	100	97.9	90	110	
Se 78	78	2	H2	100.088	3.582	29907	3.47	100	100.1	90	110	
Sr 88	88	1	He	99.340	2.351	500276	4.90	100	99.3	90	110	
Mo 95	95	1	He	178.917	2.618	460837	5.47	200	89.5	90	110	> +/- 10%
Ag 107	107	1	He	46.749	2.787	311055	5.72	50	93.5	90	110	
Cd 111	111	1	He	96.185	1.587	105940	4.05	100	96.2	90	110	
Sn 118	118	1	He	100.363	2.740	290622	5.53	100	100.4	90	110	
Sb 121	121	1	He	52.618	3.166	174960	6.06	50	105.2	90	110	
Ba 137	137	1	He	98.607	2.397	141733	4.61	100	98.6	90	110	
Ce 140	140	1	He	95.815	3.712	1665847	6.79	100	95.8	90	110	
Gd 157	157	1	He	102.183	1.865	317283	4.74	100	102.2	90	110	
Au 197	197	1	He	92.621	1.246	371685	3.91	100	92.6	90	110	
Tl 205	205	1	He	46.612	2.207	421228	4.36	50	93.2	90	110	
Pb206	206	1	He	96.636	1.721	303767	4.92	100	96.6	1	10000	
Pb207	207	1	He	97.016	0.575	261145	3.77	100	97.0	1	10000	
Pb 208	208	1	He	97.318	1.228	1174660	4.12	100	97.3	90	110	
U 238	238	1	He	93.954	1.021	1054701	3.59	100	94.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	10361382	4.30	7475944	138.60	80	120	ISTD Failed
Sc_45	45	2	H2	49399059	0.46	44729383	110.44	80	120	
Ge_72	72	1	He	5241934	3.18	3950352	132.70	80	120	ISTD Failed
Ge_72	72	2	H2	14949693	0.26	13199044	113.26	80	120	
In_115	115	1	He	5568484	3.06	4664305	119.39	80	120	
In_115	115	2	H2	13219645	0.85	12147161	108.83	80	120	
Tm_169	169	1	He	5013314	3.96	4835424	103.68	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	153_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:09:59-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.094	17.5	124	5.9	10	
Be 9	9	2	H2	0.005	121.9	2	88.2	1	
Na 23	23	1	He	392.124	2.8	398055	5.6	50	>+/-RL
Mg 24	24	1	He	27.224	3.1	13926	5.6	50	>+/-0.5RL
Al 27	27	1	He	0.690	31.8	533	8.0	50	
P 31	31	1	He	-1.191	-108.3	78	23.5	50	
K 39	39	1	He	79.045	4.4	133250	2.2	50	>+/-RL
Ca 40	40	2	H2	5.511	11.6	63722	2.4	50	
Ti 47	47	1	He	0.003	1488.8	5	108.3	5	
V 51	51	1	He	0.152	29.2	2516	5.3	10	
Cr 52	52	1	He	0.140	37.4	5487	4.3	2	
Mn 55	55	1	He	0.145	7.4	605	8.6	1	
Fe 56	56	1	He	0.652	12.4	7644	7.0	50	
Co 59	59	1	He	0.004	27.8	51	17.6	1	
Ni 60	60	1	He	-0.001	-332.8	32	18.8	2	
Cu 63	63	1	He	0.162	7.3	1171	3.3	2	
Zn 66	66	1	He	0.042	144.3	279	15.7	5	
As 75	75	1	He	0.053	77.9	489	7.2	2	
Se 78	78	2	H2	0.060	38.4	33	21.2	2	
Sr 88	88	1	He	0.058	3.6	517	0.6	5	
Mo 95	95	1	He	0.044	45.1	137	38.1	2	
Ag 107	107	1	He	0.002	130.9	92	18.2	1	
Cd 111	111	1	He	0.012	59.4	19	44.6	1	
Sn 118	118	1	He	0.039	55.0	1027	5.9	10	
Sb 121	121	1	He	-0.878	-1.6	958	7.0	2	
Ba 137	137	1	He	0.007	96.0	31	27.0	1	
Ce 140	140	1	He	0.005	26.8	126	19.9	5	
Gd 157	157	1	He	0.006	48.3	20	44.1	1	
Au 197	197	1	He	0.083	13.6	356	14.5	5	
Tl 205	205	1	He	0.010	18.5	172	11.3	1	
Pb206	206	1	He	0.017	124.9	168	37.6	1	
Pb207	207	1	He	0.022	32.0	148	10.7	1	
Pb 208	208	1	He	0.025	27.4	668	11.3	1	
U 238	238	1	He	0.016	6.7	182	8.2	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	9298912	3.06	7475944	124.38	80	120	ISTD Failed
Sc_45	45	2	H2	48904900	2.04	44729383	109.34	80	120	
Ge_72	72	1	He	4968762	2.51	3950352	125.78	80	120	ISTD Failed
Ge_72	72	2	H2	15061850	0.49	13199044	114.11	80	120	
In_115	115	1	He	5389716	2.30	4664305	115.55	80	120	
In_115	115	2	H2	13198883	1.42	12147161	108.66	80	120	
Tm_169	169	1	He	4845641	2.29	4835424	100.21	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	154_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:13:36-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	101.604	5.184	28369	3.17	100	101.6	90	110	
Be 9	9	2	H2	101.247	4.281	20060	2.76	100	101.2	90	110	
Na 23	23	1	He	5216.843	4.387	4845927	1.66	5100	102.3	90	110	
Mg 24	24	1	He	4939.293	5.775	2415505	3.34	5100	96.8	90	110	
Al 27	27	1	He	5112.363	5.008	1193176	2.77	5100	100.2	90	110	
P 31	31	1	He	5109.178	5.300	69487	3.01	5000	102.2	90	110	
K 39	39	1	He	5245.002	6.444	3027958	4.46	5100	102.8	90	110	
Ca 40	40	2	H2	5252.017	3.751	22179976	1.58	5100	103.0	90	110	
Ti 47	47	1	He	203.081	4.680	31291	2.46	200	101.5	90	110	
V 51	51	1	He	101.223	4.772	398802	2.54	100	101.2	90	110	
Cr 52	52	1	He	97.462	4.945	461583	2.70	100	97.5	90	110	
Mn 55	55	1	He	100.268	5.304	329547	3.20	100	100.3	90	110	
Fe 56	56	1	He	4979.015	6.776	20213364	4.82	5100	97.6	90	110	
Co 59	59	1	He	96.785	5.552	641317	3.30	100	96.8	90	110	
Ni 60	60	1	He	95.418	4.663	158810	2.34	100	95.4	90	110	
Cu 63	63	1	He	94.068	5.474	414869	3.26	100	94.1	90	110	
Zn 66	66	1	He	97.603	4.739	74275	3.34	100	97.6	90	110	
As 75	75	1	He	99.788	5.212	53196	3.81	100	99.8	90	110	
Se 78	78	2	H2	99.900	3.561	29091	3.39	100	99.9	90	110	
Sr 88	88	1	He	100.867	3.990	464114	2.71	100	100.9	90	110	
Mo 95	95	1	He	185.563	3.604	436649	2.38	200	92.8	90	110	
Ag 107	107	1	He	47.372	2.447	298203	3.24	50	94.7	90	110	
Cd 111	111	1	He	97.149	1.709	101275	3.07	100	97.1	90	110	
Sn 118	118	1	He	101.099	3.082	276989	3.91	100	101.1	90	110	
Sb 121	121	1	He	52.833	1.804	166167	2.50	50	105.7	90	110	
Ba 137	137	1	He	99.895	2.546	135874	3.04	100	99.9	90	110	
Ce 140	140	1	He	100.194	4.950	1648266	6.34	100	100.2	90	110	
Gd 157	157	1	He	100.923	5.624	309143	2.68	100	100.9	90	110	
Au 197	197	1	He	93.071	6.117	368474	3.10	100	93.1	90	110	
Tl 205	205	1	He	47.190	5.947	420722	2.79	50	94.4	90	110	
Pb206	206	1	He	96.270	5.353	298524	2.31	100	96.3	1	10000	
Pb207	207	1	He	96.741	4.569	256988	1.55	100	96.7	1	10000	
Pb 208	208	1	He	97.173	5.294	1157271	2.21	100	97.2	90	110	
U 238	238	1	He	95.928	5.458	1062592	2.31	100	95.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	9195942	2.72	7475944	123.01	80	120	ISTD Failed
Sc_45	45	2	H2	46844016	2.16	44729383	104.73	80	120	
Ge_72	72	1	He	4792579	1.54	3950352	121.32	80	120	ISTD Failed
Ge_72	72	2	H2	14569348	0.22	13199044	110.38	80	120	
In_115	115	1	He	5270507	1.44	4664305	113.00	80	120	
In_115	115	2	H2	12946779	2.80	12147161	106.58	80	120	
Tm_169	169	1	He	4952156	3.34	4835424	102.41	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	155_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:17:05-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.002	-2684.9	90	16.5	10	
Be 9	9	2	H2	0.012	75.8	3	65.8	1	
Na 23	23	1	He	194.182	8.2	206998	4.6	50	>+/-RL
Mg 24	24	1	He	5.587	5.5	3127	6.9	50	
Al 27	27	1	He	0.714	11.2	525	4.9	50	
P 31	31	1	He	-0.834	-75.0	81	12.5	50	
K 39	39	1	He	40.001	22.2	108045	1.8	50	>+/-0.5RL
Ca 40	40	2	H2	15.466	23.6	100627	15.7	50	
Ti 47	47	1	He	0.051	27.8	13	18.2	5	
V 51	51	1	He	0.049	37.6	2053	4.3	10	
Cr 52	52	1	He	0.098	68.9	5143	5.5	2	
Mn 55	55	1	He	0.065	22.4	332	17.3	1	
Fe 56	56	1	He	0.530	26.9	6934	5.7	50	
Co 59	59	1	He	0.042	4.3	296	1.2	1	
Ni 60	60	1	He	0.378	11.3	651	8.5	2	
Cu 63	63	1	He	0.096	6.7	855	4.3	2	
Zn 66	66	1	He	0.880	1.5	902	1.3	5	
As 75	75	1	He	0.045	153.8	465	7.4	2	
Se 78	78	2	H2	0.043	44.7	26	21.4	2	
Sr 88	88	1	He	0.020	38.9	323	10.9	5	
Mo 95	95	1	He	0.042	40.5	128	31.4	2	
Ag 107	107	1	He	0.003	72.2	97	15.0	1	
Cd 111	111	1	He	0.004	156.1	9	68.9	1	
Sn 118	118	1	He	0.047	51.6	1013	6.1	10	
Sb 121	121	1	He	-0.848	-3.0	1017	7.1	2	
Ba 137	137	1	He	0.009	72.6	33	26.5	1	
Ce 140	140	1	He	0.005	23.7	129	16.8	5	
Gd 157	157	1	He	0.006	51.8	21	45.6	1	
Au 197	197	1	He	0.083	10.2	349	8.0	5	
Tl 205	205	1	He	0.009	1.0	163	2.0	1	
Pb206	206	1	He	0.033	6.1	217	2.7	1	
Pb207	207	1	He	0.035	17.6	181	9.4	1	
Pb 208	208	1	He	0.037	11.2	804	7.6	1	
U 238	238	1	He	0.020	29.7	218	28.5	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	9049014	2.86	7475944	121.04	80	120	ISTD Failed
Sc_45	45	2	H2	45705501	0.89	44729383	102.18	80	120	
Ge_72	72	1	He	4779573	0.47	3950352	120.99	80	120	ISTD Failed
Ge_72	72	2	H2	14030592	2.01	13199044	106.30	80	120	
In_115	115	1	He	5212837	1.87	4664305	111.76	80	120	
In_115	115	2	H2	12682348	1.37	12147161	104.41	80	120	
Tm_169	169	1	He	4811143	1.73	4835424	99.50	80	120	

Method Blank (MB) Report

Sample Table

Sample Name	MB 320-133726/1-A
Data File Name	156_PB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:20:41-07:00
Sample Type	MB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.316	9.4	167	3.5	10	
Be 9	9	2	H2	0.004	92.6	1	65.5	1	
Na 23	23	1	He	247.512	1.3	239660	0.8	50	>+/-RL
Mg 24	24	1	He	303.901	4.7	137601	5.2	50	>+/-RL
Al 27	27	1	He	12.756	0.6	3085	1.3	50	
P 31	31	1	He	6.113	10.1	163	6.1	50	
K 39	39	1	He	50.479	7.3	106772	1.8	50	>+/-RL
Ca 40	40	2	H2	32.561	71.0	162839	56.9	50	>+/-RL
Ti 47	47	1	He	2.622	26.3	377	25.2	5	>+/-RL
V 51	51	1	He	0.882	10.1	4938	5.5	10	
Cr 52	52	1	He	1.305	2.6	10045	0.3	2	>+/-RL
Mn 55	55	1	He	0.078	14.4	347	8.4	1	
Fe 56	56	1	He	4.552	1.1	21577	0.9	50	
Co 59	59	1	He	0.005	45.1	50	24.3	1	
Ni 60	60	1	He	0.036	23.9	86	14.5	2	
Cu 63	63	1	He	0.140	4.7	980	3.1	2	
Zn 66	66	1	He	0.783	12.0	809	11.1	5	
As 75	75	1	He	0.436	5.6	654	2.4	2	
Se 78	78	2	H2	0.150	13.2	56	12.0	2	
Sr 88	88	1	He	0.062	17.5	503	10.1	5	
Mo 95	95	1	He	0.092	24.1	238	23.5	2	
Ag 107	107	1	He	0.006	54.5	110	15.2	1	
Cd 111	111	1	He	0.004	141.5	9	58.1	1	
Sn 118	118	1	He	0.086	32.5	1081	7.1	10	
Sb 121	121	1	He	0.096	149.4	3753	9.6	2	
Ba 137	137	1	He	0.199	8.4	279	6.0	1	
Ce 140	140	1	He	0.003	24.5	80	11.0	5	
Gd 157	157	1	He	0.000	5923.2	2	86.6	1	
Au 197	197	1	He	0.044	13.3	197	12.8	5	
Tl 205	205	1	He	0.000	-26297.3	83	28.8	1	
Pb206	206	1	He	0.027	52.8	192	20.5	1	
Pb207	207	1	He	0.035	30.1	177	13.6	1	
Pb 208	208	1	He	0.038	23.0	797	11.1	1	
U 238	238	1	He	0.022	28.3	243	27.7	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	8481467	1.41	7475944	113.45	80	120	
Sc_45	45	2	H2	43365545	1.19	44729383	96.95	80	120	
Ge_72	72	1	He	4654913	2.85	3950352	117.84	80	120	
Ge_72	72	2	H2	13949442	2.17	13199044	105.69	80	120	
In_115	115	1	He	5037693	2.06	4664305	108.01	80	120	
In_115	115	2	H2	12221278	0.54	12147161	100.61	80	120	
Tm_169	169	1	He	4697307	1.57	4835424	97.14	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 320-133726/2-A
Data File Name	157_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:24:16-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	190.474	190.474	2.077	48684	3.21	200	95.2	88	112	
Be 9	9	2	H2	184.641	184.641	2.351	33534	3.48	200	92.3	88	112	
Na 23	23	1	He	1127.944	1127.944	2.279	946207	2.95	1000	112.8	88	112	> +/- 20%
Mg 24	24	1	He	1146.954	1146.954	2.653	495443	3.90	1000	114.7	88	112	> +/- 20%
Al 27	27	1	He	992.808	992.808	2.722	204768	3.84	1000	99.3	88	112	
P 31	31	1	He	977.844	977.844	2.030	11803	2.72	1000	97.8	88	112	
K 39	39	1	He	999.181	999.181	2.409	571523	3.13	1000	99.9	88	112	
Ca 40	40	2	H2	1008.744	1008.744	5.724	3934265	6.85	1000	100.9	88	112	
Ti 47	47	1	He	193.803	193.803	2.740	26355	3.99	200	96.9	88	112	
V 51	51	1	He	193.824	193.824	3.185	672414	4.13	200	96.9	88	112	
Cr 52	52	1	He	190.187	190.187	3.328	791003	4.47	200	95.1	88	112	
Mn 55	55	1	He	190.938	190.938	2.314	553765	3.46	200	95.5	88	112	
Fe 56	56	1	He	1005.456	1005.456	5.847	3607450	6.93	1000	100.5	88	112	
Co 59	59	1	He	190.108	190.108	2.922	1111950	4.25	200	95.1	88	112	
Ni 60	60	1	He	185.747	185.747	3.127	272823	4.23	200	92.9	88	112	
Cu 63	63	1	He	186.441	186.441	3.140	725397	4.23	200	93.2	88	112	
Zn 66	66	1	He	177.598	177.598	2.793	125033	4.30	200	88.8	88	112	
As 75	75	1	He	180.140	180.140	2.554	88626	3.41	200	90.1	88	112	
Se 78	78	2	H2	180.905	180.905	4.178	47846	3.56	200	90.5	88	112	
Sr 88	88	1	He	187.595	187.595	3.514	799450	4.80	200	93.8	88	112	
Mo 95	95	1	He	184.791	184.791	2.227	402783	3.74	200	92.4	88	112	
Ag 107	107	1	He	46.513	46.513	2.446	271380	3.89	50	93.0	88	112	
Cd 111	111	1	He	184.002	184.002	2.770	177771	4.14	200	92.0	88	112	
Sn 118	118	1	He	199.353	199.353	2.205	505425	3.95	200	99.7	88	112	
Sb 121	121	1	He	210.845	210.845	2.153	604437	2.70	200	105.4	88	112	
Ba 137	137	1	He	191.680	191.680	1.557	241624	3.08	200	95.8	88	112	
Ce 140	140	1	He	183.362	183.362	3.128	2793673	2.76	200	91.7	88	112	
Gd 157	157	1	He	181.721	181.721	3.325	525901	2.87	200	90.9	88	112	
Au 197	197	1	He	180.314	180.314	4.570	674481	4.13	200	90.2	88	112	
Tl 205	205	1	He	46.814	46.814	5.060	394353	4.63	50	93.6	88	112	
Pb206	206	1	He	190.007	190.007	4.679	556511	4.27	200	95.0	88	112	
Pb207	207	1	He	193.792	193.792	3.796	486196	3.53	200	96.9	88	112	
Pb 208	208	1	He	193.331	193.331	4.156	2174845	3.78	200	96.7	88	112	
U 238	238	1	He	195.745	195.745	5.432	2048362	4.95	200	97.9	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	8108328	1.53	7475944	108.46	80	120	
Sc_45	45	2	H2	42911032	1.29	44729383	95.93	80	120	
Ge_72	72	1	He	4438417	3.57	3950352	112.35	80	120	
Ge_72	72	2	H2	13237713	0.85	13199044	100.29	80	120	
In_115	115	1	He	4885946	3.56	4664305	104.75	80	120	
In_115	115	2	H2	11842752	0.42	12147161	97.49	80	120	
Tm_169	169	1	He	4673605	0.72	4835424	96.65	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCSD 320-133726/3-A
Data File Name	158_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:27:46-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	179.499	179.499	4.134	45278	2.02	200	89.7	88	112	
Be 9	9	2	H2	176.400	176.400	4.060	31614	1.97	200	88.2	88	112	
Na 23	23	1	He	1605.652	1605.652	59.852	1274094	56.37	1000	160.6	88	112	> +/- 20%
Mg 24	24	1	He	1542.908	1542.908	32.940	637908	30.64	1000	154.3	88	112	> +/- 20%
Al 27	27	1	He	959.776	959.776	4.502	190275	2.77	1000	96.0	88	112	
P 31	31	1	He	920.296	920.296	3.149	10685	1.71	1000	92.0	88	112	
K 39	39	1	He	1029.894	1029.894	13.016	563373	9.06	1000	103.0	88	112	
Ca 40	40	2	H2	971.518	971.518	6.832	3738217	4.97	1000	97.2	88	112	
Ti 47	47	1	He	189.063	189.063	3.655	24712	1.43	200	94.5	88	112	
V 51	51	1	He	187.189	187.189	3.461	624282	1.27	200	93.6	88	112	
Cr 52	52	1	He	187.398	187.398	3.919	749165	1.88	200	93.7	88	112	
Mn 55	55	1	He	188.643	188.643	4.774	525812	2.63	200	94.3	88	112	
Fe 56	56	1	He	981.358	981.358	4.219	3383576	2.32	1000	98.1	88	112	
Co 59	59	1	He	184.640	184.640	3.161	1038064	0.94	200	92.3	88	112	
Ni 60	60	1	He	182.274	182.274	4.165	257313	2.08	200	91.1	88	112	
Cu 63	63	1	He	180.764	180.764	4.364	676002	2.71	200	90.4	88	112	
Zn 66	66	1	He	175.372	175.372	1.835	119076	1.94	200	87.7	88	112	> +/- 20%
As 75	75	1	He	176.174	176.174	2.068	83615	2.06	200	88.1	88	112	
Se 78	78	2	H2	167.416	167.416	2.047	44754	2.32	200	83.7	88	112	> +/- 20%
Sr 88	88	1	He	184.267	184.267	3.019	757308	2.89	200	92.1	88	112	
Mo 95	95	1	He	180.624	180.624	2.352	379721	2.47	200	90.3	88	112	
Ag 107	107	1	He	45.751	45.751	2.411	257216	1.23	50	91.5	88	112	
Cd 111	111	1	He	181.711	181.711	3.064	169160	1.96	200	90.9	88	112	
Sn 118	118	1	He	195.400	195.400	2.055	477377	0.90	200	97.7	88	112	
Sb 121	121	1	He	206.553	206.553	2.500	570772	1.41	200	103.3	88	112	
Ba 137	137	1	He	187.401	187.401	3.740	227624	2.56	200	93.7	88	112	
Ce 140	140	1	He	137.844	137.844	3.869	2024283	2.70	200	68.9	88	112	> +/- 20%
Gd 157	157	1	He	114.669	114.669	6.604	317368	5.04	200	57.3	88	112	> +/- 20%
Au 197	197	1	He	182.464	182.464	2.808	653068	2.13	200	91.2	88	112	
Tl 205	205	1	He	46.767	46.767	2.587	376959	1.95	50	93.5	88	112	
Pb206	206	1	He	188.184	188.184	2.942	527346	1.78	200	94.1	88	112	
Pb207	207	1	He	195.810	195.810	3.287	470018	2.61	200	97.9	88	112	
Pb 208	208	1	He	193.206	193.206	2.579	2079541	1.66	200	96.6	88	112	
U 238	238	1	He	196.034	196.034	4.237	1962736	3.40	200	98.0	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7799263	2.23	7475944	104.32	80	120	
Sc_45	45	2	H2	42375481	2.13	44729383	94.74	80	120	
Ge_72	72	1	He	4280527	1.51	3950352	108.36	80	120	
Ge_72	72	2	H2	13376457	0.28	13199044	101.34	80	120	
In_115	115	1	He	4708449	1.21	4664305	100.95	80	120	
In_115	115	2	H2	11903043	1.08	12147161	97.99	80	120	
Tm_169	169	1	He	4472200	1.74	4835424	92.49	80	120	

Sample Table

Sample Name	320-22657-A-1-C DU
Data File Name	159SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:31:14-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.415	0.415	19.26	174	9.53		2000	2000	
Be 9	9	2	H2	0.023	0.023	49.43	4	45.43		2000	2000	
B 11	11	2	H2	12.455	12.455	20.06	5225	7.99		10000	10000	
Na 23	23	1	He	966.029	966.029	3.70	767581	2.89		100000	100000	
Mg 24	24	1	He	587.059	587.059	4.26	239166	3.61		100000	100000	
Al 27	27	1	He	290.386	290.386	3.61	56664	3.06		100000	100000	
P 31	31	1	He	217.428	217.428	8.07	2534	7.12		100000	100000	
K 39	39	1	He	374.951	374.951	5.77	247548	3.43		100000	100000	
Ca 40	40	2	H2	530.958	530.958	4.11	1909393	5.20		100000	100000	
Ti 47	47	1	He	48.063	48.063	3.61	6163	2.97		2000	2000	
V 51	51	1	He	0.717	0.717	23.99	3912	13.76		2000	2000	
Cr 52	52	1	He	10.077	10.077	3.81	43252	2.79		2000	2000	
Mn 55	55	1	He	18.323	18.323	4.52	50176	3.87		22000	22000	
Fe 56	56	1	He	1121.109	1121.109	5.34	3789333	4.62		100000	100000	
Co 59	59	1	He	1.367	1.367	7.20	7552	6.50		2000	2000	
Ni 60	60	1	He	9.861	9.861	7.01	13674	6.45		2000	2000	
Cu 63	63	1	He	741.059	741.059	4.12	2716163	3.41		2000	2000	
Zn 66	66	1	He	1757.677	1757.677	0.88	1153055	3.49		2000	2000	
As 75	75	1	He	856.261	856.261	0.96	391789	3.44		2000	2000	
Se 78	78	2	H2	23.418	23.418	3.99	5812	5.44		2000	2000	
Sr 88	88	1	He	1.976	1.976	0.61	8056	2.19		2000	2000	
Mo 95	95	1	He	316.038	316.038	0.90	642929	3.56		2000	2000	
Ag 107	107	1	He	3.704	3.704	1.59	21247	2.45		500	500	
Cd 111	111	1	He	118.275	118.275	3.34	112002	3.63		2000	2000	
Sn 118	118	1	He	89.675	89.675	2.60	223300	3.38		2000	2000	
Sb 121	121	1	He	325.029	325.029	2.45	911545	1.77		2000	2000	
Ba 137	137	1	He	29.271	29.271	4.35	36188	4.97		2000	2000	
Ce 140	140	1	He	0.508	0.508	6.55	7633	6.68		2000	2000	
Gd 157	157	1	He	0.246	0.246	3.14	698	5.06		2000	2000	
Au 197	197	1	He	0.912	0.912	8.24	3360	9.80		2000	2000	
Tl 205	205	1	He	1.975	1.975	2.82	16327	4.62		500	500	
Pb206	206	1	He	3816.580	3816.580	2.06	10912595	4.01		12000	12000	
Pb207	207	1	He	3704.924	3704.924	0.47	9071854	2.39		12000	12000	
Pb 208	208	1	He	3765.066	3765.066	1.83	41345597	3.68		12000	12000	
U 238	238	1	He	0.683	0.683	1.35	6988	1.71		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7644444	0.76	7475944	102.25	80	120	
Sc_45	45	2	H2	39261175	1.31	44729383	87.77	80	120	
Ge_72	72	1	He	4141452	2.68	3950352	104.84	80	120	
Ge_72	72	2	H2	12391472	1.48	13199044	93.88	80	120	
In_115	115	1	He	4788705	1.96	4664305	102.67	80	120	
In_115	115	2	H2	11217318	1.87	12147161	92.35	80	120	
Tm_169	169	1	He	4561486	1.97	4835424	94.33	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-1-B
Data File Name	160SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:34:43-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.039	-0.039	-104.77	68	14.19		2000	2000	
Be 9	9	2	H2	0.002	0.002	339.40	1	173.21		2000	2000	
B 11	11	2	H2	-4.983	-4.983	-4.91	2723	3.48		10000	10000	
Na 23	23	1	He	285.092	285.092	3.14	236466	1.94		100000	100000	
Mg 24	24	1	He	122.240	122.240	2.38	48377	0.75		100000	100000	
Al 27	27	1	He	60.711	60.711	5.20	11670	3.36		100000	100000	
P 31	31	1	He	43.758	43.758	12.25	552	9.52		100000	100000	
K 39	39	1	He	77.204	77.204	5.53	104983	1.64		100000	100000	
Ca 40	40	2	H2	110.062	110.062	5.28	415338	7.48		100000	100000	
Ti 47	47	1	He	9.196	9.196	4.35	1142	3.79		2000	2000	
V 51	51	1	He	-0.025	-0.025	-97.08	1441	3.77		2000	2000	
Cr 52	52	1	He	2.112	2.112	3.72	11781	0.79		2000	2000	
Mn 55	55	1	He	3.686	3.686	1.05	9830	2.37		22000	22000	
Fe 56	56	1	He	225.191	225.191	2.78	738316	1.82		100000	100000	
Co 59	59	1	He	0.264	0.264	4.73	1425	4.73		2000	2000	
Ni 60	60	1	He	2.126	2.126	4.17	2868	2.43		2000	2000	
Cu 63	63	1	He	145.890	145.890	2.30	516771	1.79		2000	2000	
Zn 66	66	1	He	365.943	365.943	2.94	236746	1.84		2000	2000	
As 75	75	1	He	176.282	176.282	2.94	79796	2.14		2000	2000	
Se 78	78	2	H2	5.415	5.415	4.44	1341	5.23		2000	2000	
Sr 88	88	1	He	0.389	0.389	2.54	1721	1.10		2000	2000	
Mo 95	95	1	He	63.228	63.228	2.55	126789	1.72		2000	2000	
Ag 107	107	1	He	0.762	0.762	4.33	4279	1.47		500	500	
Cd 111	111	1	He	24.642	24.642	4.23	22564	1.78		2000	2000	
Sn 118	118	1	He	19.004	19.004	4.23	46376	2.72		2000	2000	
Sb 121	121	1	He	66.561	66.561	3.73	183054	0.74		2000	2000	
Ba 137	137	1	He	6.076	6.076	3.64	7277	0.57		2000	2000	
Ce 140	140	1	He	0.099	0.099	4.08	1459	2.16		2000	2000	
Gd 157	157	1	He	0.059	0.059	24.16	162	21.97		2000	2000	
Au 197	197	1	He	0.169	0.169	1.29	622	3.27		2000	2000	
Tl 205	205	1	He	0.403	0.403	5.85	3269	3.71		500	500	
Pb206	206	1	He	815.231	815.231	4.15	2242918	1.69		12000	12000	
Pb207	207	1	He	800.964	800.964	4.41	1887566	2.32		12000	12000	
Pb 208	208	1	He	810.080	810.080	3.36	8561302	0.95		12000	12000	
U 238	238	1	He	0.148	0.148	13.23	1463	11.28		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7383500	1.78	7475944	98.76	80	120	
Sc_45	45	2	H2	38718840	2.75	44729383	86.56	80	120	
Ge_72	72	1	He	4082962	1.18	3950352	103.36	80	120	
Ge_72	72	2	H2	12282535	2.21	13199044	93.06	80	120	
In_115	115	1	He	4633287	3.18	4664305	99.33	80	120	
In_115	115	2	H2	10916589	0.70	12147161	89.87	80	120	
Tm_169	169	1	He	4393131	2.41	4835424	90.85	80	120	

Sample Report

Sample Table

Sample Name	SD 320-22657-A-1-B@5
Data File Name	161SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:38:16-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	375.772	375.772	1.75	81902	4.09		2000	2000	
Be 9	9	2	H2	365.289	365.289	1.97	56621	4.26		2000	2000	
B 11	11	2	H2	2109.791	2109.791	3.92	281223	6.12		10000	10000	
Na 23	23	1	He	2865.649	2865.649	3.42	2094096	2.70		100000	100000	
Mg 24	24	1	He	2413.503	2413.503	3.51	923991	2.88		100000	100000	
Al 27	27	1	He	2425.915	2425.915	4.21	443216	3.54		100000	100000	
P 31	31	1	He	2078.231	2078.231	4.05	22163	3.43		100000	100000	
K 39	39	1	He	2288.132	2288.132	3.95	1072335	3.08		100000	100000	
Ca 40	40	2	H2	2642.564	2642.564	5.29	8749454	7.42		100000	100000	
Ti 47	47	1	He	439.219	439.219	2.79	52956	2.20		2000	2000	
V 51	51	1	He	398.265	398.265	3.93	1223513	3.30		2000	2000	
Cr 52	52	1	He	419.983	419.983	3.08	1544339	2.85		2000	2000	
Mn 55	55	1	He	412.267	412.267	3.59	1060078	2.93		22000	22000	
Fe 56	56	1	He	3119.925	3119.925	1.27	9916016	0.57		100000	100000	
Co 59	59	1	He	406.188	406.188	4.86	2106281	4.25		2000	2000	
Ni 60	60	1	He	388.786	388.786	4.10	506276	3.45		2000	2000	
Cu 63	63	1	He	1084.596	1084.596	1.08	3740319	0.53		2000	2000	
Zn 66	66	1	He	2000.963	2000.963	3.54	1263748	3.07		2000	2000	>LDR
As 75	75	1	He	1178.739	1178.739	3.36	519127	2.85		2000	2000	
Se 78	78	2	H2	383.446	383.446	4.10	88687	3.68		2000	2000	
Sr 88	88	1	He	410.904	410.904	3.81	1573171	3.37		2000	2000	
Mo 95	95	1	He	678.112	678.112	3.47	1328087	2.96		2000	2000	
Ag 107	107	1	He	97.492	97.492	1.69	524439	2.58		500	500	
Cd 111	111	1	He	484.559	484.559	1.04	431698	2.49		2000	2000	
Sn 118	118	1	He	496.466	496.466	1.72	1159516	2.82		2000	2000	
Sb 121	121	1	He	764.705	764.705	2.67	2013225	1.76		2000	2000	
Ba 137	137	1	He	423.105	423.105	1.86	491853	3.02		2000	2000	
Ce 140	140	1	He	380.666	380.666	2.77	5351161	4.17		2000	2000	
Gd 157	157	1	He	401.134	401.134	2.69	1080797	2.62		2000	2000	
Au 197	197	1	He	375.381	375.381	3.61	1307280	3.52		2000	2000	
Tl 205	205	1	He	100.378	100.378	3.15	787169	3.03		500	500	
Pb206	206	1	He	4051.291	4051.291	1.47	11045398	1.30		12000	12000	
Pb207	207	1	He	4001.305	4001.305	3.70	9343940	3.50		12000	12000	
Pb 208	208	1	He	4072.718	4072.718	1.99	42646984	1.66		12000	12000	
U 238	238	1	He	422.082	422.082	2.89	4112383	2.73		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7191763	0.71	7475944	96.20	80	120	
Sc_45	45	2	H2	36618985	2.34	44729383	81.87	80	120	
Ge_72	72	1	He	3988252	0.52	3950352	100.96	80	120	
Ge_72	72	2	H2	11577134	0.43	13199044	87.71	80	120	
In_115	115	1	He	4504621	1.46	4664305	96.58	80	120	
In_115	115	2	H2	10702569	2.69	12147161	88.11	80	120	
Tm_169	169	1	He	4350773	0.40	4835424	89.98	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	162_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:41:36-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	94.818	1.202	20374	3.98	100	94.8	90	110	
Be 9	9	2	H2	92.466	2.628	14098	5.62	100	92.5	90	110	
Na 23	23	1	He	4791.027	4.122	3402761	3.17	5100	93.9	90	110	
Mg 24	24	1	He	4884.475	3.704	1826193	3.89	5100	95.8	90	110	
Al 27	27	1	He	4960.105	3.944	884936	4.25	5100	97.3	90	110	
P 31	31	1	He	4896.405	2.829	50906	2.83	5000	97.9	90	110	
K 39	39	1	He	5058.751	3.059	2235374	4.15	5100	99.2	90	110	
Ca 40	40	2	H2	5256.798	4.208	17089236	7.21	5100	103.1	90	110	
Ti 47	47	1	He	198.554	4.231	23379	3.63	200	99.3	90	110	
V 51	51	1	He	99.908	2.717	300884	2.92	100	99.9	90	110	
Cr 52	52	1	He	96.349	2.829	348837	3.07	100	96.3	90	110	
Mn 55	55	1	He	100.835	4.193	253330	4.36	100	100.8	90	110	
Fe 56	56	1	He	5024.845	5.016	15594857	5.00	5100	98.5	90	110	
Co 59	59	1	He	96.339	4.131	488077	4.81	100	96.3	90	110	
Ni 60	60	1	He	95.005	2.539	120861	2.67	100	95.0	90	110	
Cu 63	63	1	He	94.146	3.190	317413	3.50	100	94.1	90	110	
Zn 66	66	1	He	92.367	4.846	57582	4.48	100	92.4	90	110	
As 75	75	1	He	93.803	4.036	40983	3.82	100	93.8	90	110	
Se 78	78	2	H2	95.968	3.909	22143	5.20	100	96.0	90	110	
Sr 88	88	1	He	97.762	3.758	368421	3.48	100	97.8	90	110	
Mo 95	95	1	He	180.914	4.063	348640	3.73	200	90.5	90	110	
Ag 107	107	1	He	46.440	2.681	240725	3.30	50	92.9	90	110	
Cd 111	111	1	He	95.610	2.537	82066	3.06	100	95.6	90	110	
Sn 118	118	1	He	102.023	3.619	230162	4.25	100	102.0	90	110	
Sb 121	121	1	He	52.783	2.713	136706	3.20	50	105.6	90	110	
Ba 137	137	1	He	101.830	2.633	114058	3.24	100	101.8	90	110	
Ce 140	140	1	He	96.496	3.473	1306762	4.18	100	96.5	90	110	
Gd 157	157	1	He	101.761	1.806	263737	3.36	100	101.8	90	110	
Au 197	197	1	He	94.796	3.158	317671	5.14	100	94.8	90	110	
Tl 205	205	1	He	49.140	1.156	370735	3.24	50	98.3	90	110	
Pb206	206	1	He	101.287	0.831	265733	3.03	100	101.3	1	10000	
Pb207	207	1	He	101.227	1.265	227484	3.40	100	101.2	1	10000	
Pb 208	208	1	He	101.441	1.372	1022161	3.36	100	101.4	90	110	
U 238	238	1	He	100.694	1.748	943788	3.63	100	100.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7024043	1.85	7475944	93.96	80	120	
Sc_45	45	2	H2	36010337	2.98	44729383	80.51	80	120	
Ge_72	72	1	He	3924243	1.30	3950352	99.34	80	120	
Ge_72	72	2	H2	11539570	1.32	13199044	87.43	80	120	
In_115	115	1	He	4339984	1.15	4664305	93.05	80	120	
In_115	115	2	H2	10487767	1.05	12147161	86.34	80	120	
Tm_169	169	1	He	4184528	2.21	4835424	86.54	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	163_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:45:05-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.142	-38.4	44	30.9	10	
Be 9	9	2	H2	0.037	79.2	6	77.9	1	
Na 23	23	1	He	80.897	5.6	82061	2.7	50	>+/-RL
Mg 24	24	1	He	1.540	14.5	925	8.4	50	
Al 27	27	1	He	0.836	19.5	435	5.6	50	
P 31	31	1	He	-0.467	-625.2	67	46.2	50	
K 39	39	1	He	9.894	37.5	72020	0.9	50	
Ca 40	40	2	H2	11.677	9.7	71306	8.2	50	
Ti 47	47	1	He	0.181	45.6	25	37.3	5	
V 51	51	1	He	-0.204	-0.6	849	1.1	10	
Cr 52	52	1	He	0.095	46.5	4040	4.0	2	
Mn 55	55	1	He	0.050	26.8	221	16.2	1	
Fe 56	56	1	He	0.426	22.9	5138	4.8	50	
Co 59	59	1	He	0.041	11.5	231	10.7	1	
Ni 60	60	1	He	0.404	9.4	547	7.6	2	
Cu 63	63	1	He	0.158	7.1	886	5.0	2	
Zn 66	66	1	He	0.674	19.8	621	12.7	5	
As 75	75	1	He	0.081	68.7	403	4.0	2	
Se 78	78	2	H2	0.106	52.4	37	35.3	2	
Sr 88	88	1	He	0.021	4.2	272	3.9	5	
Mo 95	95	1	He	0.042	23.1	106	14.9	2	
Ag 107	107	1	He	-0.001	-975.1	64	44.6	1	
Cd 111	111	1	He	0.011	22.9	15	15.7	1	
Sn 118	118	1	He	-0.094	-26.8	544	10.7	10	
Sb 121	121	1	He	-0.755	-6.8	1119	12.1	2	
Ba 137	137	1	He	0.015	11.5	36	5.4	1	
Ce 140	140	1	He	0.011	27.5	183	22.7	5	
Gd 157	157	1	He	0.012	55.7	33	50.0	1	
Au 197	197	1	He	0.149	21.1	527	17.0	5	
Tl 205	205	1	He	0.014	19.9	181	10.1	1	
Pb206	206	1	He	0.056	2.0	249	4.1	1	
Pb207	207	1	He	0.058	4.3	210	1.6	1	
Pb 208	208	1	He	0.063	5.4	969	2.5	1	
U 238	238	1	He	0.024	27.8	233	25.1	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7122799	1.31	7475944	95.28	80	120	
Sc_45	45	2	H2	38319065	2.75	44729383	85.67	80	120	
Ge_72	72	1	He	3981131	3.43	3950352	100.78	80	120	
Ge_72	72	2	H2	11928338	2.84	13199044	90.37	80	120	
In_115	115	1	He	4490435	0.48	4664305	96.27	80	120	
In_115	115	2	H2	10423245	1.14	12147161	85.81	80	120	
Tm_169	169	1	He	4215469	3.06	4835424	87.18	80	120	

Calibration Standard Report

Sample Table

Sample Name	CCV 765091
Data File Name	162_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:41:36-07:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li 7	7	2	H2	20374	3.98
Be 9	9	2	H2	14098	5.62
B 11	11	2	H2	28100	4.81
Na 23	23	1	He	3402761	3.17
Mg 24	24	1	He	1826193	3.89
Al 27	27	1	He	884936	4.25
P 31	31	1	He	50906	2.83
K 39	39	1	He	2235374	4.15
Ca 40	40	2	H2	17089236	7.21
Ti 47	47	1	He	23379	3.63
V 51	51	1	He	300884	2.92
Cr 52	52	1	He	348837	3.07
Mn 55	55	1	He	253330	4.36
Fe 56	56	1	He	15594857	5.00
Co 59	59	1	He	488077	4.81
Ni 60	60	1	He	120861	2.67
Cu 63	63	1	He	317413	3.50
Zn 66	66	1	He	57582	4.48
As 75	75	1	He	40983	3.82
Se 78	78	2	H2	22143	5.20
Sr 88	88	1	He	368421	3.48
Mo 95	95	1	He	348640	3.73
Ag 107	107	1	He	240725	3.30
Cd 111	111	1	He	82066	3.06
Sn 118	118	1	He	230162	4.25
Sb 121	121	1	He	136706	3.20
Ba 137	137	1	He	114058	3.24
Ce 140	140	1	He	1306762	4.18
Gd 157	157	1	He	263737	3.36
Au 197	197	1	He	317671	5.14
Tl 205	205	1	He	370735	3.24
Pb206	206	1	He	265733	3.03
Pb207	207	1	He	227484	3.40
Pb 208	208	1	He	1022161	3.36
U 238	238	1	He	943788	3.63

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7024043	1.85	7475944	93.96	80	120	
Sc_45	45	2	H2	36010337	2.98	44729383	80.51	80	120	
Ge_72	72	1	He	3924243	1.30	3950352	99.34	80	120	
Ge_72	72	2	H2	11539570	1.32	13199044	87.43	80	120	
In_115	115	1	He	4339984	1.15	4664305	93.05	80	120	
In_115	115	2	H2	10487767	1.05	12147161	86.34	80	120	
Tm_169	169	1	He	4184528	2.21	4835424	86.54	80	120	

Calibration Blank Report

Sample Table

Sample Name	CCB 758340
Data File Name	163_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:45:05-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li 7	7	2	H2	44	30.93
Be 9	9	2	H2	6	77.89
B 11	11	2	H2	2869	5.70
Na 23	23	1	He	82061	2.66
Mg 24	24	1	He	925	8.36
Al 27	27	1	He	435	5.62
P 31	31	1	He	67	46.24
K 39	39	1	He	72020	0.93
Ca 40	40	2	H2	71306	8.23
Ti 47	47	1	He	25	37.31
V 51	51	1	He	849	1.11
Cr 52	52	1	He	4040	3.96
Mn 55	55	1	He	221	16.22
Fe 56	56	1	He	5138	4.79
Co 59	59	1	He	231	10.70
Ni 60	60	1	He	547	7.62
Cu 63	63	1	He	886	4.97
Zn 66	66	1	He	621	12.74
As 75	75	1	He	403	3.99
Se 78	78	2	H2	37	35.34
Sr 88	88	1	He	272	3.89
Mo 95	95	1	He	106	14.92
Ag 107	107	1	He	64	44.60
Cd 111	111	1	He	15	15.75
Sn 118	118	1	He	544	10.72
Sb 121	121	1	He	1119	12.11
Ba 137	137	1	He	36	5.42
Ce 140	140	1	He	183	22.71
Gd 157	157	1	He	33	50.00
Au 197	197	1	He	527	17.00
Tl 205	205	1	He	181	10.14
Pb206	206	1	He	249	4.09
Pb207	207	1	He	210	1.59
Pb 208	208	1	He	969	2.54
U 238	238	1	He	233	25.11

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Sc_45	45	1	He	7122799	1.31
Sc_45	45	2	H2	38319065	2.75
Ge_72	72	1	He	3981131	3.43
Ge_72	72	2	H2	11928338	2.84
In_115	115	1	He	4490435	0.48
In_115	115	2	H2	10423245	1.14
Tm_169	169	1	He	4215469	3.06

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	164_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:48:40-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	97.716	2.502	19977	4.56	100	97.7	90	110	
Be 9	9	2	H2	97.083	3.993	13731	5.95	100	97.1	90	110	
Na 23	23	1	He	5169.414	3.286	3479935	3.62	5100	101.4	90	110	
Mg 24	24	1	He	4965.830	2.110	1794831	2.27	5100	97.4	90	110	
Al 27	27	1	He	5015.707	3.310	878500	3.71	5100	98.3	90	110	
P 31	31	1	He	5035.733	2.999	50742	3.43	5000	100.7	90	110	
K 39	39	1	He	5061.527	4.729	2238104	4.91	5100	99.2	90	110	
Ca 40	40	2	H2	4893.357	8.319	16785535	10.45	5100	95.9	90	110	
Ti 47	47	1	He	197.029	4.219	22800	4.66	200	98.5	90	110	
V 51	51	1	He	99.662	3.414	296775	3.83	100	99.7	90	110	
Cr 52	52	1	He	100.487	3.513	346893	3.90	100	100.5	90	110	
Mn 55	55	1	He	99.721	3.444	250015	3.90	100	99.7	90	110	
Fe 56	56	1	He	4943.326	4.167	15260168	4.64	5100	96.9	90	110	
Co 59	59	1	He	100.076	2.643	483314	3.08	100	100.1	90	110	
Ni 60	60	1	He	99.760	3.246	119329	3.66	100	99.8	90	110	
Cu 63	63	1	He	99.061	3.400	311187	3.83	100	99.1	90	110	
Zn 66	66	1	He	98.661	3.070	56969	3.38	100	98.7	90	110	
As 75	75	1	He	99.553	3.826	40907	4.15	100	99.6	90	110	
Se 78	78	2	H2	102.754	2.670	22326	4.26	100	102.8	90	110	
Sr 88	88	1	He	99.217	3.645	366480	3.90	100	99.2	90	110	
Mo 95	95	1	He	195.610	3.799	341875	4.03	200	97.8	90	110	
Ag 107	107	1	He	49.199	0.775	237464	2.71	50	98.4	90	110	
Cd 111	111	1	He	97.469	1.292	80196	3.11	100	97.5	90	110	
Sn 118	118	1	He	99.664	2.691	230005	4.50	100	99.7	90	110	
Sb 121	121	1	He	49.810	2.307	136563	4.22	50	99.6	90	110	
Ba 137	137	1	He	98.325	2.728	112460	4.70	100	98.3	90	110	
Ce 140	140	1	He	99.349	2.045	1301598	3.78	100	99.3	90	110	
Gd 157	157	1	He	99.070	2.333	262767	3.95	100	99.1	90	110	
Au 197	197	1	He	98.220	2.069	313697	3.69	100	98.2	90	110	
Tl 205	205	1	He	49.186	1.369	366706	2.82	50	98.4	90	110	
Pb206	206	1	He	98.041	1.764	261989	3.37	100	98.0	1	10000	
Pb207	207	1	He	98.507	0.436	225301	2.05	100	98.5	1	10000	
Pb 208	208	1	He	98.360	1.252	1010949	2.86	100	98.4	90	110	
U 238	238	1	He	98.663	1.456	936274	2.91	100	98.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6950379	0.52	7122799	97.58	80	120	
Sc_45	45	2	H2	36127145	2.15	38319065	94.28	80	120	
Ge_72	72	1	He	3933737	0.99	3981131	98.81	80	120	
Ge_72	72	2	H2	11324194	1.58	11928338	94.94	80	120	
In_115	115	1	He	4350862	2.04	4490435	96.89	80	120	
In_115	115	2	H2	9904399	2.38	10423245	95.02	80	120	
Tm_169	169	1	He	4207651	1.62	4215469	99.81	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	165_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:52:06-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.030	156.5	47	19.4	10	
Be 9	9	2	H2	-0.031	-10.8	2	33.3	1	
Na 23	23	1	He	-23.672	-8.3	63336	2.4	50	
Mg 24	24	1	He	-0.070	-91.0	862	3.3	50	
Al 27	27	1	He	-0.022	-269.6	413	2.2	50	
P 31	31	1	He	0.828	244.9	73	28.1	50	
K 39	39	1	He	-3.340	-56.6	67577	1.0	50	
Ca 40	40	2	H2	0.004	19992.1	67494	5.1	50	
Ti 47	47	1	He	-0.091	-39.7	14	28.6	5	
V 51	51	1	He	0.010	107.4	841	3.1	10	
Cr 52	52	1	He	-0.014	-76.0	3824	1.5	2	
Mn 55	55	1	He	0.021	53.1	263	11.1	1	
Fe 56	56	1	He	0.052	190.7	5081	6.5	50	
Co 59	59	1	He	0.006	106.1	247	10.7	1	
Ni 60	60	1	He	-0.039	-54.9	479	5.7	2	
Cu 63	63	1	He	-0.031	-75.5	755	9.9	2	
Zn 66	66	1	He	0.060	89.4	641	6.3	5	
As 75	75	1	He	0.020	424.6	402	8.0	2	
Se 78	78	2	H2	-0.027	-43.1	30	8.8	2	
Sr 88	88	1	He	0.009	120.1	299	11.8	5	
Mo 95	95	1	He	-0.003	-325.6	98	19.7	2	
Ag 107	107	1	He	0.003	179.0	77	34.0	1	
Cd 111	111	1	He	-0.004	-113.5	11	39.0	1	
Sn 118	118	1	He	0.000	5210.0	528	11.7	10	
Sb 121	121	1	He	0.080	46.6	1297	5.6	2	
Ba 137	137	1	He	0.002	740.3	37	50.6	1	
Ce 140	140	1	He	-0.003	-13.6	142	3.6	5	
Gd 157	157	1	He	-0.002	-337.6	29	56.9	1	
Au 197	197	1	He	-0.030	-65.7	432	13.9	5	
Tl 205	205	1	He	-0.008	-10.4	126	5.5	1	
Pb206	206	1	He	-0.018	-43.0	201	11.3	1	
Pb207	207	1	He	-0.022	-32.8	160	11.6	1	
Pb 208	208	1	He	-0.025	-15.8	718	6.8	1	
U 238	238	1	He	0.003	187.2	259	17.5	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6821052	0.69	7122799	95.76	80	120	
Sc_45	45	2	H2	36287011	1.33	38319065	94.70	80	120	
Ge_72	72	1	He	3887057	1.85	3981131	97.64	80	120	
Ge_72	72	2	H2	11578316	0.64	11928338	97.07	80	120	
In_115	115	1	He	4342956	3.07	4490435	96.72	80	120	
In_115	115	2	H2	10130118	1.86	10423245	97.19	80	120	
Tm_169	169	1	He	4220888	1.30	4215469	100.13	80	120	

Sample Report

Sample Table

Sample Name	PDS 320-22657-A-1-B
Data File Name	166SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:55:40-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.205	0.205	33.71	82	18.93		2000	2000	
Be 9	9	2	H2	-0.027	-0.027	-34.31	2	66.14		2000	2000	
B 11	11	2	H2	15.070	15.070	13.12	4570	7.93		10000	10000	
Na 23	23	1	He	818.107	818.107	3.95	587139	1.18		100000	100000	
Mg 24	24	1	He	599.211	599.211	3.01	206491	0.71		100000	100000	
Al 27	27	1	He	286.012	286.012	2.38	47971	1.24		100000	100000	
P 31	31	1	He	221.597	221.597	6.89	2179	4.64		100000	100000	
K 39	39	1	He	347.879	347.879	4.19	208302	0.49		100000	100000	
Ca 40	40	2	H2	510.322	510.322	8.70	1789416	11.16		100000	100000	
Ti 47	47	1	He	45.597	45.597	2.58	5031	1.67		2000	2000	
V 51	51	1	He	0.278	0.278	9.45	1571	3.13		2000	2000	
Cr 52	52	1	He	10.305	10.305	2.92	37154	0.93		2000	2000	
Mn 55	55	1	He	18.193	18.193	1.62	43505	1.20		22000	22000	
Fe 56	56	1	He	1147.190	1147.190	3.77	3367019	1.54		100000	100000	
Co 59	59	1	He	1.403	1.403	2.78	6649	0.89		2000	2000	
Ni 60	60	1	He	10.150	10.150	2.20	11990	1.01		2000	2000	
Cu 63	63	1	He	794.940	794.940	3.60	2366029	1.41		2000	2000	
Zn 66	66	1	He	1900.892	1900.892	3.36	1017067	0.67		2000	2000	
As 75	75	1	He	906.225	906.225	2.63	345633	0.66		2000	2000	
Se 78	78	2	H2	25.123	25.123	1.18	5398	2.39		2000	2000	
Sr 88	88	1	He	2.033	2.033	1.45	7279	1.78		2000	2000	
Mo 95	95	1	He	352.830	352.830	2.89	577286	0.20		2000	2000	
Ag 107	107	1	He	4.041	4.041	0.55	19434	1.15		500	500	
Cd 111	111	1	He	122.846	122.846	1.46	100410	0.92		2000	2000	
Sn 118	118	1	He	88.777	88.777	1.66	203568	1.58		2000	2000	
Sb 121	121	1	He	307.305	307.305	1.14	831350	1.23		2000	2000	
Ba 137	137	1	He	29.157	29.157	3.44	33145	2.97		2000	2000	
Ce 140	140	1	He	0.509	0.509	5.39	6802	5.11		2000	2000	
Gd 157	157	1	He	0.221	0.221	6.87	603	3.36		2000	2000	
Au 197	197	1	He	0.701	0.701	6.90	2692	2.69		2000	2000	
Tl 205	205	1	He	2.065	2.065	3.88	15180	0.72		500	500	
Pb206	206	1	He	3845.190	3845.190	4.26	10007365	1.28		12000	12000	
Pb207	207	1	He	3792.779	3792.779	3.33	8451419	0.18		12000	12000	
Pb 208	208	1	He	3827.755	3827.755	3.22	38327524	1.19		12000	12000	
U 238	238	1	He	0.666	0.666	6.48	6382	2.99		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6605731	2.41	7122799	92.74	80	120	
Sc_45	45	2	H2	35688383	3.00	38319065	93.13	80	120	
Ge_72	72	1	He	3685363	3.05	3981131	92.57	80	120	
Ge_72	72	2	H2	11146228	1.52	11928338	93.44	80	120	
In_115	115	1	He	4323166	0.62	4490435	96.27	80	120	
In_115	115	2	H2	10406958	0.91	10423245	99.84	80	120	
Tm_169	169	1	He	4106369	3.40	4215469	97.41	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-3-B
Data File Name	167SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T18:59:07-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.182	0.182	9.22	76	4.77		2000	2000	
Be 9	9	2	H2	-0.024	-0.024	-41.77	3	52.92		2000	2000	
B 11	11	2	H2	5.518	5.518	11.01	3320	9.09		10000	10000	
Na 23	23	1	He	892.575	892.575	4.80	641467	3.02		100000	100000	
Mg 24	24	1	He	724.109	724.109	3.03	252434	1.80		100000	100000	
Al 27	27	1	He	289.676	289.676	1.92	49179	0.80		100000	100000	
P 31	31	1	He	210.876	210.876	4.89	2103	3.42		100000	100000	
K 39	39	1	He	356.592	356.592	5.36	214448	2.45		100000	100000	
Ca 40	40	2	H2	531.197	531.197	4.07	1835711	12.04		100000	100000	
Ti 47	47	1	He	42.596	42.596	4.71	4758	3.65		2000	2000	
V 51	51	1	He	0.223	0.223	15.20	1433	5.90		2000	2000	
Cr 52	52	1	He	8.760	8.760	4.66	32537	2.89		2000	2000	
Mn 55	55	1	He	12.726	12.726	3.45	30860	2.28		22000	22000	
Fe 56	56	1	He	282.489	282.489	4.60	843003	3.52		100000	100000	
Co 59	59	1	He	2.571	2.571	3.26	12149	2.12		2000	2000	
Ni 60	60	1	He	6.470	6.470	1.66	7924	1.00		2000	2000	
Cu 63	63	1	He	461.318	461.318	4.37	1390327	3.17		2000	2000	
Zn 66	66	1	He	1510.174	1510.174	3.86	815639	3.05		2000	2000	
As 75	75	1	He	1036.406	1036.406	3.25	398862	2.54		2000	2000	
Se 78	78	2	H2	29.501	29.501	1.33	6178	4.86		2000	2000	
Sr 88	88	1	He	1.803	1.803	2.46	6543	2.00		2000	2000	
Mo 95	95	1	He	295.700	295.700	3.36	488286	2.47		2000	2000	
Ag 107	107	1	He	3.906	3.906	4.24	18526	3.15		500	500	
Cd 111	111	1	He	167.697	167.697	5.67	135121	3.40		2000	2000	
Sn 118	118	1	He	96.558	96.558	4.40	218275	2.60		2000	2000	
Sb 121	121	1	He	366.676	366.676	4.51	977754	1.69		2000	2000	
Ba 137	137	1	He	26.188	26.188	4.20	29361	2.15		2000	2000	
Ce 140	140	1	He	0.538	0.538	6.36	7071	4.28		2000	2000	
Gd 157	157	1	He	0.200	0.200	9.21	571	4.96		2000	2000	
Au 197	197	1	He	0.624	0.624	6.64	2555	3.49		2000	2000	
Tl 205	205	1	He	1.866	1.866	5.86	14299	2.84		500	500	
Pb206	206	1	He	4521.922	4521.922	5.66	12250880	2.19		12000	12000	
Pb207	207	1	He	4403.621	4403.621	7.14	10208705	3.49		12000	12000	
Pb 208	208	1	He	4492.596	4492.596	7.09	46801081	3.73		12000	12000	
U 238	238	1	He	0.606	0.606	7.11	6069	3.11		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6685898	1.36	7122799	93.87	80	120	
Sc_45	45	2	H2	35203814	8.17	38319065	91.87	80	120	
Ge_72	72	1	He	3717994	1.33	3981131	93.39	80	120	
Ge_72	72	2	H2	10871867	3.51	11928338	91.14	80	120	
In_115	115	1	He	4265979	3.17	4490435	95.00	80	120	
In_115	115	2	H2	9910323	2.26	10423245	95.08	80	120	
Tm_169	169	1	He	4276668	3.82	4215469	101.45	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-5-B
Data File Name	168SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:02:39-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.112	0.112	29.91	64	15.00		2000	2000	
Be 9	9	2	H2	-0.027	-0.027	-43.63	2	81.04		2000	2000	
B 11	11	2	H2	6.915	6.915	15.47	3573	8.26		10000	10000	
Na 23	23	1	He	822.424	822.424	3.46	568353	2.65		100000	100000	
Mg 24	24	1	He	392.557	392.557	4.44	130625	4.13		100000	100000	
Al 27	27	1	He	243.465	243.465	3.08	39398	2.76		100000	100000	
P 31	31	1	He	216.478	216.478	8.88	2053	8.09		100000	100000	
K 39	39	1	He	219.871	219.871	6.14	150520	3.16		100000	100000	
Ca 40	40	2	H2	463.705	463.705	6.77	1646269	11.44		100000	100000	
Ti 47	47	1	He	39.857	39.857	1.31	4239	0.43		2000	2000	
V 51	51	1	He	0.197	0.197	8.89	1293	2.79		2000	2000	
Cr 52	52	1	He	9.285	9.285	4.20	32610	3.54		2000	2000	
Mn 55	55	1	He	12.554	12.554	2.49	28977	1.86		22000	22000	
Fe 56	56	1	He	483.289	483.289	6.22	1369318	5.63		100000	100000	
Co 59	59	1	He	0.764	0.764	5.33	3584	5.73		2000	2000	
Ni 60	60	1	He	9.206	9.206	2.42	10522	1.91		2000	2000	
Cu 63	63	1	He	437.310	437.310	3.90	1254565	3.62		2000	2000	
Zn 66	66	1	He	776.389	776.389	2.52	414328	3.68		2000	2000	
As 75	75	1	He	520.509	520.509	2.60	197983	3.92		2000	2000	
Se 78	78	2	H2	19.396	19.396	3.04	4108	5.57		2000	2000	
Sr 88	88	1	He	2.006	2.006	0.80	7159	2.24		2000	2000	
Mo 95	95	1	He	171.008	171.008	1.82	278872	3.31		2000	2000	
Ag 107	107	1	He	2.192	2.192	4.60	10316	3.69		500	500	
Cd 111	111	1	He	78.883	78.883	6.10	62918	4.87		2000	2000	
Sn 118	118	1	He	49.979	49.979	3.65	112072	2.62		2000	2000	
Sb 121	121	1	He	195.085	195.085	3.54	515457	2.56		2000	2000	
Ba 137	137	1	He	22.896	22.896	4.50	25408	3.15		2000	2000	
Ce 140	140	1	He	0.464	0.464	6.18	6061	4.64		2000	2000	
Gd 157	157	1	He	0.181	0.181	3.13	512	2.93		2000	2000	
Au 197	197	1	He	-0.101	-0.101	-10.69	206	16.64		2000	2000	
Tl 205	205	1	He	1.088	1.088	3.93	8267	3.85		500	500	
Pb206	206	1	He	2373.612	2373.612	2.65	6317741	2.67		12000	12000	
Pb207	207	1	He	2298.626	2298.626	4.44	5237324	4.45		12000	12000	
Pb 208	208	1	He	2359.245	2359.245	3.10	24153580	3.12		12000	12000	
U 238	238	1	He	0.624	0.624	6.31	6132	6.09		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6362301	0.97	7122799	89.32	80	120	
Sc_45	45	2	H2	35981699	5.18	38319065	93.90	80	120	
Ge_72	72	1	He	3670118	2.40	3981131	92.19	80	120	
Ge_72	72	2	H2	10961802	2.69	11928338	91.90	80	120	
In_115	115	1	He	4220353	1.46	4490435	93.99	80	120	
In_115	115	2	H2	10017584	2.26	10423245	96.11	80	120	
Tm_169	169	1	He	4195572	0.03	4215469	99.53	80	120	

Sample Table

Sample Name	320-22657-A-7-B
Data File Name	169SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:06:09-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.121	0.121	11.53	65	7.23		2000	2000	
Be 9	9	2	H2	-0.027	-0.027	-16.39	2	25.00		2000	2000	
B 11	11	2	H2	3.891	3.891	42.41	3198	12.75		10000	10000	
Na 23	23	1	He	712.526	712.526	5.94	496255	2.89		100000	100000	
Mg 24	24	1	He	526.323	526.323	5.63	172780	3.61		100000	100000	
Al 27	27	1	He	247.124	247.124	4.54	39513	2.23		100000	100000	
P 31	31	1	He	222.853	222.853	4.22	2088	2.76		100000	100000	
K 39	39	1	He	96.824	96.824	10.93	101103	2.58		100000	100000	
Ca 40	40	2	H2	540.355	540.355	8.05	1911595	13.85		100000	100000	
Ti 47	47	1	He	45.185	45.185	7.28	4744	4.70		2000	2000	
V 51	51	1	He	0.227	0.227	7.08	1359	1.77		2000	2000	
Cr 52	52	1	He	31.695	31.695	6.82	101366	4.23		2000	2000	
Mn 55	55	1	He	20.554	20.554	5.69	46757	3.71		22000	22000	
Fe 56	56	1	He	542.462	542.462	4.85	1518620	3.12		100000	100000	
Co 59	59	1	He	1.444	1.444	7.71	6504	5.20		2000	2000	
Ni 60	60	1	He	33.757	33.757	5.53	36837	3.48		2000	2000	
Cu 63	63	1	He	36.655	36.655	5.18	104625	2.87		2000	2000	
Zn 66	66	1	He	32.965	32.965	5.64	17743	5.80		2000	2000	
As 75	75	1	He	2.738	2.738	7.50	1380	5.87		2000	2000	
Se 78	78	2	H2	0.831	0.831	18.03	210	17.80		2000	2000	
Sr 88	88	1	He	1.879	1.879	2.86	6574	3.05		2000	2000	
Mo 95	95	1	He	64.228	64.228	2.04	102489	2.38		2000	2000	
Ag 107	107	1	He	2.938	2.938	2.14	13489	1.55		500	500	
Cd 111	111	1	He	2.549	2.549	5.36	1999	4.81		2000	2000	
Sn 118	118	1	He	8.411	8.411	2.62	18840	1.94		2000	2000	
Sb 121	121	1	He	0.797	0.797	11.39	3080	7.31		2000	2000	
Ba 137	137	1	He	16.178	16.178	3.65	17549	3.37		2000	2000	
Ce 140	140	1	He	0.458	0.458	3.91	5851	3.21		2000	2000	
Gd 157	157	1	He	0.202	0.202	11.97	556	11.10		2000	2000	
Au 197	197	1	He	-0.112	-0.112	-11.53	168	23.03		2000	2000	
Tl 205	205	1	He	0.054	0.054	10.75	572	9.03		500	500	
Pb206	206	1	He	8.362	8.362	4.77	21992	3.47		12000	12000	
Pb207	207	1	He	7.935	7.935	6.13	17874	5.49		12000	12000	
Pb 208	208	1	He	8.156	8.156	5.39	82537	4.34		12000	12000	
U 238	238	1	He	0.602	0.602	5.46	5790	4.08		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6291672	2.89	7122799	88.33	80	120	
Sc_45	45	2	H2	36027401	6.34	38319065	94.02	80	120	
Ge_72	72	1	He	3589224	0.45	3981131	90.16	80	120	
Ge_72	72	2	H2	11029440	4.27	11928338	92.46	80	120	
In_115	115	1	He	4121840	0.64	4490435	91.79	80	120	
In_115	115	2	H2	9975446	1.75	10423245	95.70	80	120	
Tm_169	169	1	He	4102026	1.86	4215469	97.31	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-9-B
Data File Name	170SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:09:41-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.136	0.136	29.87	68	14.89		2000	2000	
Be 9	9	2	H2	-0.036	-0.036	-14.83	1	91.65		2000	2000	
B 11	11	2	H2	4.863	4.863	11.42	3281	7.51		10000	10000	
Na 23	23	1	He	759.297	759.297	4.88	531838	4.26		100000	100000	
Mg 24	24	1	He	459.498	459.498	4.90	153179	4.72		100000	100000	
Al 27	27	1	He	251.736	251.736	3.67	40835	3.55		100000	100000	
P 31	31	1	He	228.621	228.621	10.71	2171	9.68		100000	100000	
K 39	39	1	He	80.114	80.114	11.61	95993	3.22		100000	100000	
Ca 40	40	2	H2	515.672	515.672	6.38	1806809	11.61		100000	100000	
Ti 47	47	1	He	44.982	44.982	6.76	4795	6.70		2000	2000	
V 51	51	1	He	0.340	0.340	17.95	1686	9.69		2000	2000	
Cr 52	52	1	He	39.695	39.695	5.08	127943	4.73		2000	2000	
Mn 55	55	1	He	16.706	16.706	4.61	38604	4.60		22000	22000	
Fe 56	56	1	He	815.709	815.709	4.26	2314252	3.35		100000	100000	
Co 59	59	1	He	1.498	1.498	4.72	6841	4.16		2000	2000	
Ni 60	60	1	He	44.375	44.375	4.87	48984	4.68		2000	2000	
Cu 63	63	1	He	35.650	35.650	5.93	103278	5.65		2000	2000	
Zn 66	66	1	He	29.351	29.351	2.26	15724	4.79		2000	2000	
As 75	75	1	He	6.284	6.284	3.61	2675	6.01		2000	2000	
Se 78	78	2	H2	0.689	0.689	19.66	176	16.92		2000	2000	
Sr 88	88	1	He	2.227	2.227	4.05	7682	6.42		2000	2000	
Mo 95	95	1	He	72.822	72.822	0.52	115183	3.31		2000	2000	
Ag 107	107	1	He	2.844	2.844	5.18	12727	4.03		500	500	
Cd 111	111	1	He	1.880	1.880	6.25	1441	5.38		2000	2000	
Sn 118	118	1	He	4.026	4.026	3.88	9042	2.51		2000	2000	
Sb 121	121	1	He	2.402	2.402	3.88	7033	2.22		2000	2000	
Ba 137	137	1	He	16.823	16.823	5.34	17786	4.70		2000	2000	
Ce 140	140	1	He	0.498	0.498	4.77	6186	4.46		2000	2000	
Gd 157	157	1	He	0.225	0.225	4.28	613	3.77		2000	2000	
Au 197	197	1	He	-0.085	-0.085	-10.47	250	10.58		2000	2000	
Tl 205	205	1	He	0.055	0.055	16.26	573	11.23		500	500	
Pb206	206	1	He	27.315	27.315	3.55	71292	3.22		12000	12000	
Pb207	207	1	He	26.127	26.127	3.30	58381	2.86		12000	12000	
Pb 208	208	1	He	26.835	26.835	3.67	269431	3.32		12000	12000	
U 238	238	1	He	0.691	0.691	5.22	6619	4.62		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6379971	1.75	7122799	89.57	80	120	
Sc_45	45	2	H2	35648117	5.52	38319065	93.03	80	120	
Ge_72	72	1	He	3558097	3.03	3981131	89.37	80	120	
Ge_72	72	2	H2	10803523	1.42	11928338	90.57	80	120	
In_115	115	1	He	4018268	1.25	4490435	89.49	80	120	
In_115	115	2	H2	9620444	0.79	10423245	92.30	80	120	
Tm_169	169	1	He	4100723	0.48	4215469	97.28	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	171_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:13:11-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	89.145	2.340	17449	7.49	100	89.1	90	110	> +/- 10%
Be 9	9	2	H2	89.960	3.419	12181	8.54	100	90.0	90	110	> +/- 10%
Na 23	23	1	He	4910.861	5.301	2889241	3.95	5100	96.3	90	110	
Mg 24	24	1	He	4874.075	5.669	1537860	4.47	5100	95.6	90	110	
Al 27	27	1	He	4931.276	4.465	753995	3.24	5100	96.7	90	110	
P 31	31	1	He	4934.567	4.353	43407	3.12	5000	98.7	90	110	
K 39	39	1	He	4993.619	5.649	1928246	4.28	5100	97.9	90	110	
Ca 40	40	2	H2	4900.415	6.312	16098958	11.50	5100	96.1	90	110	
Ti 47	47	1	He	198.162	5.268	20016	4.10	200	99.1	90	110	
V 51	51	1	He	100.367	3.493	260921	2.27	100	100.4	90	110	
Cr 52	52	1	He	99.536	4.511	299990	3.26	100	99.5	90	110	
Mn 55	55	1	He	99.261	4.263	217249	3.04	100	99.3	90	110	
Fe 56	56	1	He	4985.371	4.078	13435075	2.99	5100	97.8	90	110	
Co 59	59	1	He	100.273	5.052	422729	3.83	100	100.3	90	110	
Ni 60	60	1	He	99.980	4.452	104398	3.21	100	100.0	90	110	
Cu 63	63	1	He	99.435	4.648	272669	3.41	100	99.4	90	110	
Zn 66	66	1	He	94.843	3.558	49741	3.56	100	94.8	90	110	
As 75	75	1	He	97.048	2.252	36212	2.31	100	97.0	90	110	
Se 78	78	2	H2	96.705	5.846	19901	5.92	100	96.7	90	110	
Sr 88	88	1	He	97.031	3.150	325393	3.12	100	97.0	90	110	
Mo 95	95	1	He	193.126	3.444	306440	3.41	200	96.6	90	110	
Ag 107	107	1	He	48.977	4.494	213104	2.74	50	98.0	90	110	
Cd 111	111	1	He	99.370	4.783	73699	2.99	100	99.4	90	110	
Sn 118	118	1	He	100.250	4.537	208520	2.81	100	100.3	90	110	
Sb 121	121	1	He	50.366	5.721	124428	3.94	50	100.7	90	110	
Ba 137	137	1	He	98.676	5.322	101705	3.56	100	98.7	90	110	
Ce 140	140	1	He	99.670	5.873	1176836	4.15	100	99.7	90	110	
Gd 157	157	1	He	96.057	3.774	240063	3.99	100	96.1	90	110	
Au 197	197	1	He	96.483	2.574	290365	2.82	100	96.5	90	110	
Tl 205	205	1	He	48.574	4.265	341242	4.13	50	97.1	90	110	
Pb206	206	1	He	97.311	3.443	245006	3.13	100	97.3	1	10000	
Pb207	207	1	He	96.591	3.185	208203	3.37	100	96.6	1	10000	
Pb 208	208	1	He	96.969	3.257	939161	3.27	100	97.0	90	110	
U 238	238	1	He	97.608	2.460	872929	3.11	100	97.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6070196	1.25	7122799	85.22	80	120	
Sc_45	45	2	H2	34565183	5.11	38319065	90.20	80	120	
Ge_72	72	1	He	3571509	0.67	3981131	89.71	80	120	
Ge_72	72	2	H2	10728797	1.80	11928338	89.94	80	120	
In_115	115	1	He	3924692	1.84	4490435	87.40	80	120	
In_115	115	2	H2	9308647	0.19	10423245	89.31	80	120	
Tm_169	169	1	He	3965605	1.30	4215469	94.07	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	172_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:16:38-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.178	-2.7	4	17.6	10	
Be 9	9	2	H2	-0.034	-32.7	1	137.8	1	
Na 23	23	1	He	-77.587	-1.3	25732	1.3	50	>+/-RL
Mg 24	24	1	He	-0.880	-14.8	519	9.6	50	
Al 27	27	1	He	-0.100	-130.4	361	8.4	50	
P 31	31	1	He	0.729	79.7	65	9.9	50	
K 39	39	1	He	-18.002	-22.8	55375	1.1	50	
Ca 40	40	2	H2	0.042	3094.3	65712	11.6	50	
Ti 47	47	1	He	0.008	823.0	23	27.0	5	
V 51	51	1	He	-0.108	-19.5	449	9.9	10	
Cr 52	52	1	He	-0.010	-813.9	3456	4.3	2	
Mn 55	55	1	He	0.013	111.5	219	12.9	1	
Fe 56	56	1	He	-0.035	-206.5	4346	6.2	50	
Co 59	59	1	He	-0.003	-102.8	185	4.9	1	
Ni 60	60	1	He	-0.009	-546.9	463	11.0	2	
Cu 63	63	1	He	-0.042	-32.2	649	4.6	2	
Zn 66	66	1	He	0.014	438.6	576	5.0	5	
As 75	75	1	He	-0.126	-60.7	321	6.5	2	
Se 78	78	2	H2	0.053	63.5	45	16.0	2	
Sr 88	88	1	He	-0.008	-86.1	223	9.0	5	
Mo 95	95	1	He	-0.007	-254.6	84	33.1	2	
Ag 107	107	1	He	0.000	1868.1	59	23.6	1	
Cd 111	111	1	He	-0.010	-12.8	5	21.7	1	
Sn 118	118	1	He	0.010	175.3	512	5.9	10	
Sb 121	121	1	He	-0.017	-327.6	967	15.5	2	
Ba 137	137	1	He	0.008	329.9	40	66.1	1	
Ce 140	140	1	He	-0.006	-15.5	87	13.9	5	
Gd 157	157	1	He	-0.003	-40.2	24	7.9	1	
Au 197	197	1	He	-0.065	-54.9	297	31.9	5	
Tl 205	205	1	He	-0.008	-29.4	116	12.0	1	
Pb206	206	1	He	-0.028	-18.3	162	4.3	1	
Pb207	207	1	He	-0.026	-43.6	141	19.1	1	
Pb 208	208	1	He	-0.027	-19.0	638	6.9	1	
U 238	238	1	He	0.000	-2960.6	213	35.5	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6153327	3.04	7122799	86.39	80	120	
Sc_45	45	2	H2	35196052	4.94	38319065	91.85	80	120	
Ge_72	72	1	He	3640593	2.36	3981131	91.45	80	120	
Ge_72	72	2	H2	10915453	1.87	11928338	91.51	80	120	
In_115	115	1	He	4046220	3.10	4490435	90.11	80	120	
In_115	115	2	H2	9468294	0.22	10423245	90.84	80	120	
Tm_169	169	1	He	3915077	3.50	4215469	92.87	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	173_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:20:13-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	92.933	4.047	17477	7.90	100	92.9	90	110	
Be 9	9	2	H2	94.335	4.013	12269	7.72	100	94.3	90	110	
Na 23	23	1	He	4977.228	4.884	2917444	5.17	5100	97.6	90	110	
Mg 24	24	1	He	4924.621	3.033	1548490	3.36	5100	96.6	90	110	
Al 27	27	1	He	4988.592	4.245	760161	4.81	5100	97.8	90	110	
P 31	31	1	He	4949.003	4.183	43384	4.64	5000	99.0	90	110	
K 39	39	1	He	5076.325	3.860	1952499	4.14	5100	99.5	90	110	
Ca 40	40	2	H2	5075.706	9.781	16024891	13.80	5100	99.5	90	110	
Ti 47	47	1	He	196.905	4.543	19823	5.16	200	98.5	90	110	
V 51	51	1	He	99.845	4.840	258679	5.50	100	99.8	90	110	
Cr 52	52	1	He	99.510	4.061	298902	4.71	100	99.5	90	110	
Mn 55	55	1	He	100.176	4.154	218510	4.88	100	100.2	90	110	
Fe 56	56	1	He	5040.644	5.526	13540321	6.54	5100	98.8	90	110	
Co 59	59	1	He	100.475	3.764	422223	4.86	100	100.5	90	110	
Ni 60	60	1	He	100.497	5.670	104589	6.30	100	100.5	90	110	
Cu 63	63	1	He	100.589	4.175	274918	5.02	100	100.6	90	110	
Zn 66	66	1	He	97.278	3.344	50294	3.48	100	97.3	90	110	
As 75	75	1	He	98.242	3.877	36156	5.10	100	98.2	90	110	
Se 78	78	2	H2	100.733	4.650	20036	6.99	100	100.7	90	110	
Sr 88	88	1	He	98.895	3.358	327135	4.69	100	98.9	90	110	
Mo 95	95	1	He	195.686	3.825	306260	4.78	200	97.8	90	110	
Ag 107	107	1	He	49.284	2.527	213671	4.05	50	98.6	90	110	
Cd 111	111	1	He	98.940	3.941	73124	5.22	100	98.9	90	110	
Sn 118	118	1	He	101.077	3.232	209470	4.35	100	101.1	90	110	
Sb 121	121	1	He	50.479	2.811	124276	4.19	50	101.0	90	110	
Ba 137	137	1	He	100.317	3.910	103039	5.13	100	100.3	90	110	
Ce 140	140	1	He	99.483	3.941	1170613	5.07	100	99.5	90	110	
Gd 157	157	1	He	98.050	4.536	238798	4.73	100	98.1	90	110	
Au 197	197	1	He	98.681	4.639	289403	4.81	100	98.7	90	110	
Tl 205	205	1	He	49.414	5.722	338342	5.94	50	98.8	90	110	
Pb206	206	1	He	97.760	4.576	239892	4.75	100	97.8	1	10000	
Pb207	207	1	He	98.390	4.183	206672	4.32	100	98.4	1	10000	
Pb 208	208	1	He	98.052	4.171	925477	4.32	100	98.1	90	110	
U 238	238	1	He	98.184	3.786	855586	3.74	100	98.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6046872	1.79	7122799	84.89	80	120	
Sc_45	45	2	H2	33208789	4.13	38319065	86.66	80	120	
Ge_72	72	1	He	3522745	3.00	3981131	88.49	80	120	
Ge_72	72	2	H2	10363775	3.33	11928338	86.88	80	120	
In_115	115	1	He	3907529	1.64	4490435	87.02	80	120	
In_115	115	2	H2	8914859	2.01	10423245	85.53	80	120	
Tm_169	169	1	He	3864385	0.70	4215469	91.67	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	174_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:23:41-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.177	-3.6	5	29.4	10	
Be 9	9	2	H2	-0.038	-10.3	1	100.0	1	
Na 23	23	1	He	-78.864	-1.6	24606	1.4	50	>+/-RL
Mg 24	24	1	He	-0.760	-15.2	548	5.5	50	
Al 27	27	1	He	0.001	19480.3	370	6.4	50	
P 31	31	1	He	-0.348	-581.6	54	31.6	50	
K 39	39	1	He	-16.577	-11.6	55078	1.5	50	
Ca 40	40	2	H2	0.146	943.1	64725	13.1	50	
Ti 47	47	1	He	0.064	67.9	28	14.3	5	
V 51	51	1	He	-0.105	-11.8	451	6.6	10	
Cr 52	52	1	He	0.024	264.7	3504	3.8	2	
Mn 55	55	1	He	0.009	327.0	207	30.0	1	
Fe 56	56	1	He	-0.003	-1542.0	4365	4.9	50	
Co 59	59	1	He	0.001	540.7	200	9.5	1	
Ni 60	60	1	He	-0.012	-89.9	453	4.0	2	
Cu 63	63	1	He	-0.056	-34.0	601	7.3	2	
Zn 66	66	1	He	0.001	2756.2	571	5.3	5	
As 75	75	1	He	-0.159	-13.0	310	4.5	2	
Se 78	78	2	H2	0.037	98.2	42	21.5	2	
Sr 88	88	1	He	-0.004	-137.3	235	10.1	5	
Mo 95	95	1	He	-0.006	-408.4	88	45.8	2	
Ag 107	107	1	He	0.001	600.3	60	25.5	1	
Cd 111	111	1	He	-0.008	-37.1	7	34.6	1	
Sn 118	118	1	He	0.004	304.1	496	7.3	10	
Sb 121	121	1	He	0.034	145.0	1083	9.4	2	
Ba 137	137	1	He	-0.011	-110.4	20	60.1	1	
Ce 140	140	1	He	-0.004	-25.8	118	7.1	5	
Gd 157	157	1	He	-0.005	-58.1	19	36.7	1	
Au 197	197	1	He	-0.072	-32.5	268	24.3	5	
Tl 205	205	1	He	-0.002	-341.3	149	31.7	1	
Pb206	206	1	He	-0.027	-21.4	159	8.5	1	
Pb207	207	1	He	-0.022	-27.4	143	8.1	1	
Pb 208	208	1	He	-0.028	-21.2	614	7.7	1	
U 238	238	1	He	0.004	166.5	248	24.4	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6058438	1.69	7122799	85.06	80	120	
Sc_45	45	2	H2	34462975	6.01	38319065	89.94	80	120	
Ge_72	72	1	He	3646710	2.04	3981131	91.60	80	120	
Ge_72	72	2	H2	10877184	3.60	11928338	91.19	80	120	
In_115	115	1	He	4011474	2.85	4490435	89.33	80	120	
In_115	115	2	H2	9319580	1.91	10423245	89.41	80	120	
Tm_169	169	1	He	3792079	1.25	4215469	89.96	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-11-B
Data File Name	175SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:27:15-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.104	0.104	31.45	60	17.04		2000	2000	
Be 9	9	2	H2	-0.011	-0.011	-37.84	4	6.93		2000	2000	
B 11	11	2	H2	27.791	27.791	4.50	6031	9.03		10000	10000	
Na 23	23	1	He	934.257	934.257	4.61	614609	3.98		100000	100000	
Mg 24	24	1	He	829.055	829.055	3.86	265867	4.05		100000	100000	
Al 27	27	1	He	662.485	662.485	4.30	103010	4.37		100000	100000	
P 31	31	1	He	262.861	262.861	9.44	2398	8.64		100000	100000	
K 39	39	1	He	215.110	215.110	5.39	143736	3.14		100000	100000	
Ca 40	40	2	H2	583.639	583.639	5.59	1992153	12.39		100000	100000	
Ti 47	47	1	He	57.957	57.957	2.55	5950	1.95		2000	2000	
V 51	51	1	He	0.276	0.276	8.74	1457	3.61		2000	2000	
Cr 52	52	1	He	38.568	38.568	4.88	119961	4.54		2000	2000	
Mn 55	55	1	He	17.197	17.197	2.73	38314	3.24		22000	22000	
Fe 56	56	1	He	1063.814	1063.814	5.72	2909741	5.94		100000	100000	
Co 59	59	1	He	1.151	1.151	2.18	5116	2.27		2000	2000	
Ni 60	60	1	He	33.738	33.738	3.80	36025	3.75		2000	2000	
Cu 63	63	1	He	33.817	33.817	4.07	94508	3.96		2000	2000	
Zn 66	66	1	He	37.570	37.570	3.48	19472	3.20		2000	2000	
As 75	75	1	He	3.069	3.069	4.83	1453	3.37		2000	2000	
Se 78	78	2	H2	0.752	0.752	9.62	182	5.55		2000	2000	
Sr 88	88	1	He	3.215	3.215	4.94	10707	5.73		2000	2000	
Mo 95	95	1	He	53.656	53.656	3.70	82784	3.32		2000	2000	
Ag 107	107	1	He	1.695	1.695	2.32	7410	4.23		500	500	
Cd 111	111	1	He	0.860	0.860	6.93	649	7.03		2000	2000	
Sn 118	118	1	He	7.419	7.419	2.19	15837	4.43		2000	2000	
Sb 121	121	1	He	2.279	2.279	3.83	6550	5.25		2000	2000	
Ba 137	137	1	He	49.995	49.995	3.86	51428	4.85		2000	2000	
Ce 140	140	1	He	1.110	1.110	3.12	13235	2.86		2000	2000	
Gd 157	157	1	He	0.478	0.478	7.34	1207	8.98		2000	2000	
Au 197	197	1	He	-0.087	-0.087	-9.00	232	9.23		2000	2000	
Tl 205	205	1	He	0.036	0.036	24.01	413	11.43		500	500	
Pb206	206	1	He	8.565	8.565	2.26	21439	3.54		12000	12000	
Pb207	207	1	He	8.150	8.150	3.45	17467	3.88		12000	12000	
Pb 208	208	1	He	8.308	8.308	2.73	80018	3.44		12000	12000	
U 238	238	1	He	1.004	1.004	1.51	9053	2.46		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6151350	1.24	7122799	86.36	80	120	
Sc_45	45	2	H2	34870144	7.00	38319065	91.00	80	120	
Ge_72	72	1	He	3471665	3.54	3981131	87.20	80	120	
Ge_72	72	2	H2	10422360	2.47	11928338	87.37	80	120	
In_115	115	1	He	3912774	2.39	4490435	87.14	80	120	
In_115	115	2	H2	9150079	1.78	10423245	87.79	80	120	
Tm_169	169	1	He	3903495	2.87	4215469	92.60	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-13-A
Data File Name	176SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:30:46-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.045	-0.045	-72.98	31	23.76		2000	2000	
Be 9	9	2	H2	-0.004	-0.004	-240.18	5	20.15		2000	2000	
B 11	11	2	H2	-2.253	-2.253	-42.56	2329	10.42		10000	10000	
Na 23	23	1	He	264.419	264.419	4.43	217476	4.53		100000	100000	
Mg 24	24	1	He	385.611	385.611	4.82	120064	6.13		100000	100000	
Al 27	27	1	He	584.137	584.137	4.37	87909	5.21		100000	100000	
P 31	31	1	He	294.141	294.141	7.32	2590	7.61		100000	100000	
K 39	39	1	He	74.805	74.805	7.13	87601	3.37		100000	100000	
Ca 40	40	2	H2	232.585	232.585	6.71	830106	11.49		100000	100000	
Ti 47	47	1	He	52.245	52.245	7.01	5191	7.36		2000	2000	
V 51	51	1	He	0.068	0.068	47.32	881	7.68		2000	2000	
Cr 52	52	1	He	7.013	7.013	3.51	23863	3.88		2000	2000	
Mn 55	55	1	He	4.601	4.601	3.48	10052	4.69		22000	22000	
Fe 56	56	1	He	100.266	100.266	3.82	269175	4.73		100000	100000	
Co 59	59	1	He	0.417	0.417	10.71	1917	9.75		2000	2000	
Ni 60	60	1	He	3.761	3.761	4.40	4293	5.71		2000	2000	
Cu 63	63	1	He	7.095	7.095	3.85	19768	4.64		2000	2000	
Zn 66	66	1	He	4.657	4.657	7.88	2844	6.83		2000	2000	
As 75	75	1	He	0.086	0.086	78.32	377	7.25		2000	2000	
Se 78	78	2	H2	0.179	0.179	23.91	66	11.44		2000	2000	
Sr 88	88	1	He	2.080	2.080	6.47	6899	6.88		2000	2000	
Mo 95	95	1	He	58.750	58.750	5.65	89240	6.44		2000	2000	
Ag 107	107	1	He	0.050	0.050	12.87	266	8.36		500	500	
Cd 111	111	1	He	0.138	0.138	11.48	112	7.78		2000	2000	
Sn 118	118	1	He	3.744	3.744	4.52	8035	3.45		2000	2000	
Sb 121	121	1	He	0.191	0.191	17.34	1409	6.95		2000	2000	
Ba 137	137	1	He	16.871	16.871	6.46	16966	5.15		2000	2000	
Ce 140	140	1	He	1.261	1.261	6.32	14667	6.37		2000	2000	
Gd 157	157	1	He	0.569	0.569	6.81	1431	8.17		2000	2000	
Au 197	197	1	He	-0.126	-0.126	-10.80	118	31.18		2000	2000	
Tl 205	205	1	He	-0.017	-0.017	-15.86	50	35.28		500	500	
Pb206	206	1	He	2.767	2.767	3.35	7078	4.84		12000	12000	
Pb207	207	1	He	2.698	2.698	2.34	5910	3.47		12000	12000	
Pb 208	208	1	He	2.732	2.732	1.63	26908	3.80		12000	12000	
U 238	238	1	He	1.180	1.180	6.99	10601	9.14		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5949902	2.22	7122799	83.53	80	120	
Sc_45	45	2	H2	34758496	5.42	38319065	90.71	80	120	
Ge_72	72	1	He	3415491	0.99	3981131	85.79	80	120	
Ge_72	72	2	H2	10112187	1.12	11928338	84.77	80	120	
In_115	115	1	He	3824190	3.18	4490435	85.16	80	120	
In_115	115	2	H2	9021430	1.42	10423245	86.55	80	120	
Tm_169	169	1	He	3900786	2.54	4215469	92.54	80	120	

Sample Table

Sample Name	320-22657-A-15-A
Data File Name	177SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:34:20-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.142	-0.142	-6.90	11	13.64		2000	2000	
Be 9	9	2	H2	69.660	69.660	1.07	9254	7.17		2000	2000	
B 11	11	2	H2	-16.083	-16.083	-1.02	615	8.87		10000	10000	
Na 23	23	1	He	-31.603	-31.603	-12.20	49522	1.98		100000	100000	
Mg 24	24	1	He	383.939	383.939	4.86	116551	3.21		100000	100000	
Al 27	27	1	He	211.168	211.168	5.70	31213	4.04		100000	100000	
P 31	31	1	He	106.439	106.439	4.05	950	5.82		100000	100000	
K 39	39	1	He	-3.916	-3.916	-146.98	57296	2.41		100000	100000	
Ca 40	40	2	H2	57.302	57.302	5.74	247297	11.09		100000	100000	
Ti 47	47	1	He	17.807	17.807	4.19	1740	4.72		2000	2000	
V 51	51	1	He	-0.022	-0.022	-96.35	637	8.80		2000	2000	
Cr 52	52	1	He	993.065	993.065	4.66	2832667	3.01		2000	2000	
Mn 55	55	1	He	101.458	101.458	5.05	212344	3.55		22000	22000	
Fe 56	56	1	He	33.998	33.998	3.68	91790	2.42		100000	100000	
Co 59	59	1	He	113.688	113.688	4.96	458335	3.43		2000	2000	
Ni 60	60	1	He	352.972	352.972	5.14	351366	4.04		2000	2000	
Cu 63	63	1	He	140.350	140.350	5.38	367750	3.95		2000	2000	
Zn 66	66	1	He	419.501	419.501	3.20	202937	3.53		2000	2000	
As 75	75	1	He	453.604	453.604	3.20	156253	3.51		2000	2000	
Se 78	78	2	H2	221.955	221.955	0.70	43225	4.63		2000	2000	
Sr 88	88	1	He	0.706	0.706	1.74	2428	1.93		2000	2000	
Mo 95	95	1	He	20.249	20.249	1.03	29974	1.36		2000	2000	
Ag 107	107	1	He	262.536	262.536	1.40	1116969	3.09		500	500	
Cd 111	111	1	He	598.472	598.472	1.36	434105	3.57		2000	2000	
Sn 118	118	1	He	0.103	0.103	23.64	673	7.69		2000	2000	
Sb 121	121	1	He	192.296	192.296	0.38	461970	2.52		2000	2000	
Ba 137	137	1	He	199.254	199.254	0.84	200870	3.50		2000	2000	
Ce 140	140	1	He	0.431	0.431	4.48	5143	6.94		2000	2000	
Gd 157	157	1	He	0.217	0.217	13.61	553	11.04		2000	2000	
Au 197	197	1	He	-0.137	-0.137	-8.36	83	38.16		2000	2000	
Tl 205	205	1	He	263.984	263.984	5.70	1793797	4.92		500	500	
Pb206	206	1	He	480.924	480.924	4.31	1170984	3.90		12000	12000	
Pb207	207	1	He	458.658	458.658	4.55	955922	3.87		12000	12000	
Pb 208	208	1	He	480.901	480.901	3.88	4503943	3.49		12000	12000	
U 238	238	1	He	0.394	0.394	5.45	3623	7.42		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5807136	3.01	7122799	81.53	80	120	
Sc_45	45	2	H2	33940799	6.87	38319065	88.57	80	120	
Ge_72	72	1	He	3322980	0.36	3981131	83.47	80	120	
Ge_72	72	2	H2	10161167	4.49	11928338	85.19	80	120	
In_115	115	1	He	3836288	2.74	4490435	85.43	80	120	
In_115	115	2	H2	9013010	2.33	10423245	86.47	80	120	
Tm_169	169	1	He	3840331	4.35	4215469	91.10	80	120	

Sample Report

Sample Table

Sample Name	SD 320-22657-A-15-A@5
Data File Name	178SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:37:51-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.168	-0.168	-5.49	6	30.70		2000	2000	
Be 9	9	2	H2	13.898	13.898	2.45	1817	7.23		2000	2000	
B 11	11	2	H2	-16.448	-16.448	-1.16	561	7.44		10000	10000	
Na 23	23	1	He	-79.322	-79.322	-0.74	23121	1.20		100000	100000	
Mg 24	24	1	He	76.983	76.983	4.46	23759	3.37		100000	100000	
Al 27	27	1	He	43.756	43.756	2.22	6691	2.05		100000	100000	
P 31	31	1	He	17.941	17.941	29.55	203	20.17		100000	100000	
K 39	39	1	He	-23.454	-23.454	-16.95	49853	1.46		100000	100000	
Ca 40	40	2	H2	2.065	2.065	42.99	68632	11.56		100000	100000	
Ti 47	47	1	He	3.480	3.480	9.42	353	8.52		2000	2000	
V 51	51	1	He	-0.100	-0.100	-5.62	441	2.95		2000	2000	
Cr 52	52	1	He	196.253	196.253	3.10	557462	2.08		2000	2000	
Mn 55	55	1	He	20.670	20.670	4.05	43016	2.88		22000	22000	
Fe 56	56	1	He	5.625	5.625	2.97	18514	1.29		100000	100000	
Co 59	59	1	He	23.351	23.351	3.75	93460	3.18		2000	2000	
Ni 60	60	1	He	71.602	71.602	2.58	70999	2.22		2000	2000	
Cu 63	63	1	He	28.986	28.986	3.56	75841	2.34		2000	2000	
Zn 66	66	1	He	87.677	87.677	4.47	43176	2.68		2000	2000	
As 75	75	1	He	92.467	92.467	4.58	32385	3.09		2000	2000	
Se 78	78	2	H2	45.778	45.778	6.71	8985	7.61		2000	2000	
Sr 88	88	1	He	0.114	0.114	23.96	587	11.52		2000	2000	
Mo 95	95	1	He	3.962	3.962	6.74	5983	4.44		2000	2000	
Ag 107	107	1	He	51.508	51.508	3.44	223485	2.68		500	500	
Cd 111	111	1	He	121.572	121.572	3.59	89912	2.85		2000	2000	
Sn 118	118	1	He	0.065	0.065	49.32	609	9.57		2000	2000	
Sb 121	121	1	He	37.634	37.634	3.21	92968	1.98		2000	2000	
Ba 137	137	1	He	40.443	40.443	2.87	41593	2.50		2000	2000	
Ce 140	140	1	He	0.070	0.070	6.01	987	4.64		2000	2000	
Gd 157	157	1	He	0.032	0.032	48.91	111	34.51		2000	2000	
Au 197	197	1	He	-0.152	-0.152	-3.49	39	40.51		2000	2000	
Tl 205	205	1	He	50.005	50.005	3.67	347746	1.86		500	500	
Pb206	206	1	He	96.122	96.122	4.37	239543	2.14		12000	12000	
Pb207	207	1	He	91.299	91.299	5.24	194753	3.13		12000	12000	
Pb 208	208	1	He	93.133	93.133	4.65	892753	2.55		12000	12000	
U 238	238	1	He	0.054	0.054	6.44	696	3.87		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5752928	1.59	7122799	80.77	80	120	
Sc_45	45	2	H2	33350631	7.89	38319065	87.03	80	120	
Ge_72	72	1	He	3352736	2.94	3981131	84.22	80	120	
Ge_72	72	2	H2	10210508	2.53	11928338	85.60	80	120	
In_115	115	1	He	3912359	1.35	4490435	87.13	80	120	
In_115	115	2	H2	9039709	2.23	10423245	86.73	80	120	
Tm_169	169	1	He	3927218	2.28	4215469	93.16	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-16-A
Data File Name	179SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:41:26-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.156	-0.156	-11.18	9	43.97		2000	2000	
Be 9	9	2	H2	89.455	89.455	2.16	12088	9.24		2000	2000	
B 11	11	2	H2	-16.626	-16.626	-1.48	559	9.85		10000	10000	
Na 23	23	1	He	-36.639	-36.639	-1.45	46502	2.83		100000	100000	
Mg 24	24	1	He	464.898	464.898	1.90	140244	4.65		100000	100000	
Al 27	27	1	He	194.261	194.261	1.06	28596	4.18		100000	100000	
P 31	31	1	He	92.236	92.236	5.74	826	8.20		100000	100000	
K 39	39	1	He	-0.857	-0.857	-405.37	58043	2.23		100000	100000	
Ca 40	40	2	H2	39.351	39.351	8.31	192868	12.65		100000	100000	
Ti 47	47	1	He	16.574	16.574	0.61	1611	3.73		2000	2000	
V 51	51	1	He	-0.020	-0.020	-98.56	637	8.66		2000	2000	
Cr 52	52	1	He	1270.105	1270.105	4.27	3605245	7.19		2000	2000	
Mn 55	55	1	He	129.631	129.631	1.82	269891	4.91		22000	22000	
Fe 56	56	1	He	23.672	23.672	2.11	64837	4.79		100000	100000	
Co 59	59	1	He	148.343	148.343	1.94	594897	4.57		2000	2000	
Ni 60	60	1	He	462.030	462.030	1.74	457393	4.65		2000	2000	
Cu 63	63	1	He	181.781	181.781	2.44	473767	5.54		2000	2000	
Zn 66	66	1	He	539.078	539.078	1.23	263401	5.54		2000	2000	
As 75	75	1	He	580.931	580.931	0.17	202079	4.47		2000	2000	
Se 78	78	2	H2	286.315	286.315	2.34	55473	5.81		2000	2000	
Sr 88	88	1	He	0.674	0.674	2.76	2353	6.45		2000	2000	
Mo 95	95	1	He	19.164	19.164	2.02	28673	5.65		2000	2000	
Ag 107	107	1	He	353.451	353.451	5.49	1486816	5.38		500	500	
Cd 111	111	1	He	786.643	786.643	4.63	564098	4.46		2000	2000	
Sn 118	118	1	He	0.050	0.050	41.35	560	7.31		2000	2000	
Sb 121	121	1	He	247.863	247.863	5.20	588508	5.04		2000	2000	
Ba 137	137	1	He	260.145	260.145	5.58	259255	5.43		2000	2000	
Ce 140	140	1	He	0.397	0.397	8.92	4686	8.43		2000	2000	
Gd 157	157	1	He	0.209	0.209	13.79	531	12.40		2000	2000	
Au 197	197	1	He	-0.136	-0.136	-4.37	86	21.45		2000	2000	
Tl 205	205	1	He	329.762	329.762	4.16	2225910	5.65		500	500	
Pb206	206	1	He	632.882	632.882	4.91	1530394	6.09		12000	12000	
Pb207	207	1	He	593.611	593.611	2.14	1228732	4.04		12000	12000	
Pb 208	208	1	He	620.977	620.977	2.71	5775784	4.49		12000	12000	
U 238	238	1	He	0.378	0.378	4.32	3460	4.99		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5771362	3.16	7122799	81.03	80	120	
Sc_45	45	2	H2	34497417	7.10	38319065	90.03	80	120	
Ge_72	72	1	He	3357368	4.40	3981131	84.33	80	120	
Ge_72	72	2	H2	10105631	3.52	11928338	84.72	80	120	
In_115	115	1	He	3793270	0.18	4490435	84.47	80	120	
In_115	115	2	H2	9168732	1.39	10423245	87.96	80	120	
Tm_169	169	1	He	3810114	1.94	4215469	90.38	80	120	

Sample Report

Sample Table

Sample Name	SD 320-22657-A-16-A@5
Data File Name	180SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:44:56-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.183	-0.183	-2.21	3	18.23		2000	2000	
Be 9	9	2	H2	17.471	17.471	2.10	2333	8.94		2000	2000	
B 11	11	2	H2	-17.161	-17.161	-0.95	488	9.01		10000	10000	
Na 23	23	1	He	-81.584	-81.584	-1.95	22144	3.15		100000	100000	
Mg 24	24	1	He	91.136	91.136	5.21	28307	2.74		100000	100000	
Al 27	27	1	He	39.235	39.235	4.30	6104	1.67		100000	100000	
P 31	31	1	He	17.243	17.243	43.85	200	30.81		100000	100000	
K 39	39	1	He	-21.008	-21.008	-13.46	51319	0.55		100000	100000	
Ca 40	40	2	H2	0.057	0.057	1862.43	63643	12.91		100000	100000	
Ti 47	47	1	He	3.625	3.625	10.96	372	11.79		2000	2000	
V 51	51	1	He	-0.093	-0.093	-15.27	463	6.24		2000	2000	
Cr 52	52	1	He	244.368	244.368	5.04	701186	2.86		2000	2000	
Mn 55	55	1	He	25.519	25.519	3.79	53680	1.45		22000	22000	
Fe 56	56	1	He	4.302	4.302	3.63	15312	0.82		100000	100000	
Co 59	59	1	He	29.315	29.315	4.22	118615	1.82		2000	2000	
Ni 60	60	1	He	90.871	90.871	5.07	90993	2.68		2000	2000	
Cu 63	63	1	He	36.161	36.161	4.57	95520	2.29		2000	2000	
Zn 66	66	1	He	109.199	109.199	6.16	54058	2.14		2000	2000	
As 75	75	1	He	115.051	115.051	6.73	40514	2.87		2000	2000	
Se 78	78	2	H2	60.262	60.262	4.83	11635	6.28		2000	2000	
Sr 88	88	1	He	0.116	0.116	25.22	596	11.63		2000	2000	
Mo 95	95	1	He	3.683	3.683	7.94	5610	3.30		2000	2000	
Ag 107	107	1	He	68.388	68.388	2.50	290642	2.10		500	500	
Cd 111	111	1	He	156.316	156.316	2.46	113237	1.73		2000	2000	
Sn 118	118	1	He	0.071	0.071	13.25	608	1.38		2000	2000	
Sb 121	121	1	He	49.095	49.095	2.81	118515	2.38		2000	2000	
Ba 137	137	1	He	51.722	51.722	3.47	52087	2.57		2000	2000	
Ce 140	140	1	He	0.070	0.070	8.84	966	7.44		2000	2000	
Gd 157	157	1	He	0.027	0.027	8.71	97	5.97		2000	2000	
Au 197	197	1	He	-0.146	-0.146	-3.55	57	29.41		2000	2000	
Tl 205	205	1	He	64.256	64.256	5.86	443472	3.60		500	500	
Pb206	206	1	He	122.422	122.422	5.61	302806	3.35		12000	12000	
Pb207	207	1	He	116.501	116.501	5.33	246691	3.10		12000	12000	
Pb 208	208	1	He	118.947	118.947	5.08	1131783	2.82		12000	12000	
U 238	238	1	He	0.051	0.051	6.43	663	6.53		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5821147	2.45	7122799	81.73	80	120	
Sc_45	45	2	H2	34044055	7.47	38319065	88.84	80	120	
Ge_72	72	1	He	3382261	4.53	3981131	84.96	80	120	
Ge_72	72	2	H2	10052192	3.01	11928338	84.27	80	120	
In_115	115	1	He	3832233	1.82	4490435	85.34	80	120	
In_115	115	2	H2	9246555	1.57	10423245	88.71	80	120	
Tm_169	169	1	He	3899483	2.32	4215469	92.50	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	181_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:48:29-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	94.224	4.617	18517	8.99	100	94.2	90	110	
Be 9	9	2	H2	94.531	4.087	12847	8.46	100	94.5	90	110	
Na 23	23	1	He	4989.631	1.308	2849935	3.04	5100	97.8	90	110	
Mg 24	24	1	He	4919.040	2.552	1506913	2.17	5100	96.5	90	110	
Al 27	27	1	He	5027.942	2.038	746486	2.81	5100	98.6	90	110	
P 31	31	1	He	4976.621	1.971	42502	1.93	5000	99.5	90	110	
K 39	39	1	He	5066.648	1.149	1899216	2.92	5100	99.3	90	110	
Ca 40	40	2	H2	5203.974	8.194	17157937	12.51	5100	102.0	90	110	
Ti 47	47	1	He	198.821	2.675	19500	2.81	200	99.4	90	110	
V 51	51	1	He	101.964	1.974	257375	3.15	100	102.0	90	110	
Cr 52	52	1	He	101.056	1.669	295729	3.23	100	101.1	90	110	
Mn 55	55	1	He	100.990	2.316	214655	3.76	100	101.0	90	110	
Fe 56	56	1	He	4993.349	2.705	13069028	4.34	5100	97.9	90	110	
Co 59	59	1	He	102.102	1.870	418006	3.05	100	102.1	90	110	
Ni 60	60	1	He	101.636	3.019	103062	4.26	100	101.6	90	110	
Cu 63	63	1	He	100.814	1.923	268442	2.94	100	100.8	90	110	
Zn 66	66	1	He	96.568	3.607	49425	2.23	100	96.6	90	110	
As 75	75	1	He	97.697	3.824	35588	3.55	100	97.7	90	110	
Se 78	78	2	H2	100.746	2.062	20422	4.46	100	100.7	90	110	
Sr 88	88	1	He	98.339	2.643	321975	2.49	100	98.3	90	110	
Mo 95	95	1	He	197.348	3.228	305747	3.37	200	98.7	90	110	
Ag 107	107	1	He	50.171	2.325	214364	4.18	50	100.3	90	110	
Cd 111	111	1	He	98.625	2.122	71825	3.80	100	98.6	90	110	
Sn 118	118	1	He	100.531	3.241	205348	5.00	100	100.5	90	110	
Sb 121	121	1	He	50.423	2.154	122323	3.54	50	100.8	90	110	
Ba 137	137	1	He	100.564	3.179	101790	4.66	100	100.6	90	110	
Ce 140	140	1	He	100.679	2.784	1167470	4.36	100	100.7	90	110	
Gd 157	157	1	He	97.098	0.772	238136	3.46	100	97.1	90	110	
Au 197	197	1	He	97.631	1.092	288360	3.88	100	97.6	90	110	
Tl 205	205	1	He	48.922	1.473	337348	4.12	50	97.8	90	110	
Pb206	206	1	He	98.235	1.059	242749	3.57	100	98.2	1	10000	
Pb207	207	1	He	97.579	1.486	206411	3.72	100	97.6	1	10000	
Pb 208	208	1	He	98.412	0.956	935416	3.58	100	98.4	90	110	
U 238	238	1	He	99.739	0.699	875311	3.55	100	99.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5892245	2.18	7122799	82.72	80	120	
Sc_45	45	2	H2	34690154	4.36	38319065	90.53	80	120	
Ge_72	72	1	He	3487547	2.09	3981131	87.60	80	120	
Ge_72	72	2	H2	10564610	2.63	11928338	88.57	80	120	
In_115	115	1	He	3851102	2.56	4490435	85.76	80	120	
In_115	115	2	H2	9122936	1.21	10423245	87.52	80	120	
Tm_169	169	1	He	3891230	2.86	4215469	92.31	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	182_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:51:56-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.186	-4.4	3	50.9	10	
Be 9	9	2	H2	-0.035	-9.5	1	50.0	1	
Na 23	23	1	He	-85.652	-0.7	20903	1.2	50	>+/-RL
Mg 24	24	1	He	-1.022	-7.1	470	5.6	50	
Al 27	27	1	He	-0.133	-248.4	353	14.6	50	
P 31	31	1	He	0.925	117.9	66	16.0	50	
K 39	39	1	He	-22.407	-10.9	53367	1.8	50	
Ca 40	40	2	H2	0.463	184.4	68076	10.5	50	
Ti 47	47	1	He	-0.006	-1435.5	21	39.0	5	
V 51	51	1	He	-0.081	-7.6	517	4.7	10	
Cr 52	52	1	He	-0.004	-1357.0	3452	4.3	2	
Mn 55	55	1	He	0.015	99.8	221	13.2	1	
Fe 56	56	1	He	-0.029	-277.7	4333	5.3	50	
Co 59	59	1	He	0.004	73.6	215	5.1	1	
Ni 60	60	1	He	-0.009	-270.5	459	4.3	2	
Cu 63	63	1	He	-0.071	-20.8	565	8.6	2	
Zn 66	66	1	He	-0.034	-377.9	548	13.9	5	
As 75	75	1	He	-0.132	-42.7	317	4.5	2	
Se 78	78	2	H2	0.059	14.3	47	3.3	2	
Sr 88	88	1	He	0.001	1609.9	249	10.5	5	
Mo 95	95	1	He	0.000	1357.3	97	6.0	2	
Ag 107	107	1	He	0.000	738.8	59	25.5	1	
Cd 111	111	1	He	0.002	358.7	15	41.7	1	
Sn 118	118	1	He	0.015	222.3	511	12.3	10	
Sb 121	121	1	He	-0.044	-27.9	880	3.5	2	
Ba 137	137	1	He	0.009	16.3	41	4.7	1	
Ce 140	140	1	He	-0.002	-131.5	143	17.6	5	
Gd 157	157	1	He	-0.005	-77.7	20	44.1	1	
Au 197	197	1	He	-0.076	-10.5	262	9.5	5	
Tl 205	205	1	He	0.010	47.8	233	14.9	1	
Pb206	206	1	He	-0.027	-79.3	163	33.6	1	
Pb207	207	1	He	-0.025	-34.0	141	13.0	1	
Pb 208	208	1	He	-0.027	-4.0	639	1.3	1	
U 238	238	1	He	-0.001	-271.5	203	18.0	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6111640	1.56	7122799	85.80	80	120	
Sc_45	45	2	H2	35716057	6.31	38319065	93.21	80	120	
Ge_72	72	1	He	3617263	2.24	3981131	90.86	80	120	
Ge_72	72	2	H2	11020844	2.77	11928338	92.39	80	120	
In_115	115	1	He	3966619	1.11	4490435	88.33	80	120	
In_115	115	2	H2	9478884	1.68	10423245	90.94	80	120	
Tm_169	169	1	He	3871665	1.60	4215469	91.84	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	183_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:55:34-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	96.636	4.962	19247	8.90	100	96.6	90	110	
Be 9	9	2	H2	95.962	5.915	13225	10.05	100	96.0	90	110	
Na 23	23	1	He	4972.613	3.404	2861103	4.08	5100	97.5	90	110	
Mg 24	24	1	He	5122.000	2.161	1580913	3.06	5100	100.4	90	110	
Al 27	27	1	He	5011.322	2.532	749453	3.03	5100	98.3	90	110	
P 31	31	1	He	4915.541	3.811	42291	3.98	5000	98.3	90	110	
K 39	39	1	He	5057.194	4.226	1908930	3.50	5100	99.2	90	110	
Ca 40	40	2	H2	5329.573	7.777	17807072	11.91	5100	104.5	90	110	
Ti 47	47	1	He	202.139	3.650	19971	4.03	200	101.1	90	110	
V 51	51	1	He	102.453	2.435	260477	2.96	100	102.5	90	110	
Cr 52	52	1	He	101.472	2.743	299092	3.61	100	101.5	90	110	
Mn 55	55	1	He	101.281	3.498	216794	3.64	100	101.3	90	110	
Fe 56	56	1	He	5045.645	3.703	13300021	4.37	5100	98.9	90	110	
Co 59	59	1	He	101.633	2.111	419122	2.94	100	101.6	90	110	
Ni 60	60	1	He	101.816	2.281	103982	2.96	100	101.8	90	110	
Cu 63	63	1	He	101.886	2.349	273282	3.27	100	101.9	90	110	
Zn 66	66	1	He	95.831	5.287	49768	4.10	100	95.8	90	110	
As 75	75	1	He	97.580	4.728	36059	3.49	100	97.6	90	110	
Se 78	78	2	H2	106.309	6.355	21502	6.75	100	106.3	90	110	
Sr 88	88	1	He	97.446	4.358	323645	2.97	100	97.4	90	110	
Mo 95	95	1	He	194.490	4.721	305617	3.16	200	97.2	90	110	
Ag 107	107	1	He	50.150	5.818	213377	4.36	50	100.3	90	110	
Cd 111	111	1	He	100.773	4.526	73095	2.96	100	100.8	90	110	
Sn 118	118	1	He	102.202	4.218	207887	2.56	100	102.2	90	110	
Sb 121	121	1	He	51.227	5.020	123765	3.49	50	102.5	90	110	
Ba 137	137	1	He	101.769	4.290	102597	2.91	100	101.8	90	110	
Ce 140	140	1	He	102.321	3.978	1181821	2.70	100	102.3	90	110	
Gd 157	157	1	He	99.889	2.861	238543	2.67	100	99.9	90	110	
Au 197	197	1	He	100.385	3.203	288635	2.43	100	100.4	90	110	
Tl 205	205	1	He	50.362	2.934	338144	3.30	50	100.7	90	110	
Pb206	206	1	He	100.084	3.221	240817	3.15	100	100.1	1	10000	
Pb207	207	1	He	98.737	2.664	203363	2.25	100	98.7	1	10000	
Pb 208	208	1	He	100.276	2.799	928061	2.66	100	100.3	90	110	
U 238	238	1	He	100.620	3.329	859787	3.02	100	100.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5935596	2.27	7122799	83.33	80	120	
Sc_45	45	2	H2	35167151	4.51	38319065	91.77	80	120	
Ge_72	72	1	He	3540363	4.09	3981131	88.93	80	120	
Ge_72	72	2	H2	10543569	0.74	11928338	88.39	80	120	
In_115	115	1	He	3838056	1.93	4490435	85.47	80	120	
In_115	115	2	H2	9028445	1.08	10423245	86.62	80	120	
Tm_169	169	1	He	3790859	3.21	4215469	89.93	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	184_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T19:59:02-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.181	-1.6	4	15.1	10	
Be 9	9	2	H2	-0.032	-26.0	1	78.1	1	
Na 23	23	1	He	-86.033	-1.1	20296	0.3	50	>+/-RL
Mg 24	24	1	He	-0.857	-13.4	512	4.9	50	
Al 27	27	1	He	0.476	49.7	438	7.3	50	
P 31	31	1	He	2.253	147.1	76	36.6	50	
K 39	39	1	He	-16.747	-41.1	54441	2.4	50	
Ca 40	40	2	H2	0.932	147.4	68947	12.3	50	
Ti 47	47	1	He	-0.066	-187.3	15	82.2	5	
V 51	51	1	He	-0.093	-15.6	477	6.4	10	
Cr 52	52	1	He	0.036	83.3	3509	3.1	2	
Mn 55	55	1	He	0.019	21.0	227	4.1	1	
Fe 56	56	1	He	0.031	515.3	4407	7.6	50	
Co 59	59	1	He	0.002	66.3	203	1.1	1	
Ni 60	60	1	He	0.017	193.3	478	5.1	2	
Cu 63	63	1	He	-0.060	-45.9	585	13.0	2	
Zn 66	66	1	He	0.045	185.2	573	6.3	5	
As 75	75	1	He	-0.121	-37.7	313	3.8	2	
Se 78	78	2	H2	0.015	236.9	37	18.6	2	
Sr 88	88	1	He	0.001	1151.4	243	7.7	5	
Mo 95	95	1	He	0.000	4271.3	94	25.0	2	
Ag 107	107	1	He	0.000	397.4	58	14.5	1	
Cd 111	111	1	He	-0.001	-813.4	12	50.0	1	
Sn 118	118	1	He	0.037	56.3	548	7.3	10	
Sb 121	121	1	He	0.054	30.6	1100	4.9	2	
Ba 137	137	1	He	-0.001	-1729.5	30	40.1	1	
Ce 140	140	1	He	-0.004	-46.5	107	21.7	5	
Gd 157	157	1	He	0.001	1054.1	33	55.7	1	
Au 197	197	1	He	-0.059	-52.5	319	26.9	5	
Tl 205	205	1	He	0.001	373.2	178	14.2	1	
Pb206	206	1	He	-0.031	-61.9	156	30.0	1	
Pb207	207	1	He	-0.030	-56.3	134	27.6	1	
Pb 208	208	1	He	-0.033	-5.9	590	1.7	1	
U 238	238	1	He	0.000	11525.0	221	10.0	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5999254	2.35	7122799	84.23	80	120	
Sc_45	45	2	H2	35324168	5.68	38319065	92.18	80	120	
Ge_72	72	1	He	3526624	2.70	3981131	88.58	80	120	
Ge_72	72	2	H2	10835027	1.27	11928338	90.83	80	120	
In_115	115	1	He	3889054	1.30	4490435	86.61	80	120	
In_115	115	2	H2	9324617	2.17	10423245	89.46	80	120	
Tm_169	169	1	He	3976876	2.33	4215469	94.34	80	120	

Sample Table

Sample Name	MB 320-133725/1-A
Data File Name	185SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:02:36-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.184	-0.184	-7.53	3	88.19		2000	2000	
Be 9	9	2	H2	-0.038	-0.038	-17.35	1	173.21		2000	2000	
B 11	11	2	H2	7.567	7.567	17.32	3380	6.49		10000	10000	
Na 23	23	1	He	-62.040	-62.040	-4.14	29714	1.57		100000	100000	
Mg 24	24	1	He	-0.483	-0.483	-33.14	551	4.60		100000	100000	
Al 27	27	1	He	4.585	4.585	10.45	927	4.85		100000	100000	
P 31	31	1	He	10.405	10.405	12.78	129	3.91		100000	100000	
K 39	39	1	He	3.959	3.959	273.03	54390	2.43		100000	100000	
Ca 40	40	2	H2	-4.987	-4.987	-32.13	46265	12.99		100000	100000	
Ti 47	47	1	He	0.292	0.292	41.96	44	19.81		2000	2000	
V 51	51	1	He	-0.056	-0.056	-14.38	501	3.00		2000	2000	
Cr 52	52	1	He	0.465	0.465	5.67	4185	4.93		2000	2000	
Mn 55	55	1	He	-0.012	-0.012	-77.74	139	9.77		22000	22000	
Fe 56	56	1	He	0.531	0.531	29.37	5029	4.77		100000	100000	
Co 59	59	1	He	-0.036	-0.036	-13.87	40	48.22		2000	2000	
Ni 60	60	1	He	-0.375	-0.375	-5.80	66	31.64		2000	2000	
Cu 63	63	1	He	-0.117	-0.117	-4.34	376	0.88		2000	2000	
Zn 66	66	1	He	-0.107	-0.107	-70.14	420	7.62		2000	2000	
As 75	75	1	He	-0.054	-0.054	-49.81	286	5.15		2000	2000	
Se 78	78	2	H2	-0.012	-0.012	-120.43	28	8.88		2000	2000	
Sr 88	88	1	He	-0.007	-0.007	-18.73	184	2.88		2000	2000	
Mo 95	95	1	He	-0.008	-0.008	-54.06	69	7.39		2000	2000	
Ag 107	107	1	He	0.023	0.023	34.36	138	19.40		500	500	
Cd 111	111	1	He	0.006	0.006	28.85	15	7.53		2000	2000	
Sn 118	118	1	He	6.078	6.078	6.87	11564	3.86		2000	2000	
Sb 121	121	1	He	0.486	0.486	7.65	1917	1.55		2000	2000	
Ba 137	137	1	He	0.082	0.082	65.71	101	46.78		2000	2000	
Ce 140	140	1	He	-0.007	-0.007	-42.98	68	44.63		2000	2000	
Gd 157	157	1	He	-0.007	-0.007	-70.58	12	87.67		2000	2000	
Au 197	197	1	He	-0.020	-0.020	-154.74	380	19.75		2000	2000	
Tl 205	205	1	He	0.015	0.015	21.89	242	7.95		500	500	
Pb206	206	1	He	0.824	0.824	6.19	2006	3.94		12000	12000	
Pb207	207	1	He	0.768	0.768	1.08	1610	2.33		12000	12000	
Pb 208	208	1	He	0.817	0.817	4.32	7671	1.96		12000	12000	
U 238	238	1	He	-0.005	-0.005	-174.15	151	46.40		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5260329	3.96	7122799	73.85	80	120	ISTD Failed
Sc_45	45	2	H2	33284667	2.56	38319065	86.86	80	120	
Ge_72	72	1	He	2985221	2.32	3981131	74.98	80	120	ISTD Failed
Ge_72	72	2	H2	9848917	0.86	11928338	82.57	80	120	
In_115	115	1	He	3469701	2.85	4490435	77.27	80	120	ISTD Failed
In_115	115	2	H2	8622903	1.02	10423245	82.73	80	120	
Tm_169	169	1	He	3449682	1.93	4215469	81.83	80	120	

Sample Report

Sample Table

Sample Name	LCS 320-133725/2-A
Data File Name	186SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:06:10-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	170.406	170.406	2.19	31621	8.83		2000	2000	
Be 9	9	2	H2	172.060	172.060	2.91	22106	9.51		2000	2000	
B 11	11	2	H2	955.921	955.921	4.13	113209	10.68		10000	10000	
Na 23	23	1	He	925.481	925.481	3.33	521823	3.67		100000	100000	
Mg 24	24	1	He	969.056	969.056	3.46	265926	4.11		100000	100000	
Al 27	27	1	He	1030.645	1030.645	4.70	137012	5.07		100000	100000	
P 31	31	1	He	972.727	972.727	1.97	7465	2.73		100000	100000	
K 39	39	1	He	981.666	981.666	2.61	371762	2.87		100000	100000	
Ca 40	40	2	H2	1015.641	1015.641	6.20	3216256	12.74		100000	100000	
Ti 47	47	1	He	198.275	198.275	3.88	17380	4.10		2000	2000	
V 51	51	1	He	203.730	203.730	3.65	458963	4.30		2000	2000	
Cr 52	52	1	He	205.154	205.154	4.32	533465	4.99		2000	2000	
Mn 55	55	1	He	199.120	199.120	3.55	378043	4.14		22000	22000	
Fe 56	56	1	He	1048.121	1048.121	4.01	2454370	4.81		100000	100000	
Co 59	59	1	He	206.049	206.049	2.80	753719	3.53		2000	2000	
Ni 60	60	1	He	204.785	204.785	3.01	185160	3.87		2000	2000	
Cu 63	63	1	He	204.957	204.957	3.54	487099	4.34		2000	2000	
Zn 66	66	1	He	181.817	181.817	4.51	81923	3.39		2000	2000	
As 75	75	1	He	186.699	186.699	5.13	59885	4.12		2000	2000	
Se 78	78	2	H2	158.344	158.344	4.55	29246	6.72		2000	2000	
Sr 88	88	1	He	199.190	199.190	4.99	576772	4.01		2000	2000	
Mo 95	95	1	He	210.916	210.916	4.97	289094	4.26		2000	2000	
Ag 107	107	1	He	50.416	50.416	2.79	196006	3.35		500	500	
Cd 111	111	1	He	189.365	189.365	3.49	125484	3.97		2000	2000	
Sn 118	118	1	He	207.110	207.110	4.61	384461	4.96		2000	2000	
Sb 121	121	1	He	201.018	201.018	3.17	441179	3.62		2000	2000	
Ba 137	137	1	He	195.558	195.558	2.87	180078	3.12		2000	2000	
Ce 140	140	1	He	202.026	202.026	3.19	2130984	2.33		2000	2000	
Gd 157	157	1	He	193.380	193.380	4.67	425353	3.97		2000	2000	
Au 197	197	1	He	185.281	185.281	4.61	490440	4.26		2000	2000	
Tl 205	205	1	He	49.816	49.816	5.12	308104	4.95		500	500	
Pb206	206	1	He	197.128	197.128	5.13	436710	4.61		12000	12000	
Pb207	207	1	He	202.603	202.603	4.65	384192	3.84		12000	12000	
Pb 208	208	1	He	200.775	200.775	4.43	1710873	3.88		12000	12000	
U 238	238	1	He	205.196	205.196	8.51	1614719	7.90		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5265548	1.34	7122799	73.93	80	120	ISTD Failed
Sc_45	45	2	H2	32798945	6.63	38319065	85.59	80	120	
Ge_72	72	1	He	3086049	1.35	3981131	77.52	80	120	ISTD Failed
Ge_72	72	2	H2	9628147	2.22	11928338	80.72	80	120	
In_115	115	1	He	3504670	1.38	4490435	78.05	80	120	ISTD Failed
In_115	115	2	H2	8151005	1.04	10423245	78.20	80	120	ISTD Failed
Tm_169	169	1	He	3491522	1.76	4215469	82.83	80	120	

Sample Table

Sample Name	LCSD 320-133725/3-A
Data File Name	187SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:09:40-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	167.024	167.024	3.71	30940	7.99		2000	2000	
Be 9	9	2	H2	167.838	167.838	4.53	21521	8.59		2000	2000	
B 11	11	2	H2	944.444	944.444	4.83	111632	9.10		10000	10000	
Na 23	23	1	He	887.242	887.242	3.52	491429	3.46		100000	100000	
Mg 24	24	1	He	918.074	918.074	3.30	246273	3.41		100000	100000	
Al 27	27	1	He	974.895	974.895	3.44	126705	3.96		100000	100000	
P 31	31	1	He	929.971	929.971	4.57	6979	4.73		100000	100000	
K 39	39	1	He	928.899	928.899	2.47	346643	2.32		100000	100000	
Ca 40	40	2	H2	998.982	998.982	7.64	3156498	11.64		100000	100000	
Ti 47	47	1	He	190.940	190.940	3.23	16360	3.01		2000	2000	
V 51	51	1	He	195.324	195.324	3.16	430141	3.74		2000	2000	
Cr 52	52	1	He	197.280	197.280	3.89	501452	3.81		2000	2000	
Mn 55	55	1	He	191.242	191.242	3.16	354912	3.63		22000	22000	
Fe 56	56	1	He	996.541	996.541	4.53	2280839	4.63		100000	100000	
Co 59	59	1	He	196.983	196.983	4.59	704327	4.90		2000	2000	
Ni 60	60	1	He	195.341	195.341	3.68	172649	4.02		2000	2000	
Cu 63	63	1	He	196.286	196.286	3.26	455969	3.58		2000	2000	
Zn 66	66	1	He	175.923	175.923	2.59	77433	4.52		2000	2000	
As 75	75	1	He	176.792	176.792	1.19	55392	3.27		2000	2000	
Se 78	78	2	H2	154.894	154.894	5.10	28215	5.46		2000	2000	
Sr 88	88	1	He	189.739	189.739	2.62	536623	4.71		2000	2000	
Mo 95	95	1	He	202.325	202.325	1.74	270793	3.53		2000	2000	
Ag 107	107	1	He	49.218	49.218	6.08	183359	3.33		500	500	
Cd 111	111	1	He	182.844	182.844	8.04	116059	5.29		2000	2000	
Sn 118	118	1	He	202.480	202.480	7.34	360090	4.58		2000	2000	
Sb 121	121	1	He	196.186	196.186	6.95	412540	4.10		2000	2000	
Ba 137	137	1	He	192.314	192.314	7.07	169672	4.29		2000	2000	
Ce 140	140	1	He	196.947	196.947	5.53	1991475	2.90		2000	2000	
Gd 157	157	1	He	187.000	187.000	5.33	395030	4.01		2000	2000	
Au 197	197	1	He	179.787	179.787	5.33	457009	3.92		2000	2000	
Tl 205	205	1	He	48.097	48.097	4.89	285653	3.33		500	500	
Pb206	206	1	He	192.494	192.494	5.48	409530	4.05		12000	12000	
Pb207	207	1	He	198.792	198.792	4.59	362053	3.01		12000	12000	
Pb 208	208	1	He	196.698	196.698	5.53	1609598	4.08		12000	12000	
U 238	238	1	He	191.544	191.544	5.50	1447713	4.07		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5147232	1.39	7122799	72.26	80	120	ISTD Failed
Sc_45	45	2	H2	32739624	4.45	38319065	85.44	80	120	
Ge_72	72	1	He	3012025	2.10	3981131	75.66	80	120	ISTD Failed
Ge_72	72	2	H2	9500609	1.07	11928338	79.65	80	120	ISTD Failed
In_115	115	1	He	3362478	2.99	4490435	74.88	80	120	ISTD Failed
In_115	115	2	H2	8169869	1.32	10423245	78.38	80	120	ISTD Failed
Tm_169	169	1	He	3354005	1.77	4215469	79.56	80	120	ISTD Failed

Sample Table

Sample Name	320-22657-A-2-F DU
Data File Name	188SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:13:10-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.101	-0.101	-17.87	17	18.33		2000	2000	
Be 9	9	2	H2	-0.016	-0.016	-27.02	3	16.67		2000	2000	
B 11	11	2	H2	60.554	60.554	19.29	8604	14.37		10000	10000	
Na 23	23	1	He	427.566	427.566	7.38	239362	1.76		100000	100000	
Mg 24	24	1	He	63.015	63.015	5.37	15683	1.19		100000	100000	
Al 27	27	1	He	56.481	56.481	8.13	6828	3.56		100000	100000	
P 31	31	1	He	20.528	20.528	2.91	181	5.11		100000	100000	
K 39	39	1	He	85.727	85.727	16.83	70891	1.44		100000	100000	
Ca 40	40	2	H2	524.442	524.442	20.11	1533905	19.50		100000	100000	
Ti 47	47	1	He	2.914	2.914	9.29	239	4.21		2000	2000	
V 51	51	1	He	0.541	0.541	11.42	1613	3.74		2000	2000	
Cr 52	52	1	He	1.883	1.883	10.37	6868	2.05		2000	2000	
Mn 55	55	1	He	10.833	10.833	5.49	18121	1.03		22000	22000	
Fe 56	56	1	He	65.182	65.182	4.42	136631	0.44		100000	100000	
Co 59	59	1	He	0.125	0.125	10.51	549	4.70		2000	2000	
Ni 60	60	1	He	0.034	0.034	213.90	379	10.71		2000	2000	
Cu 63	63	1	He	28.412	28.412	5.16	59547	0.96		2000	2000	
Zn 66	66	1	He	44.930	44.930	3.75	18212	1.60		2000	2000	
As 75	75	1	He	0.827	0.827	8.98	509	2.16		2000	2000	
Se 78	78	2	H2	18.292	18.292	17.41	3131	14.06		2000	2000	
Sr 88	88	1	He	0.872	0.872	6.26	2416	3.98		2000	2000	
Mo 95	95	1	He	5.729	5.729	6.97	7007	4.81		2000	2000	
Ag 107	107	1	He	0.296	0.296	8.26	1032	5.07		500	500	
Cd 111	111	1	He	0.114	0.114	16.89	75	11.15		2000	2000	
Sn 118	118	1	He	35.008	35.008	4.35	56259	1.10		2000	2000	
Sb 121	121	1	He	0.158	0.158	45.50	1048	10.59		2000	2000	
Ba 137	137	1	He	9.536	9.536	5.58	7589	5.89		2000	2000	
Ce 140	140	1	He	0.086	0.086	28.76	897	21.11		2000	2000	
Gd 157	157	1	He	0.003	0.003	385.48	29	65.62		2000	2000	
Au 197	197	1	He	0.089	0.089	45.45	579	13.82		2000	2000	
Tl 205	205	1	He	0.024	0.024	42.19	258	19.06		500	500	
Pb206	206	1	He	40.466	40.466	3.71	77405	1.53		12000	12000	
Pb207	207	1	He	38.802	38.802	3.61	63542	1.44		12000	12000	
Pb 208	208	1	He	39.714	39.714	3.08	292248	0.90		12000	12000	
U 238	238	1	He	0.025	0.025	65.83	333	31.00		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	4612529	4.40	7122799	64.76	80	120	ISTD Failed
Sc_45	45	2	H2	29836917	0.39	38319065	77.86	80	120	ISTD Failed
Ge_72	72	1	He	2727738	2.11	3981131	68.52	80	120	ISTD Failed
Ge_72	72	2	H2	8891890	3.20	11928338	74.54	80	120	ISTD Failed
In_115	115	1	He	3020750	3.38	4490435	67.27	80	120	ISTD Failed
In_115	115	2	H2	7686534	2.84	10423245	73.74	80	120	ISTD Failed
Tm_169	169	1	He	3010077	2.21	4215469	71.41	80	120	ISTD Failed

Sample Table

Sample Name	320-22657-A-2-E
Data File Name	189SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:16:44-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.082	-0.082	-32.21	21	21.26		2000	2000	
Be 9	9	2	H2	-0.036	-0.036	-18.53	1	114.56		2000	2000	
B 11	11	2	H2	59.623	59.623	7.74	8804	10.72		10000	10000	
Na 23	23	1	He	412.080	412.080	5.71	242906	2.15		100000	100000	
Mg 24	24	1	He	61.290	61.290	5.55	15943	3.57		100000	100000	
Al 27	27	1	He	53.812	53.812	1.59	6814	1.11		100000	100000	
P 31	31	1	He	18.263	18.263	4.14	173	3.54		100000	100000	
K 39	39	1	He	83.600	83.600	9.76	73413	1.03		100000	100000	
Ca 40	40	2	H2	543.839	543.839	8.95	1645569	13.53		100000	100000	
Ti 47	47	1	He	3.307	3.307	16.27	281	13.90		2000	2000	
V 51	51	1	He	0.421	0.421	8.43	1437	2.81		2000	2000	
Cr 52	52	1	He	1.778	1.778	4.83	6927	0.81		2000	2000	
Mn 55	55	1	He	10.538	10.538	6.28	18406	4.00		22000	22000	
Fe 56	56	1	He	63.205	63.205	5.58	138378	3.19		100000	100000	
Co 59	59	1	He	0.119	0.119	13.76	554	7.68		2000	2000	
Ni 60	60	1	He	0.049	0.049	55.24	410	3.99		2000	2000	
Cu 63	63	1	He	27.780	27.780	4.92	60796	2.61		2000	2000	
Zn 66	66	1	He	43.732	43.732	4.11	18368	1.99		2000	2000	
As 75	75	1	He	0.890	0.890	18.89	546	7.04		2000	2000	
Se 78	78	2	H2	18.770	18.770	3.91	3309	5.33		2000	2000	
Sr 88	88	1	He	0.863	0.863	10.42	2478	7.66		2000	2000	
Mo 95	95	1	He	5.588	5.588	5.16	7081	3.61		2000	2000	
Ag 107	107	1	He	0.272	0.272	7.11	1020	4.75		500	500	
Cd 111	111	1	He	0.095	0.095	14.52	69	13.76		2000	2000	
Sn 118	118	1	He	33.324	33.324	5.18	57348	2.80		2000	2000	
Sb 121	121	1	He	0.075	0.075	43.66	957	7.91		2000	2000	
Ba 137	137	1	He	9.237	9.237	8.25	7862	5.97		2000	2000	
Ce 140	140	1	He	0.085	0.085	29.93	954	24.00		2000	2000	
Gd 157	157	1	He	0.003	0.003	454.51	31	89.21		2000	2000	
Au 197	197	1	He	-0.041	-0.041	-47.10	299	12.23		2000	2000	
Tl 205	205	1	He	0.004	0.004	124.94	162	17.95		500	500	
Pb206	206	1	He	38.774	38.774	7.24	78525	3.73		12000	12000	
Pb207	207	1	He	37.571	37.571	5.29	65168	1.97		12000	12000	
Pb 208	208	1	He	38.204	38.204	6.80	297656	3.34		12000	12000	
U 238	238	1	He	0.000	0.000	-2972.50	173	37.88		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	4811896	2.30	7122799	67.56	80	120	ISTD Failed
Sc_45	45	2	H2	30826457	5.00	38319065	80.45	80	120	
Ge_72	72	1	He	2824765	2.07	3981131	70.95	80	120	ISTD Failed
Ge_72	72	2	H2	9125334	2.69	11928338	76.50	80	120	ISTD Failed
In_115	115	1	He	3233351	2.42	4490435	72.01	80	120	ISTD Failed
In_115	115	2	H2	7646673	1.42	10423245	73.36	80	120	ISTD Failed
Tm_169	169	1	He	3190324	3.59	4215469	75.68	80	120	ISTD Failed

Sample Table

Sample Name	SD 320-22657-A-2-E@5
Data File Name	190SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:20:22-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.167	-0.167	-7.02	7	37.75		2000	2000	
Be 9	9	2	H2	-0.039	-0.039	-11.31	0	173.21		2000	2000	
B 11	11	2	H2	19.290	19.290	6.61	5052	7.12		10000	10000	
Na 23	23	1	He	8.970	8.970	87.57	74021	2.47		100000	100000	
Mg 24	24	1	He	11.418	11.418	7.38	4328	2.41		100000	100000	
Al 27	27	1	He	11.612	11.612	7.70	2115	4.24		100000	100000	
P 31	31	1	He	2.235	2.235	81.57	76	21.54		100000	100000	
K 39	39	1	He	-5.672	-5.672	-133.24	58426	1.13		100000	100000	
Ca 40	40	2	H2	132.398	132.398	8.29	509107	12.41		100000	100000	
Ti 47	47	1	He	0.456	0.456	36.89	67	24.25		2000	2000	
V 51	51	1	He	0.001	0.001	3361.39	716	10.07		2000	2000	
Cr 52	52	1	He	0.236	0.236	36.96	4089	4.68		2000	2000	
Mn 55	55	1	He	2.227	2.227	10.20	4983	6.18		22000	22000	
Fe 56	56	1	He	12.597	12.597	8.25	37761	3.83		100000	100000	
Co 59	59	1	He	-0.007	-0.007	-116.68	166	15.38		2000	2000	
Ni 60	60	1	He	-0.315	-0.315	-7.97	137	19.98		2000	2000	
Cu 63	63	1	He	5.739	5.739	6.54	16216	2.61		2000	2000	
Zn 66	66	1	He	9.198	9.198	1.16	5146	2.24		2000	2000	
As 75	75	1	He	0.086	0.086	37.31	380	3.83		2000	2000	
Se 78	78	2	H2	4.968	4.968	6.41	1055	9.03		2000	2000	
Sr 88	88	1	He	0.175	0.175	6.87	803	5.48		2000	2000	
Mo 95	95	1	He	1.060	1.060	12.06	1717	12.19		2000	2000	
Ag 107	107	1	He	0.063	0.063	3.79	321	4.32		500	500	
Cd 111	111	1	He	0.013	0.013	3.46	22	0.00		2000	2000	
Sn 118	118	1	He	6.983	6.983	2.98	14605	3.65		2000	2000	
Sb 121	121	1	He	-0.199	-0.199	-9.46	477	9.41		2000	2000	
Ba 137	137	1	He	1.928	1.928	0.66	1969	0.85		2000	2000	
Ce 140	140	1	He	0.008	0.008	28.50	250	12.22		2000	2000	
Gd 157	157	1	He	-0.011	-0.011	-19.85	4	114.60		2000	2000	
Au 197	197	1	He	-0.133	-0.133	-2.70	94	8.88		2000	2000	
Tl 205	205	1	He	-0.016	-0.016	-19.44	56	36.66		500	500	
Pb206	206	1	He	8.016	8.016	5.50	19862	4.12		12000	12000	
Pb207	207	1	He	7.678	7.678	3.83	16293	2.33		12000	12000	
Pb 208	208	1	He	7.973	7.973	4.95	75997	3.37		12000	12000	
U 238	238	1	He	-0.021	-0.021	-10.14	31	59.01		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5990931	3.62	7122799	84.11	80	120	
Sc_45	45	2	H2	35353628	5.39	38319065	92.26	80	120	
Ge_72	72	1	He	3449300	1.21	3981131	86.64	80	120	
Ge_72	72	2	H2	10729101	3.06	11928338	89.95	80	120	
In_115	115	1	He	3827155	1.50	4490435	85.23	80	120	
In_115	115	2	H2	9357328	2.95	10423245	89.77	80	120	
Tm_169	169	1	He	3863164	2.20	4215469	91.64	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	191_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:23:57-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	97.159	2.483	20729	8.80	100	97.2	90	110	
Be 9	9	2	H2	94.422	1.443	13929	7.94	100	94.4	90	110	
Na 23	23	1	He	5126.662	3.398	3152216	3.89	5100	100.5	90	110	
Mg 24	24	1	He	5008.200	4.151	1653224	4.78	5100	98.2	90	110	
Al 27	27	1	He	5028.154	2.301	804188	2.71	5100	98.6	90	110	
P 31	31	1	He	4904.121	1.878	45125	2.30	5000	98.1	90	110	
K 39	39	1	He	5100.657	4.094	2058477	3.16	5100	100.0	90	110	
Ca 40	40	2	H2	5108.293	4.647	18286486	11.14	5100	100.2	90	110	
Ti 47	47	1	He	201.255	4.538	21262	4.32	200	100.6	90	110	
V 51	51	1	He	103.545	3.175	281530	3.56	100	103.5	90	110	
Cr 52	52	1	He	102.222	2.891	322166	3.18	100	102.2	90	110	
Mn 55	55	1	He	101.510	2.381	232380	2.59	100	101.5	90	110	
Fe 56	56	1	He	5045.890	2.988	14223454	3.43	5100	98.9	90	110	
Co 59	59	1	He	102.990	3.286	454161	3.37	100	103.0	90	110	
Ni 60	60	1	He	102.699	2.624	112163	3.11	100	102.7	90	110	
Cu 63	63	1	He	102.985	1.715	295370	1.98	100	103.0	90	110	
Zn 66	66	1	He	97.989	1.492	53455	2.97	100	98.0	90	110	
As 75	75	1	He	98.992	1.989	38427	3.09	100	99.0	90	110	
Se 78	78	2	H2	97.374	4.192	22148	7.09	100	97.4	90	110	
Sr 88	88	1	He	98.889	1.637	345071	3.05	100	98.9	90	110	
Mo 95	95	1	He	200.056	1.159	330302	2.66	200	100.0	90	110	
Ag 107	107	1	He	50.021	6.188	229266	3.72	50	100.0	90	110	
Cd 111	111	1	He	100.101	6.080	78211	3.79	100	100.1	90	110	
Sn 118	118	1	He	100.768	5.793	220794	3.22	100	100.8	90	110	
Sb 121	121	1	He	50.095	5.884	130395	3.28	50	100.2	90	110	
Ba 137	137	1	He	101.180	5.533	109874	2.97	100	101.2	90	110	
Ce 140	140	1	He	101.592	4.649	1264065	2.10	100	101.6	90	110	
Gd 157	157	1	He	99.974	1.983	259398	3.30	100	100.0	90	110	
Au 197	197	1	He	99.930	1.929	312156	2.11	100	99.9	90	110	
Tl 205	205	1	He	50.282	3.381	366750	4.04	50	100.6	90	110	
Pb206	206	1	He	100.621	1.898	263019	2.70	100	100.6	1	10000	
Pb207	207	1	He	100.077	1.685	223936	2.61	100	100.1	1	10000	
Pb 208	208	1	He	100.519	2.544	1010738	3.51	100	100.5	90	110	
U 238	238	1	He	101.321	2.027	940697	3.31	100	101.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6347336	1.54	7122799	89.11	80	120	
Sc_45	45	2	H2	37675501	6.48	38319065	98.32	80	120	
Ge_72	72	1	He	3715910	1.78	3981131	93.34	80	120	
Ge_72	72	2	H2	11847551	3.01	11928338	99.32	80	120	
In_115	115	1	He	4136204	2.53	4490435	92.11	80	120	
In_115	115	2	H2	10039518	2.34	10423245	96.32	80	120	
Tm_169	169	1	He	4116607	1.64	4215469	97.65	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	192_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:27:24-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.183	-2.9	4	28.4	10	
Be 9	9	2	H2	-0.034	-11.7	1	49.5	1	
Na 23	23	1	He	-85.729	-0.2	21172	0.3	50	>+/-RL
Mg 24	24	1	He	-0.958	-6.5	497	3.5	50	
Al 27	27	1	He	-0.004	-4872.3	378	7.5	50	
P 31	31	1	He	-1.924	-52.7	41	22.3	50	
K 39	39	1	He	-18.738	-11.0	55566	0.9	50	
Ca 40	40	2	H2	0.012	11655.8	69328	13.5	50	
Ti 47	47	1	He	0.037	323.4	26	48.0	5	
V 51	51	1	He	-0.085	-14.7	514	6.8	10	
Cr 52	52	1	He	-0.090	-64.9	3246	5.7	2	
Mn 55	55	1	He	0.027	3.6	253	1.2	1	
Fe 56	56	1	He	-0.081	-160.3	4253	7.7	50	
Co 59	59	1	He	0.000	4518.8	201	12.1	1	
Ni 60	60	1	He	-0.034	-104.2	440	8.3	2	
Cu 63	63	1	He	-0.080	-3.0	548	0.8	2	
Zn 66	66	1	He	0.023	265.5	588	5.4	5	
As 75	75	1	He	-0.177	-28.2	306	6.0	2	
Se 78	78	2	H2	-0.018	-238.0	31	30.8	2	
Sr 88	88	1	He	-0.002	-613.3	246	14.3	5	
Mo 95	95	1	He	0.001	2716.6	99	25.3	2	
Ag 107	107	1	He	0.002	28.4	67	5.0	1	
Cd 111	111	1	He	-0.001	-654.0	13	36.5	1	
Sn 118	118	1	He	0.065	41.5	639	11.0	10	
Sb 121	121	1	He	-0.263	-3.6	348	6.8	2	
Ba 137	137	1	He	-0.010	-88.0	22	43.3	1	
Ce 140	140	1	He	-0.005	-37.1	110	21.2	5	
Gd 157	157	1	He	-0.006	-34.4	18	28.6	1	
Au 197	197	1	He	-0.048	-74.9	367	30.0	5	
Tl 205	205	1	He	-0.008	-6.0	121	3.2	1	
Pb206	206	1	He	-0.004	-169.5	231	7.4	1	
Pb207	207	1	He	-0.004	-340.9	197	13.2	1	
Pb 208	208	1	He	-0.009	-118.8	857	11.1	1	
U 238	238	1	He	-0.002	-110.7	211	8.1	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6202922	0.72	7122799	87.09	80	120	
Sc_45	45	2	H2	37159973	6.34	38319065	96.98	80	120	
Ge_72	72	1	He	3683819	0.36	3981131	92.53	80	120	
Ge_72	72	2	H2	11192578	3.19	11928338	93.83	80	120	
In_115	115	1	He	4103564	1.81	4490435	91.38	80	120	
In_115	115	2	H2	9936728	2.71	10423245	95.33	80	120	
Tm_169	169	1	He	4109347	1.24	4215469	97.48	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	193_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:30:59-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	97.806	1.784	20641	9.07	100	97.8	90	110	
Be 9	9	2	H2	96.564	2.171	14099	9.58	100	96.6	90	110	
Na 23	23	1	He	5026.791	5.358	3046968	5.96	5100	98.6	90	110	
Mg 24	24	1	He	5040.871	2.764	1639293	3.26	5100	98.8	90	110	
Al 27	27	1	He	4959.320	1.474	781514	2.41	5100	97.2	90	110	
P 31	31	1	He	4981.708	2.687	45167	3.60	5000	99.6	90	110	
K 39	39	1	He	5029.435	2.880	2001425	3.72	5100	98.6	90	110	
Ca 40	40	2	H2	5232.424	5.576	18551670	13.57	5100	102.6	90	110	
Ti 47	47	1	He	200.990	1.983	20925	2.92	200	100.5	90	110	
V 51	51	1	He	102.775	1.925	275333	2.85	100	102.8	90	110	
Cr 52	52	1	He	102.417	1.733	318031	2.65	100	102.4	90	110	
Mn 55	55	1	He	101.386	2.453	228694	3.22	100	101.4	90	110	
Fe 56	56	1	He	5002.303	0.854	13892203	1.75	5100	98.1	90	110	
Co 59	59	1	He	103.309	2.504	448911	3.41	100	103.3	90	110	
Ni 60	60	1	He	103.578	3.249	111462	4.14	100	103.6	90	110	
Cu 63	63	1	He	103.349	1.104	292052	2.04	100	103.3	90	110	
Zn 66	66	1	He	95.540	1.927	52827	2.21	100	95.5	90	110	
As 75	75	1	He	96.147	1.876	37836	3.02	100	96.1	90	110	
Se 78	78	2	H2	98.865	4.734	22253	7.00	100	98.9	90	110	
Sr 88	88	1	He	94.993	1.605	335930	2.70	100	95.0	90	110	
Mo 95	95	1	He	194.338	1.422	325170	2.55	200	97.2	90	110	
Ag 107	107	1	He	51.650	3.482	227503	4.09	50	103.3	90	110	
Cd 111	111	1	He	102.876	2.157	77239	2.81	100	102.9	90	110	
Sn 118	118	1	He	102.704	2.251	216236	2.89	100	102.7	90	110	
Sb 121	121	1	He	51.888	3.422	129758	4.04	50	103.8	90	110	
Ba 137	137	1	He	103.688	1.455	108188	1.95	100	103.7	90	110	
Ce 140	140	1	He	103.864	2.275	1241612	2.88	100	103.9	90	110	
Gd 157	157	1	He	99.869	4.046	251560	2.74	100	99.9	90	110	
Au 197	197	1	He	102.257	2.311	310287	3.18	100	102.3	90	110	
Tl 205	205	1	He	50.935	2.408	360795	2.49	50	101.9	90	110	
Pb206	206	1	He	100.949	3.026	256307	3.65	100	100.9	1	10000	
Pb207	207	1	He	100.194	4.256	217723	4.06	100	100.2	1	10000	
Pb 208	208	1	He	101.132	3.238	987418	2.66	100	101.1	90	110	
U 238	238	1	He	101.605	3.437	915983	3.06	100	101.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6253279	0.95	7122799	87.79	80	120	
Sc_45	45	2	H2	37283669	7.95	38319065	97.30	80	120	
Ge_72	72	1	He	3765755	1.26	3981131	94.59	80	120	
Ge_72	72	2	H2	11725426	2.27	11928338	98.30	80	120	
In_115	115	1	He	3970379	0.64	4490435	88.42	80	120	
In_115	115	2	H2	9961156	2.69	10423245	95.57	80	120	
Tm_169	169	1	He	3999193	2.82	4215469	94.87	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	194_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:34:27-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.177	-5.3	5	48.9	10	
Be 9	9	2	H2	-0.025	-32.4	2	49.5	1	
Na 23	23	1	He	-85.295	-0.8	21423	1.1	50	>+/-RL
Mg 24	24	1	He	-0.888	-18.2	520	10.4	50	
Al 27	27	1	He	0.094	263.2	393	9.9	50	
P 31	31	1	He	0.153	699.3	60	16.7	50	
K 39	39	1	He	-15.985	-16.4	56614	1.8	50	
Ca 40	40	2	H2	0.216	621.5	67697	15.1	50	
Ti 47	47	1	He	-0.098	-92.1	12	76.4	5	
V 51	51	1	He	-0.084	-17.6	515	7.0	10	
Cr 52	52	1	He	-0.071	-36.0	3302	1.8	2	
Mn 55	55	1	He	0.032	12.7	263	4.2	1	
Fe 56	56	1	He	0.003	2194.9	4485	4.5	50	
Co 59	59	1	He	-0.002	-194.1	193	7.4	1	
Ni 60	60	1	He	-0.031	-48.7	444	4.3	2	
Cu 63	63	1	He	-0.061	-19.5	601	6.2	2	
Zn 66	66	1	He	0.057	138.7	603	6.9	5	
As 75	75	1	He	-0.140	-61.8	319	11.9	2	
Se 78	78	2	H2	-0.025	-61.5	29	14.2	2	
Sr 88	88	1	He	-0.001	-1014.9	247	9.7	5	
Mo 95	95	1	He	0.016	190.4	123	39.3	2	
Ag 107	107	1	He	0.006	64.0	87	20.0	1	
Cd 111	111	1	He	-0.004	-224.6	10	69.3	1	
Sn 118	118	1	He	0.080	13.2	662	4.3	10	
Sb 121	121	1	He	-0.264	-4.3	340	7.4	2	
Ba 137	137	1	He	-0.012	-36.8	19	27.0	1	
Ce 140	140	1	He	-0.004	-105.2	120	41.5	5	
Gd 157	157	1	He	-0.005	-28.3	20	16.7	1	
Au 197	197	1	He	-0.064	-30.4	304	19.3	5	
Tl 205	205	1	He	-0.002	-148.8	157	14.0	1	
Pb206	206	1	He	-0.011	-112.2	207	13.8	1	
Pb207	207	1	He	-0.026	-95.2	141	37.5	1	
Pb 208	208	1	He	-0.015	-48.8	767	8.8	1	
U 238	238	1	He	-0.001	-1312.7	214	35.8	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6202176	0.80	7122799	87.07	80	120	
Sc_45	45	2	H2	35896590	8.89	38319065	93.68	80	120	
Ge_72	72	1	He	3665486	1.94	3981131	92.07	80	120	
Ge_72	72	2	H2	11149125	3.19	11928338	93.47	80	120	
In_115	115	1	He	4044180	1.44	4490435	90.06	80	120	
In_115	115	2	H2	9858249	1.06	10423245	94.58	80	120	
Tm_169	169	1	He	3961799	0.89	4215469	93.98	80	120	

Sample Report

Sample Table

Sample Name	PDS 320-22657-A-2-E
Data File Name	195SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:38:02-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	320.032	320.032	5.68	57283	10.66		2000	2000	
Be 9	9	2	H2	327.726	327.726	6.49	40631	11.49		2000	2000	
B 11	11	2	H2	1829.728	1829.728	6.80	206866	11.70		10000	10000	
Na 23	23	1	He	2353.508	2353.508	6.38	1069935	2.37		100000	100000	
Mg 24	24	1	He	1914.783	1914.783	6.73	455160	2.96		100000	100000	
Al 27	27	1	He	2166.892	2166.892	6.85	249566	3.57		100000	100000	
P 31	31	1	He	1896.169	1896.169	6.50	12583	2.87		100000	100000	
K 39	39	1	He	1964.978	1964.978	6.96	599251	2.78		100000	100000	
Ca 40	40	2	H2	2377.694	2377.694	11.42	7189005	16.29		100000	100000	
Ti 47	47	1	He	392.616	392.616	7.27	29833	3.45		2000	2000	
V 51	51	1	He	403.715	403.715	5.90	788488	2.37		2000	2000	
Cr 52	52	1	He	403.010	403.010	6.62	906433	3.03		2000	2000	
Mn 55	55	1	He	404.030	404.030	6.97	665149	3.35		22000	22000	
Fe 56	56	1	He	2071.661	2071.661	7.38	4203331	3.58		100000	100000	
Co 59	59	1	He	406.507	406.507	6.63	1289626	2.89		2000	2000	
Ni 60	60	1	He	405.939	405.939	7.48	317925	3.66		2000	2000	
Cu 63	63	1	He	431.227	431.227	6.16	888347	2.32		2000	2000	
Zn 66	66	1	He	381.227	381.227	6.28	153376	4.23		2000	2000	
As 75	75	1	He	344.377	344.377	5.08	98717	3.01		2000	2000	
Se 78	78	2	H2	315.790	315.790	6.03	57077	8.49		2000	2000	
Sr 88	88	1	He	374.609	374.609	4.95	971544	2.90		2000	2000	
Mo 95	95	1	He	395.323	395.323	4.86	485313	2.81		2000	2000	
Ag 107	107	1	He	98.781	98.781	7.34	333993	3.28		500	500	
Cd 111	111	1	He	366.125	366.125	6.93	211039	2.82		2000	2000	
Sn 118	118	1	He	424.827	424.827	6.90	685657	3.14		2000	2000	
Sb 121	121	1	He	392.913	392.913	6.99	749424	3.04		2000	2000	
Ba 137	137	1	He	392.618	392.618	6.90	314503	2.95		2000	2000	
Ce 140	140	1	He	390.896	390.896	9.85	3586383	7.07		2000	2000	
Gd 157	157	1	He	376.093	376.093	6.08	726843	3.33		2000	2000	
Au 197	197	1	He	359.011	359.011	6.04	834562	3.25		2000	2000	
Tl 205	205	1	He	97.351	97.351	5.09	528943	2.30		500	500	
Pb206	206	1	He	415.314	415.314	5.98	808231	3.25		12000	12000	
Pb207	207	1	He	427.643	427.643	5.98	712392	3.20		12000	12000	
Pb 208	208	1	He	434.902	434.902	5.90	3255444	3.21		12000	12000	
U 238	238	1	He	397.587	397.587	9.40	2747468	6.68		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	4575524	3.92	7122799	64.24	80	120	ISTD Failed
Sc_45	45	2	H2	31624885	5.03	38319065	82.53	80	120	
Ge_72	72	1	He	2765503	2.12	3981131	69.47	80	120	ISTD Failed
Ge_72	72	2	H2	9423633	2.52	11928338	79.00	80	120	ISTD Failed
In_115	115	1	He	3054853	4.30	4490435	68.03	80	120	ISTD Failed
In_115	115	2	H2	8026382	1.23	10423245	77.00	80	120	ISTD Failed
Tm_169	169	1	He	3070511	2.88	4215469	72.84	80	120	ISTD Failed

Sample Report

Sample Table

Sample Name	320-22657-A-4-C
Data File Name	196SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:41:30-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.003	-0.003	-671.06	39	11.25		2000	2000	
Be 9	9	2	H2	-0.008	-0.008	-159.46	5	37.63		2000	2000	
B 11	11	2	H2	84.666	84.666	6.54	12926	8.15		10000	10000	
Na 23	23	1	He	496.335	496.335	6.31	302566	1.41		100000	100000	
Mg 24	24	1	He	89.876	89.876	6.36	24832	2.54		100000	100000	
Al 27	27	1	He	48.985	48.985	4.82	6699	1.24		100000	100000	
P 31	31	1	He	20.791	20.791	16.64	205	11.94		100000	100000	
K 39	39	1	He	70.877	70.877	17.22	74908	1.52		100000	100000	
Ca 40	40	2	H2	564.839	564.839	12.09	1914233	14.68		100000	100000	
Ti 47	47	1	He	2.238	2.238	13.22	211	8.56		2000	2000	
V 51	51	1	He	0.171	0.171	15.19	998	9.70		2000	2000	
Cr 52	52	1	He	1.580	1.580	7.72	6948	1.81		2000	2000	
Mn 55	55	1	He	98.271	98.271	6.94	183290	3.56		22000	22000	
Fe 56	56	1	He	79.877	79.877	5.96	187148	2.29		100000	100000	
Co 59	59	1	He	0.114	0.114	13.32	576	7.02		2000	2000	
Ni 60	60	1	He	0.127	0.127	53.79	509	9.08		2000	2000	
Cu 63	63	1	He	27.004	27.004	7.53	63566	4.00		2000	2000	
Zn 66	66	1	He	17.878	17.878	3.40	8178	3.22		2000	2000	
As 75	75	1	He	0.761	0.761	14.54	535	6.02		2000	2000	
Se 78	78	2	H2	19.235	19.235	7.94	3883	8.89		2000	2000	
Sr 88	88	1	He	1.965	1.965	7.28	5679	6.42		2000	2000	
Mo 95	95	1	He	1.433	1.433	9.57	1969	8.36		2000	2000	
Ag 107	107	1	He	0.278	0.278	7.08	1080	7.19		500	500	
Cd 111	111	1	He	0.123	0.123	9.96	89	11.04		2000	2000	
Sn 118	118	1	He	33.517	33.517	6.07	59802	3.66		2000	2000	
Sb 121	121	1	He	0.033	0.033	149.53	906	12.02		2000	2000	
Ba 137	137	1	He	43.859	43.859	5.81	38620	3.22		2000	2000	
Ce 140	140	1	He	0.077	0.077	1.44	911	3.40		2000	2000	
Gd 157	157	1	He	0.012	0.012	98.73	52	46.17		2000	2000	
Au 197	197	1	He	0.137	0.137	22.52	760	7.30		2000	2000	
Tl 205	205	1	He	0.023	0.023	50.62	274	21.40		500	500	
Pb206	206	1	He	37.138	37.138	6.22	78466	3.03		12000	12000	
Pb207	207	1	He	36.450	36.450	6.43	65924	3.25		12000	12000	
Pb 208	208	1	He	36.749	36.749	6.31	298668	3.12		12000	12000	
U 238	238	1	He	0.045	0.045	29.68	519	16.13		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5179937	3.82	7122799	72.72	80	120	ISTD Failed
Sc_45	45	2	H2	34589502	3.49	38319065	90.27	80	120	
Ge_72	72	1	He	2971655	0.80	3981131	74.64	80	120	ISTD Failed
Ge_72	72	2	H2	10448812	1.40	11928338	87.60	80	120	
In_115	115	1	He	3353237	3.01	4490435	74.68	80	120	ISTD Failed
In_115	115	2	H2	9142833	2.79	10423245	87.72	80	120	
Tm_169	169	1	He	3326766	3.31	4215469	78.92	80	120	ISTD Failed

Sample Report

Sample Table

Sample Name	320-22657-A-6-C
Data File Name	197SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:45:03-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.102	-0.102	-16.36	19	20.46		2000	2000	
Be 9	9	2	H2	-0.038	-0.038	-10.08	1	100.00		2000	2000	
B 11	11	2	H2	85.277	85.277	5.95	12670	8.68		10000	10000	
Na 23	23	1	He	422.965	422.965	5.38	273225	0.98		100000	100000	
Mg 24	24	1	He	43.477	43.477	6.37	12662	2.84		100000	100000	
Al 27	27	1	He	34.351	34.351	4.58	4911	2.70		100000	100000	
P 31	31	1	He	21.624	21.624	13.50	217	13.61		100000	100000	
K 39	39	1	He	58.225	58.225	16.07	72624	0.99		100000	100000	
Ca 40	40	2	H2	444.163	444.163	12.87	1481223	16.22		100000	100000	
Ti 47	47	1	He	2.045	2.045	19.80	199	15.15		2000	2000	
V 51	51	1	He	0.189	0.189	2.72	1061	2.96		2000	2000	
Cr 52	52	1	He	1.498	1.498	5.68	6906	1.16		2000	2000	
Mn 55	55	1	He	10.195	10.195	6.57	19631	3.81		22000	22000	
Fe 56	56	1	He	41.330	41.330	6.67	101037	3.24		100000	100000	
Co 59	59	1	He	0.075	0.075	19.69	445	9.32		2000	2000	
Ni 60	60	1	He	0.098	0.098	42.38	495	4.50		2000	2000	
Cu 63	63	1	He	22.661	22.661	5.00	54785	1.85		2000	2000	
Zn 66	66	1	He	62.198	62.198	2.66	28230	0.94		2000	2000	
As 75	75	1	He	0.783	0.783	19.18	560	7.93		2000	2000	
Se 78	78	2	H2	10.828	10.828	5.53	2131	7.49		2000	2000	
Sr 88	88	1	He	0.703	0.703	5.87	2237	4.33		2000	2000	
Mo 95	95	1	He	1.108	1.108	3.36	1593	1.45		2000	2000	
Ag 107	107	1	He	0.190	0.190	16.25	780	11.39		500	500	
Cd 111	111	1	He	0.057	0.057	21.58	49	20.27		2000	2000	
Sn 118	118	1	He	30.412	30.412	7.13	56187	3.35		2000	2000	
Sb 121	121	1	He	-0.003	-0.003	-1248.15	857	7.00		2000	2000	
Ba 137	137	1	He	11.469	11.469	3.49	10481	1.71		2000	2000	
Ce 140	140	1	He	0.040	0.040	22.19	562	13.65		2000	2000	
Gd 157	157	1	He	-0.006	-0.006	-80.79	14	74.18		2000	2000	
Au 197	197	1	He	-0.087	-0.087	-7.14	206	8.93		2000	2000	
Tl 205	205	1	He	-0.006	-0.006	-53.99	111	16.52		500	500	
Pb206	206	1	He	34.957	34.957	3.20	76845	1.91		12000	12000	
Pb207	207	1	He	34.129	34.129	2.70	64230	1.67		12000	12000	
Pb 208	208	1	He	35.061	35.061	2.93	296472	1.58		12000	12000	
U 238	238	1	He	-0.013	-0.013	-8.64	91	9.21		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5305623	3.30	7122799	74.49	80	120	ISTD Failed
Sc_45	45	2	H2	33699355	3.91	38319065	87.94	80	120	
Ge_72	72	1	He	3073718	1.77	3981131	77.21	80	120	ISTD Failed
Ge_72	72	2	H2	10116209	2.49	11928338	84.81	80	120	
In_115	115	1	He	3472513	4.03	4490435	77.33	80	120	ISTD Failed
In_115	115	2	H2	9152171	0.61	10423245	87.81	80	120	
Tm_169	169	1	He	3457169	1.62	4215469	82.01	80	120	

Sample Table

Sample Name	320-22657-A-8-C
Data File Name	198SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:48:37-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.071	-0.071	-64.54	24	39.03		2000	2000	
Be 9	9	2	H2	-0.042	-0.042	0.00	0	#DIV/0!		2000	2000	
B 11	11	2	H2	39.296	39.296	3.35	6957	6.72		10000	10000	
Na 23	23	1	He	397.241	397.241	3.96	244780	3.12		100000	100000	
Mg 24	24	1	He	61.898	61.898	4.49	16683	4.38		100000	100000	
Al 27	27	1	He	38.177	38.177	3.09	5097	2.91		100000	100000	
P 31	31	1	He	20.942	20.942	18.64	198	13.13		100000	100000	
K 39	39	1	He	49.985	49.985	6.98	65759	2.00		100000	100000	
Ca 40	40	2	H2	423.201	423.201	8.85	1366525	12.93		100000	100000	
Ti 47	47	1	He	3.085	3.085	19.85	273	18.08		2000	2000	
V 51	51	1	He	1.027	1.027	3.75	2781	3.85		2000	2000	
Cr 52	52	1	He	1.712	1.712	6.88	7015	3.94		2000	2000	
Mn 55	55	1	He	7.611	7.611	3.78	13825	4.01		22000	22000	
Fe 56	56	1	He	58.981	58.981	2.65	134134	3.62		100000	100000	
Co 59	59	1	He	1.031	1.031	3.84	3731	4.06		2000	2000	
Ni 60	60	1	He	0.113	0.113	16.12	479	1.93		2000	2000	
Cu 63	63	1	He	28.676	28.676	2.26	65036	2.68		2000	2000	
Zn 66	66	1	He	36.090	36.090	4.67	15440	4.56		2000	2000	
As 75	75	1	He	0.757	0.757	18.10	514	6.99		2000	2000	
Se 78	78	2	H2	2.266	2.266	3.84	447	3.55		2000	2000	
Sr 88	88	1	He	0.887	0.887	2.39	2577	1.59		2000	2000	
Mo 95	95	1	He	5.117	5.117	3.49	6579	3.45		2000	2000	
Ag 107	107	1	He	0.196	0.196	9.47	752	9.40		500	500	
Cd 111	111	1	He	0.070	0.070	23.23	54	20.62		2000	2000	
Sn 118	118	1	He	50.679	50.679	1.35	87409	3.11		2000	2000	
Sb 121	121	1	He	0.038	0.038	111.91	883	7.07		2000	2000	
Ba 137	137	1	He	18.900	18.900	0.94	16142	3.48		2000	2000	
Ce 140	140	1	He	0.045	0.045	9.83	568	8.23		2000	2000	
Gd 157	157	1	He	-0.005	-0.005	-3.47	17	0.00		2000	2000	
Au 197	197	1	He	-0.086	-0.086	-5.04	197	4.48		2000	2000	
Tl 205	205	1	He	-0.006	-0.006	-14.36	104	4.88		500	500	
Pb206	206	1	He	33.570	33.570	2.71	69752	2.61		12000	12000	
Pb207	207	1	He	32.805	32.805	3.81	58345	3.33		12000	12000	
Pb 208	208	1	He	33.232	33.232	3.84	265585	3.44		12000	12000	
U 238	238	1	He	-0.017	-0.017	-19.38	58	40.53		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	4984714	1.85	7122799	69.98	80	120	ISTD Failed
Sc_45	45	2	H2	32581189	4.55	38319065	85.03	80	120	
Ge_72	72	1	He	2861179	0.93	3981131	71.87	80	120	ISTD Failed
Ge_72	72	2	H2	9612176	0.49	11928338	80.58	80	120	
In_115	115	1	He	3245284	2.55	4490435	72.27	80	120	ISTD Failed
In_115	115	2	H2	8078221	3.00	10423245	77.50	80	120	ISTD Failed
Tm_169	169	1	He	3266766	1.97	4215469	77.49	80	120	ISTD Failed

Sample Table

Sample Name	320-22657-A-10-C
Data File Name	199SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:52:10-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.010	-0.010	-379.13	37	16.22		2000	2000	
Be 9	9	2	H2	-0.033	-0.033	-6.98	1	24.74		2000	2000	
B 11	11	2	H2	45.133	45.133	5.13	8090	9.09		10000	10000	
Na 23	23	1	He	569.847	569.847	5.57	340739	1.90		100000	100000	
Mg 24	24	1	He	51.342	51.342	7.80	14564	4.82		100000	100000	
Al 27	27	1	He	38.757	38.757	6.39	5399	3.76		100000	100000	
P 31	31	1	He	20.893	20.893	17.70	207	12.63		100000	100000	
K 39	39	1	He	48.348	48.348	13.51	68187	0.51		100000	100000	
Ca 40	40	2	H2	346.599	346.599	11.67	1199743	16.74		100000	100000	
Ti 47	47	1	He	4.394	4.394	11.68	399	9.15		2000	2000	
V 51	51	1	He	1.363	1.363	4.48	3654	1.88		2000	2000	
Cr 52	52	1	He	1.580	1.580	2.96	6997	1.45		2000	2000	
Mn 55	55	1	He	6.355	6.355	3.86	12088	1.11		22000	22000	
Fe 56	56	1	He	62.611	62.611	6.75	148430	3.94		100000	100000	
Co 59	59	1	He	0.029	0.029	48.65	273	16.72		2000	2000	
Ni 60	60	1	He	0.650	0.650	8.37	980	3.05		2000	2000	
Cu 63	63	1	He	14.222	14.222	5.77	34014	2.99		2000	2000	
Zn 66	66	1	He	37.188	37.188	10.49	17076	3.92		2000	2000	
As 75	75	1	He	0.673	0.673	17.25	527	4.92		2000	2000	
Se 78	78	2	H2	1.466	1.466	10.23	330	12.52		2000	2000	
Sr 88	88	1	He	0.680	0.680	9.14	2173	3.76		2000	2000	
Mo 95	95	1	He	1.288	1.288	4.59	1845	2.60		2000	2000	
Ag 107	107	1	He	0.181	0.181	11.54	737	10.11		500	500	
Cd 111	111	1	He	0.065	0.065	18.05	53	12.05		2000	2000	
Sn 118	118	1	He	23.639	23.639	6.94	43212	4.84		2000	2000	
Sb 121	121	1	He	0.130	0.130	57.30	1129	11.73		2000	2000	
Ba 137	137	1	He	9.079	9.079	4.18	8193	2.31		2000	2000	
Ce 140	140	1	He	0.087	0.087	16.50	1032	12.48		2000	2000	
Gd 157	157	1	He	-0.008	-0.008	-17.44	10	33.30		2000	2000	
Au 197	197	1	He	-0.093	-0.093	-5.70	189	6.20		2000	2000	
Tl 205	205	1	He	-0.007	-0.007	-27.66	107	13.62		500	500	
Pb206	206	1	He	34.851	34.851	5.75	76153	3.13		12000	12000	
Pb207	207	1	He	33.975	33.975	4.05	63575	2.03		12000	12000	
Pb 208	208	1	He	34.558	34.558	5.10	290503	2.60		12000	12000	
U 238	238	1	He	-0.016	-0.016	-11.24	69	21.82		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5211133	2.77	7122799	73.16	80	120	ISTD Failed
Sc_45	45	2	H2	34533397	5.79	38319065	90.12	80	120	
Ge_72	72	1	He	3087284	6.55	3981131	77.55	80	120	ISTD Failed
Ge_72	72	2	H2	10563733	3.80	11928338	88.56	80	120	
In_115	115	1	He	3425681	2.56	4490435	76.29	80	120	ISTD Failed
In_115	115	2	H2	9136808	2.68	10423245	87.66	80	120	
Tm_169	169	1	He	3438865	2.74	4215469	81.58	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	200_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:55:45-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	105.474	1.223	23518	8.11	100	105.5	90	110	
Be 9	9	2	H2	99.407	1.525	15336	8.43	100	99.4	90	110	
Na 23	23	1	He	5150.317	3.455	3432532	4.54	5100	101.0	90	110	
Mg 24	24	1	He	5172.642	2.629	1850691	3.61	5100	101.4	90	110	
Al 27	27	1	He	5064.824	3.831	878186	4.90	5100	99.3	90	110	
P 31	31	1	He	4927.457	4.070	49156	5.25	5000	98.5	90	110	
K 39	39	1	He	5125.748	2.942	2242479	3.60	5100	100.5	90	110	
Ca 40	40	2	H2	5255.631	4.139	19669226	10.89	5100	103.1	90	110	
Ti 47	47	1	He	204.348	4.247	23409	5.36	200	102.2	90	110	
V 51	51	1	He	105.527	3.582	311036	4.76	100	105.5	90	110	
Cr 52	52	1	He	105.911	3.639	361720	4.64	100	105.9	90	110	
Mn 55	55	1	He	102.903	3.442	255382	4.50	100	102.9	90	110	
Fe 56	56	1	He	5161.395	2.135	15769415	2.93	5100	101.2	90	110	
Co 59	59	1	He	106.467	2.880	508952	3.84	100	106.5	90	110	
Ni 60	60	1	He	105.302	2.180	124644	3.11	100	105.3	90	110	
Cu 63	63	1	He	106.099	3.852	329888	4.96	100	106.1	90	110	
Zn 66	66	1	He	95.333	2.140	58312	3.96	100	95.3	90	110	
As 75	75	1	He	95.908	1.977	41746	3.93	100	95.9	90	110	
Se 78	78	2	H2	99.159	4.845	23834	7.13	100	99.2	90	110	
Sr 88	88	1	He	95.175	2.142	372267	3.87	100	95.2	90	110	
Mo 95	95	1	He	199.252	2.768	368726	4.05	200	99.6	90	110	
Ag 107	107	1	He	52.605	4.654	256203	4.63	50	105.2	90	110	
Cd 111	111	1	He	101.908	5.202	84603	5.13	100	101.9	90	110	
Sn 118	118	1	He	102.638	4.792	238954	4.79	100	102.6	90	110	
Sb 121	121	1	He	51.321	3.519	141920	3.46	50	102.6	90	110	
Ba 137	137	1	He	102.106	4.891	117813	4.91	100	102.1	90	110	
Ce 140	140	1	He	104.519	5.386	1381624	5.45	100	104.5	90	110	
Gd 157	157	1	He	99.819	2.575	281539	4.59	100	99.8	90	110	
Au 197	197	1	He	102.457	2.522	347964	4.57	100	102.5	90	110	
Tl 205	205	1	He	50.575	3.083	401049	5.12	50	101.1	90	110	
Pb206	206	1	He	101.604	1.911	288707	3.93	100	101.6	1	10000	
Pb207	207	1	He	100.886	1.395	245357	3.09	100	100.9	1	10000	
Pb 208	208	1	He	101.616	1.737	1110552	3.58	100	101.6	90	110	
U 238	238	1	He	101.755	2.274	1026887	4.20	100	101.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6879369	1.35	7122799	96.58	80	120	
Sc_45	45	2	H2	39399863	6.88	38319065	102.82	80	120	
Ge_72	72	1	He	4164744	2.21	3981131	104.61	80	120	
Ge_72	72	2	H2	12522783	3.02	11928338	104.98	80	120	
In_115	115	1	He	4390743	0.25	4490435	97.78	80	120	
In_115	115	2	H2	11034975	2.71	10423245	105.87	80	120	
Tm_169	169	1	He	4473999	2.10	4215469	106.13	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	201_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T20:59:11-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.166	-3.6	8	17.6	10	
Be 9	9	2	H2	-0.034	-12.6	1	65.5	1	
Na 23	23	1	He	-84.251	-2.0	24523	3.5	50	>+/-RL
Mg 24	24	1	He	-0.845	-2.8	594	0.7	50	
Al 27	27	1	He	-0.030	-632.8	416	6.3	50	
P 31	31	1	He	-0.056	-761.9	65	7.1	50	
K 39	39	1	He	-25.547	-13.4	58940	0.5	50	>+/-0.5RL
Ca 40	40	2	H2	-0.154	-665.7	72954	13.5	50	
Ti 47	47	1	He	-0.036	-284.4	21	58.3	5	
V 51	51	1	He	-0.073	-36.8	605	11.4	10	
Cr 52	52	1	He	-0.136	-28.2	3453	3.1	2	
Mn 55	55	1	He	0.018	106.7	258	17.0	1	
Fe 56	56	1	He	0.083	138.1	5232	4.9	50	
Co 59	59	1	He	0.004	219.2	243	17.0	1	
Ni 60	60	1	He	0.013	653.2	545	16.7	2	
Cu 63	63	1	He	-0.078	-34.0	615	11.6	2	
Zn 66	66	1	He	0.107	96.6	686	6.6	5	
As 75	75	1	He	-0.180	-48.1	330	9.4	2	
Se 78	78	2	H2	-0.048	-73.7	27	28.9	2	
Sr 88	88	1	He	-0.006	-152.4	251	9.7	5	
Mo 95	95	1	He	0.024	56.6	148	13.6	2	
Ag 107	107	1	He	0.002	343.1	71	44.6	1	
Cd 111	111	1	He	-0.004	-130.0	11	43.3	1	
Sn 118	118	1	He	0.024	65.0	578	5.2	10	
Sb 121	121	1	He	-0.264	-5.5	362	10.1	2	
Ba 137	137	1	He	-0.009	-83.1	24	34.3	1	
Ce 140	140	1	He	0.001	221.7	186	10.8	5	
Gd 157	157	1	He	-0.004	-136.1	26	54.3	1	
Au 197	197	1	He	-0.023	-153.8	486	24.0	5	
Tl 205	205	1	He	0.000	-6164.3	192	15.2	1	
Pb206	206	1	He	0.020	102.0	320	16.5	1	
Pb207	207	1	He	0.008	135.2	243	12.2	1	
Pb 208	208	1	He	0.013	53.8	1170	4.9	1	
U 238	238	1	He	0.001	471.5	260	19.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6904652	2.03	7122799	96.94	80	120	
Sc_45	45	2	H2	39437808	8.24	38319065	102.92	80	120	
Ge_72	72	1	He	3998614	3.44	3981131	100.44	80	120	
Ge_72	72	2	H2	12423376	3.12	11928338	104.15	80	120	
In_115	115	1	He	4317571	0.93	4490435	96.15	80	120	
In_115	115	2	H2	11121995	1.86	10423245	106.70	80	120	
Tm_169	169	1	He	4485416	1.59	4215469	106.40	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	202_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:02:46-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	104.002	2.339	22911	6.48	100	104.0	90	110	
Be 9	9	2	H2	96.603	1.758	14720	5.98	100	96.6	90	110	
Na 23	23	1	He	5173.845	5.840	3390607	4.89	5100	101.4	90	110	
Mg 24	24	1	He	5069.508	6.864	1783638	5.83	5100	99.4	90	110	
Al 27	27	1	He	4917.023	5.034	838507	4.49	5100	96.4	90	110	
P 31	31	1	He	4806.947	6.982	47154	6.22	5000	96.1	90	110	
K 39	39	1	He	4985.052	5.834	2147087	5.07	5100	97.7	90	110	
Ca 40	40	2	H2	4992.789	6.703	18462824	10.91	5100	97.9	90	110	
Ti 47	47	1	He	199.001	4.780	22420	4.31	200	99.5	90	110	
V 51	51	1	He	102.888	4.902	298268	4.30	100	102.9	90	110	
Cr 52	52	1	He	102.765	4.593	345318	4.03	100	102.8	90	110	
Mn 55	55	1	He	100.413	4.228	245122	3.88	100	100.4	90	110	
Fe 56	56	1	He	5060.689	4.847	15208330	3.98	5100	99.2	90	110	
Co 59	59	1	He	104.730	4.033	492466	3.54	100	104.7	90	110	
Ni 60	60	1	He	103.907	6.077	120982	5.47	100	103.9	90	110	
Cu 63	63	1	He	104.323	5.208	319019	4.64	100	104.3	90	110	
Zn 66	66	1	He	97.351	2.361	57086	3.52	100	97.4	90	110	
As 75	75	1	He	97.283	2.610	40599	3.80	100	97.3	90	110	
Se 78	78	2	H2	97.195	4.679	23252	5.19	100	97.2	90	110	
Sr 88	88	1	He	94.363	3.603	353972	4.80	100	94.4	90	110	
Mo 95	95	1	He	200.218	3.077	355335	4.23	200	100.1	90	110	
Ag 107	107	1	He	53.035	3.619	248899	5.85	50	106.1	90	110	
Cd 111	111	1	He	103.508	1.891	82783	4.12	100	103.5	90	110	
Sn 118	118	1	He	102.135	1.686	229061	3.91	100	102.1	90	110	
Sb 121	121	1	He	50.933	1.867	135692	4.12	50	101.9	90	110	
Ba 137	137	1	He	101.077	1.221	112339	3.46	100	101.1	90	110	
Ce 140	140	1	He	103.438	2.063	1317141	4.09	100	103.4	90	110	
Gd 157	157	1	He	96.763	2.325	270405	4.17	100	96.8	90	110	
Au 197	197	1	He	101.507	3.483	341522	4.52	100	101.5	90	110	
Tl 205	205	1	He	49.022	2.959	385076	4.14	50	98.0	90	110	
Pb206	206	1	He	97.067	3.703	273216	3.95	100	97.1	1	10000	
Pb207	207	1	He	97.879	3.746	235886	4.76	100	97.9	1	10000	
Pb 208	208	1	He	97.989	2.702	1061071	3.78	100	98.0	90	110	
U 238	238	1	He	99.327	3.299	993242	4.85	100	99.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6769082	1.19	7122799	95.03	80	120	
Sc_45	45	2	H2	38929897	4.84	38319065	101.59	80	120	
Ge_72	72	1	He	3993713	1.26	3981131	100.32	80	120	
Ge_72	72	2	H2	12468658	0.52	11928338	104.53	80	120	
In_115	115	1	He	4228616	2.31	4490435	94.17	80	120	
In_115	115	2	H2	11199204	1.46	10423245	107.44	80	120	
Tm_169	169	1	He	4433627	2.81	4215469	105.18	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	203_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:06:12-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.143	-17.9	12	42.2	10	
Be 9	9	2	H2	-0.021	-98.3	3	101.4	1	
Na 23	23	1	He	-81.715	-0.6	25060	1.1	50	>+/-RL
Mg 24	24	1	He	-0.918	-27.1	543	15.4	50	
Al 27	27	1	He	-0.070	-449.7	391	12.4	50	
P 31	31	1	He	-0.174	-1116.6	61	29.9	50	
K 39	39	1	He	-16.925	-13.6	59923	0.5	50	
Ca 40	40	2	H2	0.128	660.6	71252	8.4	50	
Ti 47	47	1	He	-0.093	-29.0	13	22.9	5	
V 51	51	1	He	-0.065	-40.6	605	11.4	10	
Cr 52	52	1	He	-0.088	-30.7	3463	1.8	2	
Mn 55	55	1	He	0.022	60.2	256	11.0	1	
Fe 56	56	1	He	-0.002	-4441.2	4761	4.2	50	
Co 59	59	1	He	0.004	215.2	231	16.1	1	
Ni 60	60	1	He	0.014	401.7	523	11.4	2	
Cu 63	63	1	He	-0.084	-24.7	572	10.5	2	
Zn 66	66	1	He	0.040	343.4	643	13.4	5	
As 75	75	1	He	-0.257	-12.4	296	3.1	2	
Se 78	78	2	H2	-0.015	-128.4	35	14.8	2	
Sr 88	88	1	He	-0.006	-72.8	248	7.9	5	
Mo 95	95	1	He	0.014	193.3	130	35.6	2	
Ag 107	107	1	He	0.006	72.2	92	23.5	1	
Cd 111	111	1	He	-0.005	-83.5	10	34.6	1	
Sn 118	118	1	He	0.113	3.4	779	1.1	10	
Sb 121	121	1	He	-0.262	-3.3	369	6.8	2	
Ba 137	137	1	He	-0.001	-889.1	33	20.0	1	
Ce 140	140	1	He	-0.006	-29.0	101	22.0	5	
Gd 157	157	1	He	-0.005	-41.3	20	28.9	1	
Au 197	197	1	He	-0.007	-479.5	518	25.1	5	
Tl 205	205	1	He	-0.001	-290.2	179	8.6	1	
Pb206	206	1	He	0.006	171.8	272	12.7	1	
Pb207	207	1	He	-0.006	-30.2	200	3.3	1	
Pb 208	208	1	He	0.002	413.1	1008	8.6	1	
U 238	238	1	He	-0.003	-62.0	207	12.2	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6607257	1.17	7122799	92.76	80	120	
Sc_45	45	2	H2	38036064	4.13	38319065	99.26	80	120	
Ge_72	72	1	He	3963223	1.33	3981131	99.55	80	120	
Ge_72	72	2	H2	12385278	1.87	11928338	103.83	80	120	
In_115	115	1	He	4304695	0.53	4490435	95.86	80	120	
In_115	115	2	H2	11021892	1.19	10423245	105.74	80	120	
Tm_169	169	1	He	4309015	2.22	4215469	102.22	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-12-C
Data File Name	204SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:09:47-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.077	-0.077	-46.11	25	27.37		2000	2000	
Be 9	9	2	H2	-0.033	-0.033	-16.59	1	65.47		2000	2000	
B 11	11	2	H2	60.709	60.709	7.81	10325	8.75		10000	10000	
Na 23	23	1	He	380.376	380.376	4.31	247696	2.36		100000	100000	
Mg 24	24	1	He	50.657	50.657	5.07	14406	4.86		100000	100000	
Al 27	27	1	He	30.508	30.508	5.11	4324	4.15		100000	100000	
P 31	31	1	He	22.285	22.285	10.00	217	6.53		100000	100000	
K 39	39	1	He	48.093	48.093	12.38	68164	1.05		100000	100000	
Ca 40	40	2	H2	465.407	465.407	12.17	1639449	14.47		100000	100000	
Ti 47	47	1	He	1.860	1.860	2.80	180	5.09		2000	2000	
V 51	51	1	He	1.302	1.302	2.28	3521	1.07		2000	2000	
Cr 52	52	1	He	1.597	1.597	3.35	7045	1.52		2000	2000	
Mn 55	55	1	He	4.188	4.188	4.21	8026	2.00		22000	22000	
Fe 56	56	1	He	63.178	63.178	4.15	149965	3.03		100000	100000	
Co 59	59	1	He	0.019	0.019	37.88	239	11.03		2000	2000	
Ni 60	60	1	He	0.216	0.216	26.96	593	8.65		2000	2000	
Cu 63	63	1	He	23.094	23.094	3.71	54905	3.00		2000	2000	
Zn 66	66	1	He	45.946	45.946	1.52	20541	2.07		2000	2000	
As 75	75	1	He	0.538	0.538	7.46	472	2.09		2000	2000	
Se 78	78	2	H2	1.635	1.635	1.83	375	0.31		2000	2000	
Sr 88	88	1	He	0.707	0.707	1.40	2200	2.25		2000	2000	
Mo 95	95	1	He	1.187	1.187	8.16	1666	7.57		2000	2000	
Ag 107	107	1	He	0.154	0.154	10.59	616	5.48		500	500	
Cd 111	111	1	He	0.043	0.043	35.17	38	24.12		2000	2000	
Sn 118	118	1	He	54.736	54.736	7.65	96891	3.40		2000	2000	
Sb 121	121	1	He	0.006	0.006	811.42	841	6.74		2000	2000	
Ba 137	137	1	He	8.627	8.627	6.15	7581	1.19		2000	2000	
Ce 140	140	1	He	0.040	0.040	23.83	542	17.35		2000	2000	
Gd 157	157	1	He	-0.007	-0.007	-67.86	12	78.69		2000	2000	
Au 197	197	1	He	-0.049	-0.049	-39.51	289	17.92		2000	2000	
Tl 205	205	1	He	0.000	0.000	-1045.32	140	10.91		500	500	
Pb206	206	1	He	30.848	30.848	5.43	64247	2.75		12000	12000	
Pb207	207	1	He	30.107	30.107	5.65	53678	3.08		12000	12000	
Pb 208	208	1	He	30.569	30.569	5.26	244924	2.82		12000	12000	
U 238	238	1	He	-0.006	-0.006	-77.04	138	21.95		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5215173	2.67	7122799	73.22	80	120	ISTD Failed
Sc_45	45	2	H2	35700060	2.93	38319065	93.17	80	120	
Ge_72	72	1	He	3008493	1.20	3981131	75.57	80	120	ISTD Failed
Ge_72	72	2	H2	10885683	1.58	11928338	91.26	80	120	
In_115	115	1	He	3339961	4.96	4490435	74.38	80	120	ISTD Failed
In_115	115	2	H2	9355410	2.25	10423245	89.76	80	120	
Tm_169	169	1	He	3276715	3.11	4215469	77.73	80	120	ISTD Failed

Sample Table

Sample Name	320-22657-A-14-C
Data File Name	205SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:13:20-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.086	-0.086	-16.03	22	3.94		2000	2000	
Be 9	9	2	H2	-0.034	-0.034	-19.23	1	86.60		2000	2000	
B 11	11	2	H2	54.329	54.329	2.94	9135	9.32		10000	10000	
Na 23	23	1	He	326.850	326.850	5.78	238497	2.69		100000	100000	
Mg 24	24	1	He	30.458	30.458	7.82	9615	3.36		100000	100000	
Al 27	27	1	He	22.438	22.438	9.44	3514	4.84		100000	100000	
P 31	31	1	He	14.839	14.839	3.72	174	5.97		100000	100000	
K 39	39	1	He	34.541	34.541	36.00	68718	1.82		100000	100000	
Ca 40	40	2	H2	153.278	153.278	8.30	562459	15.87		100000	100000	
Ti 47	47	1	He	2.224	2.224	33.25	226	25.60		2000	2000	
V 51	51	1	He	0.017	0.017	54.82	711	1.65		2000	2000	
Cr 52	52	1	He	1.168	1.168	4.04	6411	3.40		2000	2000	
Mn 55	55	1	He	1.623	1.623	3.81	3461	3.24		22000	22000	
Fe 56	56	1	He	26.450	26.450	5.85	69993	2.24		100000	100000	
Co 59	59	1	He	0.005	0.005	235.36	202	20.22		2000	2000	
Ni 60	60	1	He	-0.117	-0.117	-12.03	319	0.36		2000	2000	
Cu 63	63	1	He	9.087	9.087	6.40	23704	4.86		2000	2000	
Zn 66	66	1	He	9.952	9.952	6.35	5232	3.46		2000	2000	
As 75	75	1	He	0.205	0.205	13.75	401	4.04		2000	2000	
Se 78	78	2	H2	0.344	0.344	14.46	100	11.79		2000	2000	
Sr 88	88	1	He	0.347	0.347	3.02	1287	1.90		2000	2000	
Mo 95	95	1	He	0.017	0.017	96.31	112	21.49		2000	2000	
Ag 107	107	1	He	0.117	0.117	3.76	514	2.62		500	500	
Cd 111	111	1	He	0.032	0.032	60.48	33	38.57		2000	2000	
Sn 118	118	1	He	24.192	24.192	3.44	46299	3.96		2000	2000	
Sb 121	121	1	He	-0.075	-0.075	-6.32	724	2.17		2000	2000	
Ba 137	137	1	He	2.323	2.323	8.44	2216	9.05		2000	2000	
Ce 140	140	1	He	0.028	0.028	21.29	453	15.19		2000	2000	
Gd 157	157	1	He	-0.010	-0.010	-26.75	7	86.65		2000	2000	
Au 197	197	1	He	-0.106	-0.106	-14.23	161	24.51		2000	2000	
Tl 205	205	1	He	-0.011	-0.011	-22.55	83	18.33		500	500	
Pb206	206	1	He	26.620	26.620	5.06	60497	3.99		12000	12000	
Pb207	207	1	He	25.795	25.795	4.77	50187	3.65		12000	12000	
Pb 208	208	1	He	26.358	26.358	4.36	230438	3.25		12000	12000	
U 238	238	1	He	-0.017	-0.017	-7.26	62	15.46		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5623982	4.49	7122799	78.96	80	120	ISTD Failed
Sc_45	45	2	H2	34281917	8.60	38319065	89.46	80	120	
Ge_72	72	1	He	3270241	2.33	3981131	82.14	80	120	
Ge_72	72	2	H2	10308086	3.15	11928338	86.42	80	120	
In_115	115	1	He	3583131	0.93	4490435	79.79	80	120	ISTD Failed
In_115	115	2	H2	9161453	2.49	10423245	87.89	80	120	
Tm_169	169	1	He	3571377	1.13	4215469	84.72	80	120	

Sample Table

Sample Name	320-22657-A-17-A
Data File Name	206SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:16:54-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.155	-0.155	-14.36	9	49.49		2000	2000	
Be 9	9	2	H2	980.550	980.550	1.81	136519	8.94		2000	2000	
B 11	11	2	H2	50.400	50.400	1.09	8985	7.89		10000	10000	
Na 23	23	1	He	1721.415	1721.415	0.18	1020970	0.64		100000	100000	
Mg 24	24	1	He	0.415	0.415	49.51	887	7.37		100000	100000	
Al 27	27	1	He	13.001	13.001	4.19	2274	3.13		100000	100000	
P 31	31	1	He	1084.637	1084.637	2.87	9247	2.25		100000	100000	
K 39	39	1	He	5.621	5.621	4.14	61232	0.65		100000	100000	
Ca 40	40	2	H2	4.138	4.138	30.91	80226	12.58		100000	100000	
Ti 47	47	1	He	0.333	0.333	20.82	53	13.17		2000	2000	
V 51	51	1	He	-0.071	-0.071	-27.97	520	8.96		2000	2000	
Cr 52	52	1	He	1555.685	1555.685	3.34	4474280	2.74		2000	2000	
Mn 55	55	1	He	1270.417	1270.417	0.54	2680306	0.14		22000	22000	
Fe 56	56	1	He	3.250	3.250	2.26	12670	0.96		100000	100000	
Co 59	59	1	He	2217.406	2217.406	2.53	9014676	2.24		2000	2000	>LDR
Ni 60	60	1	He	1744.643	1744.643	3.17	1749932	2.57		2000	2000	
Cu 63	63	1	He	532.532	532.532	1.25	1405722	1.51		2000	2000	
Zn 66	66	1	He	1984.778	1984.778	3.78	959743	1.54		2000	2000	
As 75	75	1	He	1091.454	1091.454	3.05	376140	0.77		2000	2000	
Se 78	78	2	H2	1610.963	1610.963	1.37	327244	5.61		2000	2000	
Sr 88	88	1	He	5.461	5.461	3.38	17284	0.99		2000	2000	
Mo 95	95	1	He	-0.022	-0.022	-44.64	56	24.98		2000	2000	
Ag 107	107	1	He	525.643	525.643	0.94	2168697	2.05		500	500	>LDR
Cd 111	111	1	He	1134.221	1134.221	1.80	797597	1.06		2000	2000	
Sn 118	118	1	He	7.152	7.152	0.68	14526	0.78		2000	2000	
Sb 121	121	1	He	2142.539	2142.539	1.16	4981743	0.69		2000	2000	>LDR
Ba 137	137	1	He	1060.017	1060.017	2.38	1035779	1.11		2000	2000	
Ce 140	140	1	He	0.000	0.000	431.13	157	13.29		2000	2000	
Gd 157	157	1	He	0.042	0.042	24.58	130	16.81		2000	2000	
Au 197	197	1	He	-0.131	-0.131	-3.95	99	15.20		2000	2000	
Tl 205	205	1	He	419.075	419.075	0.78	2812260	1.55		500	500	
Pb206	206	1	He	2172.206	2172.206	2.04	5220858	0.41		12000	12000	
Pb207	207	1	He	2118.676	2118.676	5.21	4357066	3.13		12000	12000	
Pb 208	208	1	He	2117.680	2117.680	4.09	19571667	2.00		12000	12000	
U 238	238	1	He	-0.023	-0.023	-3.32	12	56.76		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5854181	0.62	7122799	82.19	80	120	
Sc_45	45	2	H2	35566174	7.19	38319065	92.82	80	120	
Ge_72	72	1	He	3330506	2.44	3981131	83.66	80	120	
Ge_72	72	2	H2	10601754	4.24	11928338	88.88	80	120	
In_115	115	1	He	3720152	1.40	4490435	82.85	80	120	
In_115	115	2	H2	9456790	2.46	10423245	90.73	80	120	
Tm_169	169	1	He	3789783	2.31	4215469	89.90	80	120	

Sample Report

Sample Table

Sample Name	SD 320-22657-A-17-A@5
Data File Name	207SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:20:14-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.148	-0.148	-9.07	12	30.43		2000	2000	
Be 9	9	2	H2	181.170	181.170	2.87	27534	7.76		2000	2000	
B 11	11	2	H2	35.167	35.167	3.13	7719	6.06		10000	10000	
Na 23	23	1	He	267.326	267.326	7.00	243659	4.74		100000	100000	
Mg 24	24	1	He	-1.150	-1.150	-8.53	465	7.32		100000	100000	
Al 27	27	1	He	131.978	131.978	3.63	22405	4.15		100000	100000	
P 31	31	1	He	219.711	219.711	9.74	2169	10.31		100000	100000	
K 39	39	1	He	-13.227	-13.227	-23.16	61532	1.57		100000	100000	
Ca 40	40	2	H2	-7.793	-7.793	-7.90	43651	9.95		100000	100000	
Ti 47	47	1	He	-0.009	-0.009	-984.04	23	41.70		2000	2000	
V 51	51	1	He	-0.094	-0.094	-18.14	524	9.74		2000	2000	
Cr 52	52	1	He	299.120	299.120	5.85	975592	5.50		2000	2000	
Mn 55	55	1	He	235.157	235.157	5.58	561014	5.42		22000	22000	
Fe 56	56	1	He	1.031	1.031	6.93	7808	3.76		100000	100000	
Co 59	59	1	He	447.142	447.142	7.53	2054939	7.14		2000	2000	
Ni 60	60	1	He	328.008	328.008	5.26	372348	4.90		2000	2000	
Cu 63	63	1	He	106.392	106.392	5.62	318074	5.00		2000	2000	
Zn 66	66	1	He	412.265	412.265	6.49	231990	5.50		2000	2000	
As 75	75	1	He	215.635	215.635	5.46	86609	4.31		2000	2000	
Se 78	78	2	H2	351.214	351.214	5.70	79238	5.52		2000	2000	
Sr 88	88	1	He	1.038	1.038	3.29	4028	1.79		2000	2000	
Mo 95	95	1	He	-0.043	-0.043	-7.27	29	17.63		2000	2000	
Ag 107	107	1	He	101.662	101.662	6.45	474829	4.92		500	500	
Cd 111	111	1	He	228.926	228.926	6.00	182276	4.46		2000	2000	
Sn 118	118	1	He	1.476	1.476	5.01	3800	3.47		2000	2000	
Sb 121	121	1	He	426.438	426.438	6.78	1123357	5.35		2000	2000	
Ba 137	137	1	He	204.782	204.782	6.84	226578	5.30		2000	2000	
Ce 140	140	1	He	-0.009	-0.009	-5.87	59	11.79		2000	2000	
Gd 157	157	1	He	0.000	0.000	-1643.82	33	30.00		2000	2000	
Au 197	197	1	He	-0.147	-0.147	-1.83	60	16.67		2000	2000	
Tl 205	205	1	He	80.443	80.443	3.76	608639	5.32		500	500	
Pb206	206	1	He	424.326	424.326	3.81	1149831	4.85		12000	12000	
Pb207	207	1	He	399.881	399.881	3.75	927755	5.34		12000	12000	
Pb 208	208	1	He	416.681	416.681	2.14	4343227	3.89		12000	12000	
U 238	238	1	He	-0.024	-0.024	-2.30	9	57.30		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6618459	1.53	7122799	92.92	80	120	
Sc_45	45	2	H2	38811517	4.91	38319065	101.29	80	120	
Ge_72	72	1	He	3867200	1.27	3981131	97.14	80	120	
Ge_72	72	2	H2	11776330	0.95	11928338	98.73	80	120	
In_115	115	1	He	4213998	1.58	4490435	93.84	80	120	
In_115	115	2	H2	10597323	2.26	10423245	101.67	80	120	
Tm_169	169	1	He	4270277	2.59	4215469	101.30	80	120	

Sample Report

Sample Table

Sample Name	320-22657-A-18-A
Data File Name	208SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:23:47-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.139	-0.139	-18.35	12	43.94		2000	2000	
Be 9	9	2	H2	1048.351	1048.351	3.56	143160	8.50		2000	2000	
B 11	11	2	H2	56.835	56.835	4.64	9610	8.60		10000	10000	
Na 23	23	1	He	1803.518	1803.518	2.65	1003894	1.77		100000	100000	
Mg 24	24	1	He	0.293	0.293	64.73	800	7.12		100000	100000	
Al 27	27	1	He	13.029	13.029	2.82	2145	1.61		100000	100000	
P 31	31	1	He	1115.879	1115.879	2.85	8955	2.21		100000	100000	
K 39	39	1	He	25.313	25.313	20.34	64320	1.05		100000	100000	
Ca 40	40	2	H2	0.453	0.453	312.21	66484	12.20		100000	100000	
Ti 47	47	1	He	0.184	0.184	99.25	37	47.03		2000	2000	
V 51	51	1	He	-0.057	-0.057	-40.07	523	11.57		2000	2000	
Cr 52	52	1	He	1327.070	1327.070	1.15	3594075	0.62		2000	2000	
Mn 55	55	1	He	1404.662	1404.662	2.99	2789943	2.82		22000	22000	
Fe 56	56	1	He	1.940	1.940	10.19	8722	4.36		100000	100000	
Co 59	59	1	He	1228.902	1228.902	3.82	4702991	3.07		2000	2000	
Ni 60	60	1	He	1156.797	1156.797	2.79	1092590	2.52		2000	2000	
Cu 63	63	1	He	1168.799	1168.799	2.04	2903465	1.14		2000	2000	
Zn 66	66	1	He	895.283	895.283	2.17	427383	2.02		2000	2000	
As 75	75	1	He	809.661	809.661	2.31	275335	2.13		2000	2000	
Se 78	78	2	H2	1019.650	1019.650	4.26	210549	5.24		2000	2000	
Sr 88	88	1	He	6.266	6.266	1.63	19530	1.20		2000	2000	
Mo 95	95	1	He	-0.019	-0.019	-22.38	60	11.12		2000	2000	
Ag 107	107	1	He	733.225	733.225	2.45	2898925	1.30		500	500	>LDR
Cd 111	111	1	He	1155.097	1155.097	3.52	778434	2.08		2000	2000	
Sn 118	118	1	He	7.712	7.712	4.18	14976	3.11		2000	2000	
Sb 121	121	1	He	1412.842	1412.842	3.87	3148067	1.96		2000	2000	
Ba 137	137	1	He	1250.986	1250.986	3.57	1171526	2.11		2000	2000	
Ce 140	140	1	He	0.000	0.000	1069.84	147	8.20		2000	2000	
Gd 157	157	1	He	0.065	0.065	33.01	177	25.94		2000	2000	
Au 197	197	1	He	-0.134	-0.134	-0.94	86	4.50		2000	2000	
Tl 205	205	1	He	1324.005	1324.005	4.59	8508616	4.71		500	500	>LDR
Pb206	206	1	He	1189.421	1189.421	5.42	2737992	5.08		12000	12000	
Pb207	207	1	He	1153.575	1153.575	4.60	2273062	3.99		12000	12000	
Pb 208	208	1	He	1161.354	1161.354	4.30	10283673	4.12		12000	12000	
U 238	238	1	He	-0.023	-0.023	-3.12	13	43.29		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5511874	1.70	7122799	77.38	80	120	ISTD Failed
Sc_45	45	2	H2	34875809	5.33	38319065	91.01	80	120	
Ge_72	72	1	He	3283961	0.91	3981131	82.49	80	120	
Ge_72	72	2	H2	10778310	1.79	11928338	90.36	80	120	
In_115	115	1	He	3566331	2.39	4490435	79.42	80	120	ISTD Failed
In_115	115	2	H2	9408677	1.10	10423245	90.27	80	120	
Tm_169	169	1	He	3629246	1.64	4215469	86.09	80	120	

Sample Report

Sample Table

Sample Name	SD 320-22657-A-18-A@5
Data File Name	209SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:27:06-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.176	-0.176	-5.16	6	32.78		2000	2000	
Be 9	9	2	H2	206.804	206.804	2.33	32671	6.96		2000	2000	
B 11	11	2	H2	35.327	35.327	2.06	8049	5.93		10000	10000	
Na 23	23	1	He	285.203	285.203	2.79	253104	3.10		100000	100000	
Mg 24	24	1	He	-1.156	-1.156	-4.38	459	4.85		100000	100000	
Al 27	27	1	He	3.298	3.298	7.04	947	5.07		100000	100000	
P 31	31	1	He	239.524	239.524	1.09	2341	1.36		100000	100000	
K 39	39	1	He	-15.181	-15.181	-4.93	60310	0.74		100000	100000	
Ca 40	40	2	H2	-9.984	-9.984	-3.18	37036	9.76		100000	100000	
Ti 47	47	1	He	-0.038	-0.038	-78.58	19	15.80		2000	2000	
V 51	51	1	He	-0.090	-0.090	-26.67	529	12.40		2000	2000	
Cr 52	52	1	He	253.329	253.329	1.80	821198	2.88		2000	2000	
Mn 55	55	1	He	268.334	268.334	2.16	635757	3.21		22000	22000	
Fe 56	56	1	He	0.042	0.042	80.37	4864	1.13		100000	100000	
Co 59	59	1	He	241.120	241.120	2.13	1100784	3.24		2000	2000	
Ni 60	60	1	He	231.030	231.030	1.62	260627	2.74		2000	2000	
Cu 63	63	1	He	229.920	229.920	2.71	681871	3.80		2000	2000	
Zn 66	66	1	He	191.885	191.885	2.60	109586	2.99		2000	2000	
As 75	75	1	He	169.069	169.069	2.53	68803	3.47		2000	2000	
Se 78	78	2	H2	239.920	239.920	5.45	56710	5.89		2000	2000	
Sr 88	88	1	He	1.195	1.195	4.25	4652	3.29		2000	2000	
Mo 95	95	1	He	-0.049	-0.049	-6.24	19	26.96		2000	2000	
Ag 107	107	1	He	146.028	146.028	4.62	685647	3.60		500	500	
Cd 111	111	1	He	236.766	236.766	4.68	189512	3.68		2000	2000	
Sn 118	118	1	He	1.533	1.533	1.88	3947	0.75		2000	2000	
Sb 121	121	1	He	274.421	274.421	4.63	727118	3.57		2000	2000	
Ba 137	137	1	He	248.703	248.703	3.47	276684	2.93		2000	2000	
Ce 140	140	1	He	-0.011	-0.011	-6.74	32	29.85		2000	2000	
Gd 157	157	1	He	0.006	0.006	126.50	49	37.55		2000	2000	
Au 197	197	1	He	-0.150	-0.150	-2.43	50	24.03		2000	2000	
Tl 205	205	1	He	284.675	284.675	3.97	2136401	3.03		500	500	
Pb206	206	1	He	235.141	235.141	4.56	632219	2.79		12000	12000	
Pb207	207	1	He	223.401	223.401	4.97	514155	3.16		12000	12000	
Pb 208	208	1	He	228.207	228.207	5.13	2359932	3.35		12000	12000	
U 238	238	1	He	-0.024	-0.024	-1.51	7	50.03		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6571466	1.17	7122799	92.26	80	120	
Sc_45	45	2	H2	40381889	6.55	38319065	105.38	80	120	
Ge_72	72	1	He	3911314	1.41	3981131	98.25	80	120	
Ge_72	72	2	H2	12332049	0.62	11928338	103.38	80	120	
In_115	115	1	He	4235022	1.40	4490435	94.31	80	120	
In_115	115	2	H2	11044766	1.41	10423245	105.96	80	120	
Tm_169	169	1	He	4239109	1.98	4215469	100.56	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	210_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:30:39-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	103.656	1.980	22936	7.39	100	103.7	90	110	
Be 9	9	2	H2	99.148	3.731	15187	9.32	100	99.1	90	110	
Na 23	23	1	He	5163.275	1.838	3448613	1.47	5100	101.2	90	110	
Mg 24	24	1	He	4996.390	3.826	1791863	3.77	5100	98.0	90	110	
Al 27	27	1	He	4923.662	3.110	855553	2.53	5100	96.5	90	110	
P 31	31	1	He	4792.195	3.136	47909	2.64	5000	95.8	90	110	
K 39	39	1	He	5031.809	4.537	2207567	3.74	5100	98.7	90	110	
Ca 40	40	2	H2	5170.233	8.929	19228522	14.60	5100	101.4	90	110	
Ti 47	47	1	He	198.599	2.836	22799	2.41	200	99.3	90	110	
V 51	51	1	He	102.753	2.921	303531	2.36	100	102.8	90	110	
Cr 52	52	1	He	102.967	2.921	352540	2.29	100	103.0	90	110	
Mn 55	55	1	He	100.995	2.914	251196	2.30	100	101.0	90	110	
Fe 56	56	1	He	5130.222	1.981	15711167	1.22	5100	100.6	90	110	
Co 59	59	1	He	104.372	2.658	500070	2.08	100	104.4	90	110	
Ni 60	60	1	He	104.452	2.478	123928	1.82	100	104.5	90	110	
Cu 63	63	1	He	104.148	2.990	324526	2.42	100	104.1	90	110	
Zn 66	66	1	He	98.136	3.249	57934	2.33	100	98.1	90	110	
As 75	75	1	He	98.559	2.849	41406	1.84	100	98.6	90	110	
Se 78	78	2	H2	99.537	5.131	24039	6.59	100	99.5	90	110	
Sr 88	88	1	He	95.805	3.150	361784	2.15	100	95.8	90	110	
Mo 95	95	1	He	198.618	3.843	354874	3.03	200	99.3	90	110	
Ag 107	107	1	He	51.397	3.260	249832	3.21	50	102.8	90	110	
Cd 111	111	1	He	100.877	3.134	83582	2.89	100	100.9	90	110	
Sn 118	118	1	He	100.776	2.079	234158	1.64	100	100.8	90	110	
Sb 121	121	1	He	50.746	2.554	140068	2.47	50	101.5	90	110	
Ba 137	137	1	He	99.080	2.337	114087	1.57	100	99.1	90	110	
Ce 140	140	1	He	102.361	2.392	1350344	1.95	100	102.4	90	110	
Gd 157	157	1	He	96.888	3.308	275271	2.49	100	96.9	90	110	
Au 197	197	1	He	99.159	2.983	339254	2.27	100	99.2	90	110	
Tl 205	205	1	He	48.911	3.009	390681	2.27	50	97.8	90	110	
Pb206	206	1	He	97.308	2.873	278569	2.14	100	97.3	1	10000	
Pb207	207	1	He	97.469	2.844	238851	1.98	100	97.5	1	10000	
Pb 208	208	1	He	97.158	2.947	1069825	2.07	100	97.2	90	110	
U 238	238	1	He	97.190	3.369	988045	2.42	100	97.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6896796	0.77	7122799	96.83	80	120	
Sc_45	45	2	H2	39092285	5.59	38319065	102.02	80	120	
Ge_72	72	1	He	4022543	1.19	3981131	101.04	80	120	
Ge_72	72	2	H2	12583865	1.49	11928338	105.50	80	120	
In_115	115	1	He	4382369	1.15	4490435	97.59	80	120	
In_115	115	2	H2	11096617	1.23	10423245	106.46	80	120	
Tm_169	169	1	He	4509138	0.96	4215469	106.97	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	211_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:34:06-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.133	-9.2	15	12.5	10	
Be 9	9	2	H2	-0.010	-132.9	5	45.8	1	
Na 23	23	1	He	-84.422	-1.6	24167	2.3	50	>+/-RL
Mg 24	24	1	He	-0.860	-10.0	583	6.8	50	
Al 27	27	1	He	0.018	957.7	421	8.4	50	
P 31	31	1	He	1.155	44.5	76	7.0	50	
K 39	39	1	He	-15.947	-6.4	62405	1.0	50	
Ca 40	40	2	H2	-0.038	-3245.7	74785	13.0	50	
Ti 47	47	1	He	-0.056	-33.4	18	11.1	5	
V 51	51	1	He	-0.069	-17.8	611	5.4	10	
Cr 52	52	1	He	-0.119	-33.7	3476	2.4	2	
Mn 55	55	1	He	0.049	30.8	333	12.0	1	
Fe 56	56	1	He	0.032	297.5	5033	7.4	50	
Co 59	59	1	He	0.011	44.2	272	6.5	1	
Ni 60	60	1	He	0.042	64.8	574	4.7	2	
Cu 63	63	1	He	-0.064	-15.7	653	6.3	2	
Zn 66	66	1	He	0.045	136.6	660	5.2	5	
As 75	75	1	He	-0.199	-37.8	328	9.1	2	
Se 78	78	2	H2	0.068	23.9	57	10.0	2	
Sr 88	88	1	He	-0.008	-115.1	247	14.2	5	
Mo 95	95	1	He	0.007	80.3	121	7.9	2	
Ag 107	107	1	He	0.007	69.6	98	23.2	1	
Cd 111	111	1	He	0.009	44.6	22	15.7	1	
Sn 118	118	1	He	0.126	9.8	841	4.2	10	
Sb 121	121	1	He	-0.278	-2.4	338	6.6	2	
Ba 137	137	1	He	0.003	635.9	39	55.8	1	
Ce 140	140	1	He	-0.001	-139.1	163	15.9	5	
Gd 157	157	1	He	-0.002	-32.5	31	6.2	1	
Au 197	197	1	He	-0.050	-59.0	389	24.5	5	
Tl 205	205	1	He	0.038	30.2	488	17.1	1	
Pb206	206	1	He	0.020	77.8	319	13.6	1	
Pb207	207	1	He	0.020	74.5	270	13.9	1	
Pb 208	208	1	He	0.020	20.2	1247	4.0	1	
U 238	238	1	He	-0.001	-421.5	237	17.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6835237	1.71	7122799	95.96	80	120	
Sc_45	45	2	H2	40195624	6.73	38319065	104.90	80	120	
Ge_72	72	1	He	4056641	0.89	3981131	101.90	80	120	
Ge_72	72	2	H2	12822092	3.69	11928338	107.49	80	120	
In_115	115	1	He	4469386	1.10	4490435	99.53	80	120	
In_115	115	2	H2	11480118	1.48	10423245	110.14	80	120	
Tm_169	169	1	He	4455178	1.45	4215469	105.69	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	212_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:37:42-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	103.811	3.758	22444	6.54	100	103.8	90	110	
Be 9	9	2	H2	96.513	3.854	14436	6.82	100	96.5	90	110	
Na 23	23	1	He	5239.244	3.629	3310637	2.37	5100	102.7	90	110	
Mg 24	24	1	He	5062.259	4.319	1718137	3.52	5100	99.3	90	110	
Al 27	27	1	He	4928.625	2.576	810656	1.78	5100	96.6	90	110	
P 31	31	1	He	4882.375	2.970	46200	2.21	5000	97.6	90	110	
K 39	39	1	He	5074.662	4.414	2106729	3.33	5100	99.5	90	110	
Ca 40	40	2	H2	4942.242	7.968	17936365	11.39	5100	96.9	90	110	
Ti 47	47	1	He	199.177	2.807	21645	2.72	200	99.6	90	110	
V 51	51	1	He	103.871	2.991	290426	2.35	100	103.9	90	110	
Cr 52	52	1	He	103.495	2.942	335391	2.17	100	103.5	90	110	
Mn 55	55	1	He	100.912	3.743	237567	3.01	100	100.9	90	110	
Fe 56	56	1	He	5080.659	4.114	14724946	2.83	5100	99.6	90	110	
Co 59	59	1	He	104.865	3.300	475545	2.33	100	104.9	90	110	
Ni 60	60	1	He	104.724	3.941	117598	3.07	100	104.7	90	110	
Cu 63	63	1	He	105.397	3.766	310838	2.96	100	105.4	90	110	
Zn 66	66	1	He	96.243	4.782	54575	3.18	100	96.2	90	110	
As 75	75	1	He	97.493	3.479	39344	1.99	100	97.5	90	110	
Se 78	78	2	H2	98.107	5.088	23284	5.01	100	98.1	90	110	
Sr 88	88	1	He	95.190	4.828	345213	3.30	100	95.2	90	110	
Mo 95	95	1	He	199.001	3.721	341503	2.18	200	99.5	90	110	
Ag 107	107	1	He	51.792	3.364	239880	2.20	50	103.6	90	110	
Cd 111	111	1	He	100.579	4.034	79405	2.92	100	100.6	90	110	
Sn 118	118	1	He	101.726	3.870	225212	2.59	100	101.7	90	110	
Sb 121	121	1	He	50.198	5.030	132009	3.58	50	100.4	90	110	
Ba 137	137	1	He	99.445	3.796	109114	2.64	100	99.4	90	110	
Ce 140	140	1	He	101.885	4.259	1280677	3.08	100	101.9	90	110	
Gd 157	157	1	He	98.545	0.521	262355	2.29	100	98.5	90	110	
Au 197	197	1	He	101.832	1.517	326464	3.02	100	101.8	90	110	
Tl 205	205	1	He	49.509	1.815	370564	3.04	50	99.0	90	110	
Pb206	206	1	He	98.843	1.973	265171	3.54	100	98.8	1	10000	
Pb207	207	1	He	97.530	0.467	223937	1.80	100	97.5	1	10000	
Pb 208	208	1	He	98.765	0.648	1019068	2.48	100	98.8	90	110	
U 238	238	1	He	98.671	1.118	940034	2.83	100	98.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6528755	1.57	7122799	91.66	80	120	
Sc_45	45	2	H2	38201561	3.53	38319065	99.69	80	120	
Ge_72	72	1	He	3864093	1.55	3981131	97.06	80	120	
Ge_72	72	2	H2	12372567	0.60	11928338	103.72	80	120	
In_115	115	1	He	4176706	1.49	4490435	93.01	80	120	
In_115	115	2	H2	11164209	2.64	10423245	107.11	80	120	
Tm_169	169	1	He	4224321	1.92	4215469	100.21	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	213_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:41:11-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.116	-21.0	19	34.2	10	
Be 9	9	2	H2	-0.028	-26.7	2	58.1	1	
Na 23	23	1	He	-83.671	-0.4	24081	0.8	50	>+/-RL
Mg 24	24	1	He	-0.911	-18.9	551	10.0	50	
Al 27	27	1	He	0.071	132.9	419	2.6	50	
P 31	31	1	He	-0.802	-84.7	55	12.7	50	
K 39	39	1	He	-11.016	-38.0	62962	2.0	50	
Ca 40	40	2	H2	0.395	336.7	74920	12.0	50	
Ti 47	47	1	He	-0.118	-58.4	11	71.0	5	
V 51	51	1	He	-0.062	-11.7	619	3.3	10	
Cr 52	52	1	He	-0.133	-25.5	3350	2.4	2	
Mn 55	55	1	He	0.042	40.9	307	12.0	1	
Fe 56	56	1	He	-0.018	-680.7	4763	6.9	50	
Co 59	59	1	He	0.003	59.8	232	3.8	1	
Ni 60	60	1	He	-0.028	-40.7	481	3.2	2	
Cu 63	63	1	He	-0.088	-7.5	566	4.6	2	
Zn 66	66	1	He	-0.042	-96.7	589	3.0	5	
As 75	75	1	He	-0.201	-31.9	316	8.7	2	
Se 78	78	2	H2	0.004	1105.1	40	27.3	2	
Sr 88	88	1	He	-0.002	-191.6	259	5.7	5	
Mo 95	95	1	He	-0.003	-1124.0	100	49.8	2	
Ag 107	107	1	He	0.003	104.4	74	20.2	1	
Cd 111	111	1	He	-0.009	-30.6	7	34.6	1	
Sn 118	118	1	He	0.182	33.9	926	17.1	10	
Sb 121	121	1	He	-0.292	-6.8	282	18.2	2	
Ba 137	137	1	He	0.001	462.5	34	11.2	1	
Ce 140	140	1	He	-0.005	-90.3	116	47.8	5	
Gd 157	157	1	He	-0.004	-124.0	22	67.6	1	
Au 197	197	1	He	-0.049	-46.4	380	19.8	5	
Tl 205	205	1	He	0.013	41.3	282	14.4	1	
Pb206	206	1	He	0.021	90.8	310	16.1	1	
Pb207	207	1	He	0.009	95.7	236	8.3	1	
Pb 208	208	1	He	0.018	74.4	1176	11.4	1	
U 238	238	1	He	-0.005	-159.4	194	36.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6674938	1.52	7122799	93.71	80	120	
Sc_45	45	2	H2	39414153	5.47	38319065	102.86	80	120	
Ge_72	72	1	He	3925459	0.88	3981131	98.60	80	120	
Ge_72	72	2	H2	12631987	3.75	11928338	105.90	80	120	
In_115	115	1	He	4243232	2.16	4490435	94.49	80	120	
In_115	115	2	H2	11117289	1.75	10423245	106.66	80	120	
Tm_169	169	1	He	4299046	0.46	4215469	101.98	80	120	

Sample Report

Sample Table

Sample Name	MB 320-134394/1-A
Data File Name	214SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:44:46-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.130	-0.130	-1.33	14	7.52		2000	2000	
Be 9	9	2	H2	-0.033	-0.033	-22.10	1	89.21		2000	2000	
B 11	11	2	H2	29.939	29.939	5.35	6282	7.13		10000	10000	
Na 23	23	1	He	-83.077	-83.077	-1.19	20873	1.77		100000	100000	
Mg 24	24	1	He	-0.536	-0.536	-33.35	582	9.34		100000	100000	
Al 27	27	1	He	1.136	1.136	19.24	511	5.22		100000	100000	
P 31	31	1	He	12.476	12.476	20.36	157	13.10		100000	100000	
K 39	39	1	He	8.849	8.849	29.94	60722	1.33		100000	100000	
Ca 40	40	2	H2	-7.964	-7.964	-8.80	38587	10.59		100000	100000	
Ti 47	47	1	He	0.090	0.090	224.83	29	64.82		2000	2000	
V 51	51	1	He	-0.005	-0.005	-328.24	667	4.08		2000	2000	
Cr 52	52	1	He	0.305	0.305	27.21	4084	5.42		2000	2000	
Mn 55	55	1	He	0.017	0.017	142.42	211	24.12		22000	22000	
Fe 56	56	1	He	2.045	2.045	6.94	9283	2.89		100000	100000	
Co 59	59	1	He	1.369	1.369	4.00	5601	3.34		2000	2000	
Ni 60	60	1	He	-0.339	-0.339	-1.45	107	3.90		2000	2000	
Cu 63	63	1	He	-0.100	-0.100	-10.58	451	7.19		2000	2000	
Zn 66	66	1	He	-0.588	-0.588	-4.48	239	4.62		2000	2000	
As 75	75	1	He	-0.218	-0.218	-21.65	266	6.26		2000	2000	
Se 78	78	2	H2	0.020	0.020	115.57	38	9.88		2000	2000	
Sr 88	88	1	He	-0.026	-0.026	-30.04	147	17.45		2000	2000	
Mo 95	95	1	He	-0.016	-0.016	-80.46	66	29.80		2000	2000	
Ag 107	107	1	He	0.001	0.001	188.30	59	16.34		500	500	
Cd 111	111	1	He	0.001	0.001	630.03	13	18.23		2000	2000	
Sn 118	118	1	He	7.130	7.130	6.60	14652	5.65		2000	2000	
Sb 121	121	1	He	-0.292	-0.292	-7.03	250	19.23		2000	2000	
Ba 137	137	1	He	0.016	0.016	64.04	46	22.36		2000	2000	
Ce 140	140	1	He	-0.006	-0.006	-39.17	83	31.75		2000	2000	
Gd 157	157	1	He	-0.005	-0.005	-67.66	18	47.19		2000	2000	
Au 197	197	1	He	-0.104	-0.104	-25.06	174	43.59		2000	2000	
Tl 205	205	1	He	0.020	0.020	32.47	291	13.66		500	500	
Pb206	206	1	He	0.054	0.054	19.28	346	6.13		12000	12000	
Pb207	207	1	He	0.051	0.051	20.60	288	8.69		12000	12000	
Pb 208	208	1	He	0.053	0.053	16.37	1331	7.27		12000	12000	
U 238	238	1	He	-0.004	-0.004	-120.44	170	27.80		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5697542	1.41	7122799	79.99	80	120	ISTD Failed
Sc_45	45	2	H2	34808043	5.15	38319065	90.84	80	120	
Ge_72	72	1	He	3371821	0.82	3981131	84.70	80	120	
Ge_72	72	2	H2	11006436	3.09	11928338	92.27	80	120	
In_115	115	1	He	3764986	2.06	4490435	83.84	80	120	
In_115	115	2	H2	9954067	3.51	10423245	95.50	80	120	
Tm_169	169	1	He	3712514	1.50	4215469	88.07	80	120	

Sample Report

Sample Table

Sample Name	LCS 320-134394/2-A
Data File Name	215SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:48:21-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	195.312	195.312	3.99	39122	7.74		2000	2000	
Be 9	9	2	H2	182.168	182.168	2.87	25258	7.13		2000	2000	
B 11	11	2	H2	983.680	983.680	4.04	125674	9.00		10000	10000	
Na 23	23	1	He	905.528	905.528	2.11	572959	2.15		100000	100000	
Mg 24	24	1	He	946.737	946.737	2.91	290789	2.61		100000	100000	
Al 27	27	1	He	958.561	958.561	3.19	142667	3.43		100000	100000	
P 31	31	1	He	896.293	896.293	1.46	7704	1.70		100000	100000	
K 39	39	1	He	939.394	939.394	2.28	400780	2.05		100000	100000	
Ca 40	40	2	H2	987.467	987.467	5.25	3379430	11.86		100000	100000	
Ti 47	47	1	He	193.714	193.714	2.41	19008	2.52		2000	2000	
V 51	51	1	He	200.246	200.246	3.17	504963	3.47		2000	2000	
Cr 52	52	1	He	203.572	203.572	2.22	592505	2.48		2000	2000	
Mn 55	55	1	He	194.089	194.089	3.38	412488	3.76		22000	22000	
Fe 56	56	1	He	1046.624	1046.624	2.92	2743574	3.89		100000	100000	
Co 59	59	1	He	206.117	206.117	2.89	844001	3.43		2000	2000	
Ni 60	60	1	He	204.319	204.319	2.52	206802	3.39		2000	2000	
Cu 63	63	1	He	205.252	205.252	2.49	546000	2.96		2000	2000	
Zn 66	66	1	He	177.425	177.425	6.17	88506	2.81		2000	2000	
As 75	75	1	He	181.313	181.313	6.12	64388	2.73		2000	2000	
Se 78	78	2	H2	159.891	159.891	4.35	34396	3.95		2000	2000	
Sr 88	88	1	He	188.228	188.228	6.13	603335	2.83		2000	2000	
Mo 95	95	1	He	210.699	210.699	6.64	319625	3.33		2000	2000	
Ag 107	107	1	He	53.175	53.175	1.30	216572	2.42		500	500	
Cd 111	111	1	He	196.267	196.267	1.90	136254	2.92		2000	2000	
Sn 118	118	1	He	211.058	211.058	2.06	410460	3.15		2000	2000	
Sb 121	121	1	He	204.542	204.542	0.41	470247	1.52		2000	2000	
Ba 137	137	1	He	199.317	199.317	1.81	192301	2.98		2000	2000	
Ce 140	140	1	He	209.709	209.709	1.81	2317675	1.83		2000	2000	
Gd 157	157	1	He	194.724	194.724	2.56	458009	2.98		2000	2000	
Au 197	197	1	He	193.521	193.521	2.98	547671	3.08		2000	2000	
Tl 205	205	1	He	50.499	50.499	3.31	333948	3.74		500	500	
Pb206	206	1	He	195.420	195.420	2.62	462922	2.88		12000	12000	
Pb207	207	1	He	201.664	201.664	2.76	408910	2.79		12000	12000	
Pb 208	208	1	He	198.871	198.871	3.01	1811997	3.16		12000	12000	
U 238	238	1	He	206.286	206.286	3.22	1735740	2.62		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5894499	1.22	7122799	82.76	80	120	
Sc_45	45	2	H2	35453127	7.25	38319065	92.52	80	120	
Ge_72	72	1	He	3419679	3.46	3981131	85.90	80	120	
Ge_72	72	2	H2	11223986	1.75	11928338	94.10	80	120	
In_115	115	1	He	3671437	1.19	4490435	81.76	80	120	
In_115	115	2	H2	10126712	1.71	10423245	97.16	80	120	
Tm_169	169	1	He	3732555	1.65	4215469	88.54	80	120	

Sample Report

Sample Table

Sample Name	LCSD 320-134394/3-A
Data File Name	216SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:51:50-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	192.092	192.092	3.59	40113	7.61		2000	2000	
Be 9	9	2	H2	180.435	180.435	4.07	26086	8.06		2000	2000	
B 11	11	2	H2	975.689	975.689	5.55	129955	9.53		10000	10000	
Na 23	23	1	He	908.832	908.832	3.69	591855	4.54		100000	100000	
Mg 24	24	1	He	954.858	954.858	3.04	301993	4.24		100000	100000	
Al 27	27	1	He	966.194	966.194	3.21	148059	4.40		100000	100000	
P 31	31	1	He	901.024	901.024	4.83	7976	6.13		100000	100000	
K 39	39	1	He	935.413	935.413	3.79	411185	4.47		100000	100000	
Ca 40	40	2	H2	968.112	968.112	8.89	3452351	12.70		100000	100000	
Ti 47	47	1	He	192.875	192.875	3.39	19488	4.67		2000	2000	
V 51	51	1	He	202.618	202.618	3.83	526090	5.05		2000	2000	
Cr 52	52	1	He	204.229	204.229	3.59	612040	4.78		2000	2000	
Mn 55	55	1	He	195.595	195.595	3.58	428001	4.80		22000	22000	
Fe 56	56	1	He	1045.884	1045.884	3.64	2822303	4.62		100000	100000	
Co 59	59	1	He	206.223	206.223	3.38	869431	4.67		2000	2000	
Ni 60	60	1	He	205.651	205.651	4.26	214307	5.45		2000	2000	
Cu 63	63	1	He	205.794	205.794	4.38	563702	5.63		2000	2000	
Zn 66	66	1	He	178.359	178.359	4.76	91019	4.88		2000	2000	
As 75	75	1	He	181.862	181.862	4.34	66069	4.50		2000	2000	
Se 78	78	2	H2	162.774	162.774	2.38	35122	6.15		2000	2000	
Sr 88	88	1	He	190.788	190.788	4.98	625615	5.10		2000	2000	
Mo 95	95	1	He	212.097	212.097	4.95	329190	5.07		2000	2000	
Ag 107	107	1	He	52.041	52.041	6.45	223531	4.77		500	500	
Cd 111	111	1	He	190.809	190.809	7.31	139684	5.68		2000	2000	
Sn 118	118	1	He	208.416	208.416	6.99	427413	5.31		2000	2000	
Sb 121	121	1	He	197.875	197.875	6.86	479836	5.35		2000	2000	
Ba 137	137	1	He	196.032	196.032	6.82	199441	5.15		2000	2000	
Ce 140	140	1	He	210.677	210.677	6.76	2456112	5.43		2000	2000	
Gd 157	157	1	He	194.853	194.853	4.02	481111	5.66		2000	2000	
Au 197	197	1	He	188.972	188.972	3.94	561418	5.46		2000	2000	
Tl 205	205	1	He	49.256	49.256	3.32	341839	4.32		500	500	
Pb206	206	1	He	193.760	193.760	3.62	481717	4.60		12000	12000	
Pb207	207	1	He	199.934	199.934	3.25	425495	4.31		12000	12000	
Pb 208	208	1	He	196.027	196.027	3.08	1874564	4.20		12000	12000	
U 238	238	1	He	203.587	203.587	2.07	1798378	4.08		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6067768	1.55	7122799	85.19	80	120	
Sc_45	45	2	H2	36917689	4.25	38319065	96.34	80	120	
Ge_72	72	1	He	3493375	0.23	3981131	87.75	80	120	
Ge_72	72	2	H2	11248819	3.76	11928338	94.30	80	120	
In_115	115	1	He	3875224	1.83	4490435	86.30	80	120	
In_115	115	2	H2	10336230	0.26	10423245	99.17	80	120	
Tm_169	169	1	He	3916794	2.25	4215469	92.91	80	120	

Sample Table

Sample Name	320-22742-A-1-B DU
Data File Name	217SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:55:21-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.007	-0.007	-558.97	39	18.18		2000	2000	
Be 9	9	2	H2	-0.023	-0.023	-57.37	3	70.99		2000	2000	
B 11	11	2	H2	45.020	45.020	2.89	8399	9.39		10000	10000	
Na 23	23	1	He	-66.619	-66.619	-1.71	31677	1.14		100000	100000	
Mg 24	24	1	He	4.513	4.513	7.40	2211	4.27		100000	100000	
Al 27	27	1	He	12.260	12.260	10.87	2243	8.20		100000	100000	
P 31	31	1	He	12.156	12.156	16.60	164	9.98		100000	100000	
K 39	39	1	He	14.455	14.455	28.68	66757	1.37		100000	100000	
Ca 40	40	2	H2	32.938	32.938	11.39	179258	15.01		100000	100000	
Ti 47	47	1	He	0.168	0.168	69.71	39	31.18		2000	2000	
V 51	51	1	He	0.011	0.011	268.73	750	9.07		2000	2000	
Cr 52	52	1	He	0.806	0.806	4.76	5842	2.83		2000	2000	
Mn 55	55	1	He	0.391	0.391	7.47	1043	5.56		22000	22000	
Fe 56	56	1	He	35.515	35.515	4.88	100019	3.82		100000	100000	
Co 59	59	1	He	0.213	0.213	10.42	1094	7.82		2000	2000	
Ni 60	60	1	He	0.004	0.004	374.27	470	2.66		2000	2000	
Cu 63	63	1	He	14.897	14.897	5.12	41479	4.21		2000	2000	
Zn 66	66	1	He	65.029	65.029	5.73	34359	3.70		2000	2000	
As 75	75	1	He	0.114	0.114	60.60	406	7.97		2000	2000	
Se 78	78	2	H2	0.086	0.086	56.27	55	22.05		2000	2000	
Sr 88	88	1	He	0.349	0.349	2.81	1417	1.08		2000	2000	
Mo 95	95	1	He	0.946	0.946	9.98	1599	7.49		2000	2000	
Ag 107	107	1	He	0.020	0.020	6.19	137	4.88		500	500	
Cd 111	111	1	He	0.917	0.917	9.28	669	10.11		2000	2000	
Sn 118	118	1	He	7.477	7.477	2.71	15441	3.96		2000	2000	
Sb 121	121	1	He	-0.183	-0.183	-13.52	510	10.52		2000	2000	
Ba 137	137	1	He	4.016	4.016	3.06	4026	4.30		2000	2000	
Ce 140	140	1	He	0.004	0.004	107.10	196	21.18		2000	2000	
Gd 157	157	1	He	0.000	0.000	3267.63	31	52.86		2000	2000	
Au 197	197	1	He	0.013	0.013	293.29	519	22.15		2000	2000	
Tl 205	205	1	He	0.017	0.017	19.79	278	7.99		500	500	
Pb206	206	1	He	0.757	0.757	2.76	2066	3.26		12000	12000	
Pb207	207	1	He	0.698	0.698	8.31	1645	7.87		12000	12000	
Pb 208	208	1	He	0.716	0.716	6.02	7575	5.88		12000	12000	
U 238	238	1	He	0.004	0.004	217.73	248	31.10		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6067577	0.94	7122799	85.19	80	120	
Sc_45	45	2	H2	35932993	7.92	38319065	93.77	80	120	
Ge_72	72	1	He	3582393	2.00	3981131	89.98	80	120	
Ge_72	72	2	H2	11461203	2.85	11928338	96.08	80	120	
In_115	115	1	He	3786365	1.36	4490435	84.32	80	120	
In_115	115	2	H2	10401119	2.17	10423245	99.79	80	120	
Tm_169	169	1	He	3831562	0.82	4215469	90.89	80	120	

Sample Report

Sample Table

Sample Name	320-22742-A-1-A
Data File Name	218SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T21:58:57-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.044	-0.044	-94.45	32	23.44		2000	2000	
Be 9	9	2	H2	-0.022	-0.022	-32.94	3	44.41		2000	2000	
B 11	11	2	H2	40.553	40.553	4.85	7833	7.42		10000	10000	
Na 23	23	1	He	-66.026	-66.026	-1.32	31917	1.38		100000	100000	
Mg 24	24	1	He	4.808	4.808	10.44	2297	6.23		100000	100000	
Al 27	27	1	He	12.908	12.908	3.47	2335	3.19		100000	100000	
P 31	31	1	He	17.542	17.542	9.63	211	6.46		100000	100000	
K 39	39	1	He	16.244	16.244	32.44	67209	2.29		100000	100000	
Ca 40	40	2	H2	32.461	32.461	7.92	177972	14.65		100000	100000	
Ti 47	47	1	He	0.163	0.163	61.91	38	26.32		2000	2000	
V 51	51	1	He	-0.001	-0.001	-1006.62	717	3.96		2000	2000	
Cr 52	52	1	He	0.819	0.819	3.02	5863	1.90		2000	2000	
Mn 55	55	1	He	0.339	0.339	16.04	926	12.41		22000	22000	
Fe 56	56	1	He	36.384	36.384	4.53	102036	3.73		100000	100000	
Co 59	59	1	He	0.221	0.221	4.66	1126	3.76		2000	2000	
Ni 60	60	1	He	0.025	0.025	153.45	490	7.56		2000	2000	
Cu 63	63	1	He	15.276	15.276	4.25	42382	3.62		2000	2000	
Zn 66	66	1	He	64.993	64.993	5.19	35171	4.71		2000	2000	
As 75	75	1	He	0.058	0.058	111.90	394	7.82		2000	2000	
Se 78	78	2	H2	0.068	0.068	124.35	51	35.41		2000	2000	
Sr 88	88	1	He	0.342	0.342	9.06	1428	6.27		2000	2000	
Mo 95	95	1	He	0.982	0.982	6.08	1697	4.14		2000	2000	
Ag 107	107	1	He	0.012	0.012	19.74	109	7.07		500	500	
Cd 111	111	1	He	0.894	0.894	16.78	682	13.48		2000	2000	
Sn 118	118	1	He	7.223	7.223	8.75	15637	5.63		2000	2000	
Sb 121	121	1	He	-0.215	-0.215	-1.80	457	3.34		2000	2000	
Ba 137	137	1	He	3.965	3.965	4.42	4166	2.89		2000	2000	
Ce 140	140	1	He	-0.006	-0.006	-17.46	93	12.88		2000	2000	
Gd 157	157	1	He	-0.011	-0.011	-14.12	4	86.60		2000	2000	
Au 197	197	1	He	-0.123	-0.123	-2.78	129	8.31		2000	2000	
Tl 205	205	1	He	-0.001	-0.001	-728.05	166	25.33		500	500	
Pb206	206	1	He	0.724	0.724	6.72	2063	6.20		12000	12000	
Pb207	207	1	He	0.732	0.732	6.30	1781	6.12		12000	12000	
Pb 208	208	1	He	0.708	0.708	3.12	7793	3.23		12000	12000	
U 238	238	1	He	-0.018	-0.018	-5.24	58	14.52		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6047947	0.65	7122799	84.91	80	120	
Sc_45	45	2	H2	36043135	10.71	38319065	94.06	80	120	
Ge_72	72	1	He	3667127	1.67	3981131	92.11	80	120	
Ge_72	72	2	H2	11654377	3.75	11928338	97.70	80	120	
In_115	115	1	He	3972483	2.95	4490435	88.47	80	120	
In_115	115	2	H2	10087017	0.45	10423245	96.77	80	120	
Tm_169	169	1	He	3979793	0.52	4215469	94.41	80	120	

Sample Report

Sample Table

Sample Name	SD 320-22742-A-1-A@5
Data File Name	219SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:02:31-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.048	-0.048	-145.94	34	50.06		2000	2000	
Be 9	9	2	H2	0.088	0.088	228.81	21	156.38		2000	2000	
B 11	11	2	H2	38.876	38.876	4.93	8169	7.09		10000	10000	
Na 23	23	1	He	-89.563	-89.563	-1.26	20585	0.91		100000	100000	
Mg 24	24	1	He	-0.423	-0.423	-14.62	729	4.13		100000	100000	
Al 27	27	1	He	2.845	2.845	2.56	896	2.32		100000	100000	
P 31	31	1	He	3.125	3.125	50.89	94	12.94		100000	100000	
K 39	39	1	He	-10.992	-10.992	-27.24	63697	1.58		100000	100000	
Ca 40	40	2	H2	-1.417	-1.417	-179.50	66760	18.82		100000	100000	
Ti 47	47	1	He	-0.031	-0.031	-174.50	21	29.57		2000	2000	
V 51	51	1	He	-0.087	-0.087	-13.09	553	6.49		2000	2000	
Cr 52	52	1	He	0.032	0.032	96.80	3934	3.00		2000	2000	
Mn 55	55	1	He	0.032	0.032	24.04	286	3.05		22000	22000	
Fe 56	56	1	He	6.910	6.910	2.76	25602	5.44		100000	100000	
Co 59	59	1	He	0.007	0.007	103.10	249	9.40		2000	2000	
Ni 60	60	1	He	-0.307	-0.307	-0.81	163	5.10		2000	2000	
Cu 63	63	1	He	2.950	2.950	2.10	9818	3.58		2000	2000	
Zn 66	66	1	He	13.742	13.742	5.30	8623	6.26		2000	2000	
As 75	75	1	He	-0.148	-0.148	-45.91	345	9.22		2000	2000	
Se 78	78	2	H2	0.133	0.133	125.23	70	57.48		2000	2000	
Sr 88	88	1	He	0.037	0.037	30.97	412	8.99		2000	2000	
Mo 95	95	1	He	0.137	0.137	13.22	350	8.25		2000	2000	
Ag 107	107	1	He	0.003	0.003	139.14	77	27.15		500	500	
Cd 111	111	1	He	0.153	0.153	17.03	140	16.23		2000	2000	
Sn 118	118	1	He	1.694	1.694	4.92	4409	3.75		2000	2000	
Sb 121	121	1	He	-0.292	-0.292	-4.70	290	11.49		2000	2000	
Ba 137	137	1	He	0.789	0.789	5.09	932	4.53		2000	2000	
Ce 140	140	1	He	-0.011	-0.011	-4.02	39	13.09		2000	2000	
Gd 157	157	1	He	-0.010	-0.010	-0.61	7	0.00		2000	2000	
Au 197	197	1	He	-0.151	-0.151	-3.87	48	38.42		2000	2000	
Tl 205	205	1	He	-0.011	-0.011	-13.79	104	10.26		500	500	
Pb206	206	1	He	0.173	0.173	8.02	738	7.70		12000	12000	
Pb207	207	1	He	0.183	0.183	17.96	651	11.64		12000	12000	
Pb 208	208	1	He	0.165	0.165	5.54	2768	6.16		12000	12000	
U 238	238	1	He	-0.023	-0.023	-5.34	19	66.81		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6753371	3.39	7122799	94.81	80	120	
Sc_45	45	2	H2	38531891	4.92	38319065	100.56	80	120	
Ge_72	72	1	He	4006140	1.66	3981131	100.63	80	120	
Ge_72	72	2	H2	12393340	1.13	11928338	103.90	80	120	
In_115	115	1	He	4335502	1.44	4490435	96.55	80	120	
In_115	115	2	H2	11179619	1.84	10423245	107.26	80	120	
Tm_169	169	1	He	4370401	2.60	4215469	103.68	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	220_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:06:06-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	103.765	2.170	22730	8.51	100	103.8	90	110	
Be 9	9	2	H2	95.217	2.045	14435	9.17	100	95.2	90	110	
Na 23	23	1	He	5042.380	3.533	3500720	4.11	5100	98.9	90	110	
Mg 24	24	1	He	4831.070	3.261	1800075	4.27	5100	94.7	90	110	
Al 27	27	1	He	4689.810	3.305	846643	3.82	5100	92.0	90	110	
P 31	31	1	He	4559.106	4.219	47358	4.87	5000	91.2	90	110	
K 39	39	1	He	4808.992	4.740	2195562	5.35	5100	94.3	90	110	
Ca 40	40	2	H2	4897.886	7.001	18047352	14.76	5100	96.0	90	110	
Ti 47	47	1	He	192.244	4.061	22930	4.74	200	96.1	90	110	
V 51	51	1	He	99.206	3.050	304459	3.34	100	99.2	90	110	
Cr 52	52	1	He	98.973	3.508	352194	3.87	100	99.0	90	110	
Mn 55	55	1	He	96.825	3.786	250200	4.20	100	96.8	90	110	
Fe 56	56	1	He	4825.736	2.348	15353455	3.03	5100	94.6	90	110	
Co 59	59	1	He	101.190	2.673	503703	3.47	100	101.2	90	110	
Ni 60	60	1	He	100.053	3.276	123352	3.94	100	100.1	90	110	
Cu 63	63	1	He	100.403	3.923	325070	4.46	100	100.4	90	110	
Zn 66	66	1	He	98.189	4.676	57759	4.29	100	98.2	90	110	
As 75	75	1	He	98.331	3.910	41162	3.16	100	98.3	90	110	
Se 78	78	2	H2	95.873	5.357	23285	7.41	100	95.9	90	110	
Sr 88	88	1	He	96.667	4.662	363709	3.94	100	96.7	90	110	
Mo 95	95	1	He	204.350	5.554	363730	4.44	200	102.2	90	110	
Ag 107	107	1	He	50.601	0.943	252221	3.26	50	101.2	90	110	
Cd 111	111	1	He	98.478	2.763	83673	4.13	100	98.5	90	110	
Sn 118	118	1	He	98.672	1.866	235131	3.77	100	98.7	90	110	
Sb 121	121	1	He	49.010	2.076	138748	3.51	50	98.0	90	110	
Ba 137	137	1	He	96.794	1.877	114284	2.97	100	96.8	90	110	
Ce 140	140	1	He	99.615	2.114	1347705	4.00	100	99.6	90	110	
Gd 157	157	1	He	100.372	3.887	276303	4.39	100	100.4	90	110	
Au 197	197	1	He	103.654	3.324	343559	3.79	100	103.7	90	110	
Tl 205	205	1	He	50.592	2.997	391518	3.62	50	101.2	90	110	
Pb206	206	1	He	100.655	2.835	279161	3.34	100	100.7	1	10000	
Pb207	207	1	He	99.911	3.293	237207	3.81	100	99.9	1	10000	
Pb 208	208	1	He	100.383	2.700	1070870	3.17	100	100.4	90	110	
U 238	238	1	He	100.243	2.886	987360	3.32	100	100.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7163636	1.27	7122799	100.57	80	120	
Sc_45	45	2	H2	38717824	7.83	38319065	101.04	80	120	
Ge_72	72	1	He	4008398	1.97	3981131	100.68	80	120	
Ge_72	72	2	H2	12651407	2.04	11928338	106.06	80	120	
In_115	115	1	He	4493032	2.47	4490435	100.06	80	120	
In_115	115	2	H2	11400945	1.74	10423245	109.38	80	120	
Tm_169	169	1	He	4367547	0.66	4215469	103.61	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	221_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:09:34-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.137	-10.3	14	24.7	10	
Be 9	9	2	H2	-0.020	-24.3	3	22.9	1	
Na 23	23	1	He	-85.129	-1.4	24100	2.4	50	>+/-RL
Mg 24	24	1	He	-1.036	-6.4	529	4.0	50	
Al 27	27	1	He	0.037	429.0	431	7.0	50	
P 31	31	1	He	-1.155	-78.9	54	17.0	50	
K 39	39	1	He	-20.039	-15.1	61671	2.0	50	
Ca 40	40	2	H2	-0.266	-458.3	72340	12.4	50	
Ti 47	47	1	He	-0.093	-68.6	14	51.5	5	
V 51	51	1	He	-0.053	-27.2	670	6.8	10	
Cr 52	52	1	He	-0.144	-32.6	3451	5.6	2	
Mn 55	55	1	He	0.018	127.0	261	23.5	1	
Fe 56	56	1	He	0.012	1119.4	5050	8.1	50	
Co 59	59	1	He	0.000	779.2	227	5.2	1	
Ni 60	60	1	He	-0.027	-177.8	501	10.4	2	
Cu 63	63	1	He	-0.088	-22.8	588	10.3	2	
Zn 66	66	1	He	-0.025	-161.6	631	4.7	5	
As 75	75	1	He	-0.240	-6.7	317	1.5	2	
Se 78	78	2	H2	-0.008	-383.9	38	20.6	2	
Sr 88	88	1	He	-0.011	-123.0	241	20.8	5	
Mo 95	95	1	He	0.007	368.9	123	39.8	2	
Ag 107	107	1	He	0.005	59.6	88	17.9	1	
Cd 111	111	1	He	-0.001	-593.7	13	34.6	1	
Sn 118	118	1	He	0.223	7.6	1031	3.6	10	
Sb 121	121	1	He	-0.276	-5.7	331	12.7	2	
Ba 137	137	1	He	0.003	766.6	38	75.0	1	
Ce 140	140	1	He	-0.004	-148.3	130	54.8	5	
Gd 157	157	1	He	-0.006	-59.9	19	51.0	1	
Au 197	197	1	He	-0.058	-55.0	362	30.7	5	
Tl 205	205	1	He	0.003	21.4	217	1.5	1	
Pb206	206	1	He	0.013	228.7	297	28.4	1	
Pb207	207	1	He	0.017	72.6	262	12.3	1	
Pb 208	208	1	He	0.012	158.6	1152	19.5	1	
U 238	238	1	He	-0.002	-226.3	223	24.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6946478	1.18	7122799	97.52	80	120	
Sc_45	45	2	H2	39349132	6.04	38319065	102.69	80	120	
Ge_72	72	1	He	4138461	1.13	3981131	103.95	80	120	
Ge_72	72	2	H2	12890778	1.71	11928338	108.07	80	120	
In_115	115	1	He	4311149	1.41	4490435	96.01	80	120	
In_115	115	2	H2	11438726	1.69	10423245	109.74	80	120	
Tm_169	169	1	He	4419666	1.25	4215469	104.84	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	222_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:13:08-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	105.239	2.110	23025	10.90	100	105.2	90	110	
Be 9	9	2	H2	97.479	3.403	14738	9.57	100	97.5	90	110	
Na 23	23	1	He	5111.976	4.610	3435182	1.84	5100	100.2	90	110	
Mg 24	24	1	He	5109.403	6.064	1842291	2.74	5100	100.2	90	110	
Al 27	27	1	He	4883.986	4.392	853666	1.06	5100	95.8	90	110	
P 31	31	1	He	4756.876	4.007	47841	1.03	5000	95.1	90	110	
K 39	39	1	He	5109.161	2.420	2254904	1.31	5100	100.2	90	110	
Ca 40	40	2	H2	5049.011	6.647	18608076	17.60	5100	99.0	90	110	
Ti 47	47	1	He	195.922	3.953	22626	0.69	200	98.0	90	110	
V 51	51	1	He	103.764	3.519	308374	0.43	100	103.8	90	110	
Cr 52	52	1	He	103.472	3.793	356404	1.16	100	103.5	90	110	
Mn 55	55	1	He	100.637	3.871	251811	0.47	100	100.6	90	110	
Fe 56	56	1	He	5077.963	3.884	15644192	0.50	5100	99.6	90	110	
Co 59	59	1	He	104.520	3.137	503877	0.78	100	104.5	90	110	
Ni 60	60	1	He	104.020	4.862	124131	1.55	100	104.0	90	110	
Cu 63	63	1	He	104.807	4.428	328495	1.05	100	104.8	90	110	
Zn 66	66	1	He	97.673	5.066	59037	1.63	100	97.7	90	110	
As 75	75	1	He	96.068	4.322	41339	1.29	100	96.1	90	110	
Se 78	78	2	H2	101.425	6.536	24105	9.10	100	101.4	90	110	
Sr 88	88	1	He	93.818	4.255	362803	1.09	100	93.8	90	110	
Mo 95	95	1	He	199.175	4.580	364395	1.26	200	99.6	90	110	
Ag 107	107	1	He	51.684	2.710	252727	0.60	50	103.4	90	110	
Cd 111	111	1	He	101.116	2.771	84284	0.80	100	101.1	90	110	
Sn 118	118	1	He	100.519	2.941	234960	0.80	100	100.5	90	110	
Sb 121	121	1	He	50.490	3.714	140180	1.52	50	101.0	90	110	
Ba 137	137	1	He	98.973	2.631	114657	0.70	100	99.0	90	110	
Ce 140	140	1	He	101.184	3.114	1342786	0.91	100	101.2	90	110	
Gd 157	157	1	He	96.887	4.028	276612	0.57	100	96.9	90	110	
Au 197	197	1	He	101.035	4.421	347307	1.00	100	101.0	90	110	
Tl 205	205	1	He	48.798	4.599	391619	1.26	50	97.6	90	110	
Pb206	206	1	He	96.775	4.343	278365	0.86	100	96.8	1	10000	
Pb207	207	1	He	97.306	4.472	239588	1.13	100	97.3	1	10000	
Pb 208	208	1	He	97.377	4.951	1077234	1.52	100	97.4	90	110	
U 238	238	1	He	97.512	5.131	995931	1.73	100	97.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6943599	3.48	7122799	97.48	80	120	
Sc_45	45	2	H2	38687985	11.05	38319065	100.96	80	120	
Ge_72	72	1	He	4122271	3.47	3981131	103.55	80	120	
Ge_72	72	2	H2	12380018	3.78	11928338	103.79	80	120	
In_115	115	1	He	4410022	2.18	4490435	98.21	80	120	
In_115	115	2	H2	11370713	3.26	10423245	109.09	80	120	
Tm_169	169	1	He	4534578	3.55	4215469	107.57	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	223_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:16:36-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.124	-11.5	17	13.8	10	
Be 9	9	2	H2	-0.026	-41.4	3	72.1	1	
Na 23	23	1	He	-84.018	-0.6	24224	1.5	50	>+/-RL
Mg 24	24	1	He	-0.723	-38.6	627	16.8	50	
Al 27	27	1	He	0.266	78.7	459	8.8	50	
P 31	31	1	He	0.951	32.6	73	4.2	50	
K 39	39	1	He	-14.547	-15.6	62451	1.7	50	
Ca 40	40	2	H2	-1.046	-117.1	70852	12.0	50	
Ti 47	47	1	He	-0.102	-54.0	13	48.2	5	
V 51	51	1	He	-0.031	-55.1	717	7.1	10	
Cr 52	52	1	He	-0.104	-17.0	3498	2.7	2	
Mn 55	55	1	He	0.032	24.1	287	7.5	1	
Fe 56	56	1	He	0.092	182.9	5170	10.8	50	
Co 59	59	1	He	0.007	33.1	253	3.7	1	
Ni 60	60	1	He	0.014	133.9	537	3.9	2	
Cu 63	63	1	He	-0.087	-10.3	578	5.4	2	
Zn 66	66	1	He	0.069	83.7	661	5.4	5	
As 75	75	1	He	-0.201	-9.6	320	0.8	2	
Se 78	78	2	H2	-0.011	-220.4	36	15.9	2	
Sr 88	88	1	He	-0.006	-111.2	250	11.3	5	
Mo 95	95	1	He	0.026	42.8	151	13.5	2	
Ag 107	107	1	He	0.001	111.2	68	12.4	1	
Cd 111	111	1	He	-0.005	-198.0	10	80.0	1	
Sn 118	118	1	He	0.262	5.2	1112	5.2	10	
Sb 121	121	1	He	-0.272	-4.1	338	10.4	2	
Ba 137	137	1	He	0.000	6565.4	34	68.0	1	
Ce 140	140	1	He	-0.003	-66.3	134	22.2	5	
Gd 157	157	1	He	-0.003	-200.8	27	54.5	1	
Au 197	197	1	He	-0.054	-55.6	363	27.1	5	
Tl 205	205	1	He	0.006	110.3	227	20.6	1	
Pb206	206	1	He	0.019	62.6	303	11.4	1	
Pb207	207	1	He	0.029	94.1	281	21.9	1	
Pb 208	208	1	He	0.018	19.1	1174	3.7	1	
U 238	238	1	He	-0.003	-124.5	208	17.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6775862	1.00	7122799	95.13	80	120	
Sc_45	45	2	H2	40159415	5.43	38319065	104.80	80	120	
Ge_72	72	1	He	3979124	1.68	3981131	99.95	80	120	
Ge_72	72	2	H2	12586094	0.81	11928338	105.51	80	120	
In_115	115	1	He	4276018	3.06	4490435	95.23	80	120	
In_115	115	2	H2	11621462	1.22	10423245	111.50	80	120	
Tm_169	169	1	He	4279998	1.25	4215469	101.53	80	120	

Sample Report

Sample Table

Sample Name	PDS 320-22742-A-1-A
Data File Name	224SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:20:13-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	384.727	384.727	3.80	78444	7.73		2000	2000	
Be 9	9	2	H2	361.902	361.902	4.18	51108	8.20		2000	2000	
B 11	11	2	H2	1954.340	1954.340	6.28	251612	10.18		10000	10000	
Na 23	23	1	He	1949.860	1949.860	1.17	1136213	3.06		100000	100000	
Mg 24	24	1	He	1925.336	1925.336	1.08	580820	3.07		100000	100000	
Al 27	27	1	He	2125.141	2125.141	2.29	310650	4.21		100000	100000	
P 31	31	1	He	1834.871	1834.871	2.46	15456	4.39		100000	100000	
K 39	39	1	He	1909.785	1909.785	1.21	740724	3.10		100000	100000	
Ca 40	40	2	H2	1986.222	1986.222	8.72	6848591	12.65		100000	100000	
Ti 47	47	1	He	398.255	398.255	1.05	38405	2.44		2000	2000	
V 51	51	1	He	411.442	411.442	1.84	1019618	3.70		2000	2000	
Cr 52	52	1	He	416.993	416.993	2.42	1190282	4.37		2000	2000	
Mn 55	55	1	He	396.503	396.503	1.36	828473	3.32		22000	22000	
Fe 56	56	1	He	2092.548	2092.548	2.24	5389937	4.21		100000	100000	
Co 59	59	1	He	440.127	440.127	1.72	1771804	2.96		2000	2000	
Ni 60	60	1	He	421.240	421.240	1.69	418783	3.63		2000	2000	
Cu 63	63	1	He	435.231	435.231	1.35	1137735	3.34		2000	2000	
Zn 66	66	1	He	419.450	419.450	3.99	212782	3.71		2000	2000	
As 75	75	1	He	357.587	357.587	4.63	129222	3.73		2000	2000	
Se 78	78	2	H2	313.863	313.863	2.46	69787	5.64		2000	2000	
Sr 88	88	1	He	374.249	374.249	4.79	1223685	3.83		2000	2000	
Mo 95	95	1	He	408.324	408.324	4.41	631976	3.44		2000	2000	
Ag 107	107	1	He	106.171	106.171	5.52	435757	2.79		500	500	
Cd 111	111	1	He	391.316	391.316	5.77	273794	3.61		2000	2000	
Sn 118	118	1	He	415.345	415.345	6.68	813443	3.99		2000	2000	
Sb 121	121	1	He	410.949	410.949	5.93	951239	3.10		2000	2000	
Ba 137	137	1	He	400.306	400.306	5.83	389231	3.81		2000	2000	
Ce 140	140	1	He	417.906	417.906	7.55	4652504	3.87		2000	2000	
Gd 157	157	1	He	392.796	392.796	3.84	931590	3.44		2000	2000	
Au 197	197	1	He	393.778	393.778	3.46	1123324	3.10		2000	2000	
Tl 205	205	1	He	99.848	99.848	3.16	665730	3.34		500	500	
Pb206	206	1	He	389.568	389.568	4.01	930358	3.63		12000	12000	
Pb207	207	1	He	398.485	398.485	4.32	814629	3.92		12000	12000	
Pb 208	208	1	He	401.558	401.558	3.89	3688635	3.48		12000	12000	
U 238	238	1	He	408.459	408.459	3.84	3465965	3.27		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5795760	2.00	7122799	81.37	80	120	
Sc_45	45	2	H2	36062333	3.98	38319065	94.11	80	120	
Ge_72	72	1	He	3485598	2.03	3981131	87.55	80	120	
Ge_72	72	2	H2	11598098	3.18	11928338	97.23	80	120	
In_115	115	1	He	3705121	3.74	4490435	82.51	80	120	
In_115	115	2	H2	10214628	2.86	10423245	98.00	80	120	
Tm_169	169	1	He	3764344	1.39	4215469	89.30	80	120	

Sample Table

Sample Name	320-22742-A-2-A
Data File Name	225SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:23:41-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.011	-0.011	-143.85	39	5.95		2000	2000	
Be 9	9	2	H2	-0.011	-0.011	-65.85	4	17.63		2000	2000	
B 11	11	2	H2	50.928	50.928	1.20	9178	8.20		10000	10000	
Na 23	23	1	He	-39.187	-39.187	-5.19	46403	3.08		100000	100000	
Mg 24	24	1	He	8.760	8.760	8.84	3475	7.37		100000	100000	
Al 27	27	1	He	8.945	8.945	5.18	1700	5.01		100000	100000	
P 31	31	1	He	12.104	12.104	16.42	160	10.00		100000	100000	
K 39	39	1	He	35.627	35.627	7.45	73059	1.76		100000	100000	
Ca 40	40	2	H2	17.539	17.539	11.71	127186	13.40		100000	100000	
Ti 47	47	1	He	0.055	0.055	107.85	27	22.91		2000	2000	
V 51	51	1	He	-0.010	-0.010	-95.20	683	4.21		2000	2000	
Cr 52	52	1	He	0.755	0.755	9.62	5568	4.71		2000	2000	
Mn 55	55	1	He	0.287	0.287	15.86	798	12.42		22000	22000	
Fe 56	56	1	He	11.611	11.611	4.60	34888	4.90		100000	100000	
Co 59	59	1	He	0.188	0.188	6.62	966	6.32		2000	2000	
Ni 60	60	1	He	0.075	0.075	85.12	533	12.70		2000	2000	
Cu 63	63	1	He	5.780	5.780	4.64	16204	5.18		2000	2000	
Zn 66	66	1	He	49.008	49.008	5.45	25784	4.61		2000	2000	
As 75	75	1	He	-0.033	-0.033	-304.04	347	8.77		2000	2000	
Se 78	78	2	H2	0.064	0.064	40.49	50	8.03		2000	2000	
Sr 88	88	1	He	0.101	0.101	29.69	576	15.80		2000	2000	
Mo 95	95	1	He	1.083	1.083	13.37	1800	12.11		2000	2000	
Ag 107	107	1	He	0.010	0.010	65.49	92	27.61		500	500	
Cd 111	111	1	He	7.588	7.588	2.52	5289	1.93		2000	2000	
Sn 118	118	1	He	7.858	7.858	7.53	15736	6.68		2000	2000	
Sb 121	121	1	He	-0.258	-0.258	-5.58	323	10.86		2000	2000	
Ba 137	137	1	He	0.456	0.456	9.43	470	8.36		2000	2000	
Ce 140	140	1	He	0.004	0.004	140.06	199	34.03		2000	2000	
Gd 157	157	1	He	-0.001	-0.001	-434.25	28	49.95		2000	2000	
Au 197	197	1	He	0.072	0.072	84.06	699	25.83		2000	2000	
Tl 205	205	1	He	0.030	0.030	19.88	374	10.43		500	500	
Pb206	206	1	He	0.190	0.190	12.92	696	9.35		12000	12000	
Pb207	207	1	He	0.219	0.219	9.75	654	6.41		12000	12000	
Pb 208	208	1	He	0.201	0.201	2.65	2790	1.55		12000	12000	
U 238	238	1	He	0.014	0.014	114.36	337	41.17		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5935683	1.00	7122799	83.33	80	120	
Sc_45	45	2	H2	36073327	7.86	38319065	94.14	80	120	
Ge_72	72	1	He	3547098	2.29	3981131	89.10	80	120	
Ge_72	72	2	H2	11654358	4.20	11928338	97.70	80	120	
In_115	115	1	He	3679055	0.67	4490435	81.93	80	120	
In_115	115	2	H2	10413690	2.31	10423245	99.91	80	120	
Tm_169	169	1	He	3877167	0.87	4215469	91.97	80	120	

Sample Report

Sample Table

Sample Name	320-22742-A-3-A
Data File Name	226SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:27:16-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.036	-0.036	-87.68	34	21.91		2000	2000	
Be 9	9	2	H2	-0.017	-0.017	-36.04	4	31.49		2000	2000	
B 11	11	2	H2	40.849	40.849	3.90	8089	7.52		10000	10000	
Na 23	23	1	He	-66.843	-66.843	-3.29	30974	0.79		100000	100000	
Mg 24	24	1	He	12.235	12.235	7.36	4560	2.98		100000	100000	
Al 27	27	1	He	11.309	11.309	7.49	2059	3.48		100000	100000	
P 31	31	1	He	15.410	15.410	11.90	189	8.98		100000	100000	
K 39	39	1	He	11.457	11.457	52.39	64450	0.42		100000	100000	
Ca 40	40	2	H2	16.719	16.719	15.15	127585	14.79		100000	100000	
Ti 47	47	1	He	0.140	0.140	58.49	35	26.75		2000	2000	
V 51	51	1	He	-0.043	-0.043	-13.72	601	2.03		2000	2000	
Cr 52	52	1	He	0.470	0.470	21.34	4752	3.07		2000	2000	
Mn 55	55	1	He	0.258	0.258	16.21	737	9.41		22000	22000	
Fe 56	56	1	He	14.968	14.968	7.94	43847	4.02		100000	100000	
Co 59	59	1	He	0.356	0.356	4.83	1667	1.68		2000	2000	
Ni 60	60	1	He	0.070	0.070	77.61	528	7.91		2000	2000	
Cu 63	63	1	He	3.990	3.990	8.84	11441	4.99		2000	2000	
Zn 66	66	1	He	28.825	28.825	7.56	15302	4.44		2000	2000	
As 75	75	1	He	-0.204	-0.204	-17.09	283	7.48		2000	2000	
Se 78	78	2	H2	0.001	0.001	1413.41	36	9.01		2000	2000	
Sr 88	88	1	He	0.069	0.069	18.08	467	5.81		2000	2000	
Mo 95	95	1	He	0.658	0.658	13.38	1123	10.02		2000	2000	
Ag 107	107	1	He	0.002	0.002	93.53	64	11.94		500	500	
Cd 111	111	1	He	2.667	2.667	0.92	1942	2.80		2000	2000	
Sn 118	118	1	He	7.491	7.491	3.75	15626	2.30		2000	2000	
Sb 121	121	1	He	-0.252	-0.252	-36.32	349	59.95		2000	2000	
Ba 137	137	1	He	0.951	0.951	7.43	986	5.12		2000	2000	
Ce 140	140	1	He	-0.009	-0.009	-24.87	51	48.95		2000	2000	
Gd 157	157	1	He	-0.011	-0.011	-7.79	4	43.40		2000	2000	
Au 197	197	1	He	-0.122	-0.122	-5.40	128	15.72		2000	2000	
Tl 205	205	1	He	-0.010	-0.010	-29.70	94	23.50		500	500	
Pb206	206	1	He	0.135	0.135	16.14	558	7.47		12000	12000	
Pb207	207	1	He	0.124	0.124	14.37	451	5.60		12000	12000	
Pb 208	208	1	He	0.125	0.125	10.94	2060	3.37		12000	12000	
U 238	238	1	He	-0.016	-0.016	-23.43	77	39.13		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5961712	3.45	7122799	83.70	80	120	
Sc_45	45	2	H2	36973952	7.77	38319065	96.49	80	120	
Ge_72	72	1	He	3529692	3.13	3981131	88.66	80	120	
Ge_72	72	2	H2	11416245	5.84	11928338	95.71	80	120	
In_115	115	1	He	3827283	2.01	4490435	85.23	80	120	
In_115	115	2	H2	10356063	5.36	10423245	99.36	80	120	
Tm_169	169	1	He	3857311	3.01	4215469	91.50	80	120	

Sample Table

Sample Name	320-22742-A-4-A
Data File Name	227SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:30:52-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.039	-0.039	-81.73	32	16.72		2000	2000	
Be 9	9	2	H2	-0.002	-0.002	-2359.20	5	132.10		2000	2000	
B 11	11	2	H2	41.769	41.769	4.37	7717	7.90		10000	10000	
Na 23	23	1	He	8.047	8.047	45.78	74465	1.59		100000	100000	
Mg 24	24	1	He	2.764	2.764	3.04	1659	3.15		100000	100000	
Al 27	27	1	He	2.680	2.680	3.97	779	2.07		100000	100000	
P 31	31	1	He	12.612	12.612	10.31	168	7.43		100000	100000	
K 39	39	1	He	11.874	11.874	32.77	65732	0.79		100000	100000	
Ca 40	40	2	H2	16.960	16.960	10.08	120356	10.18		100000	100000	
Ti 47	47	1	He	0.017	0.017	169.64	23	13.09		2000	2000	
V 51	51	1	He	-0.021	-0.021	-38.18	669	4.64		2000	2000	
Cr 52	52	1	He	0.302	0.302	10.41	4337	0.95		2000	2000	
Mn 55	55	1	He	0.033	0.033	22.33	261	7.76		22000	22000	
Fe 56	56	1	He	2.452	2.452	3.90	10973	1.79		100000	100000	
Co 59	59	1	He	0.866	0.866	3.79	3842	2.86		2000	2000	
Ni 60	60	1	He	-0.252	-0.252	-10.79	204	13.83		2000	2000	
Cu 63	63	1	He	1.750	1.750	3.77	5532	1.83		2000	2000	
Zn 66	66	1	He	119.373	119.373	3.20	61289	3.42		2000	2000	
As 75	75	1	He	-0.163	-0.163	-28.10	296	5.20		2000	2000	
Se 78	78	2	H2	0.014	0.014	821.75	38	63.74		2000	2000	
Sr 88	88	1	He	0.050	0.050	37.64	403	14.79		2000	2000	
Mo 95	95	1	He	-0.001	-0.001	-2481.30	92	24.06		2000	2000	
Ag 107	107	1	He	0.001	0.001	223.75	60	24.22		500	500	
Cd 111	111	1	He	-0.003	-0.003	-318.55	10	69.28		2000	2000	
Sn 118	118	1	He	6.245	6.245	4.49	12839	3.12		2000	2000	
Sb 121	121	1	He	-0.295	-0.295	-3.70	243	11.21		2000	2000	
Ba 137	137	1	He	0.708	0.708	11.70	727	10.79		2000	2000	
Ce 140	140	1	He	-0.010	-0.010	-9.05	37	27.27		2000	2000	
Gd 157	157	1	He	-0.013	-0.013	0.00	0	#DIV/0!		2000	2000	
Au 197	197	1	He	-0.129	-0.129	-4.97	107	18.75		2000	2000	
Tl 205	205	1	He	-0.013	-0.013	-14.39	78	17.32		500	500	
Pb206	206	1	He	0.261	0.261	4.36	853	4.74		12000	12000	
Pb207	207	1	He	0.316	0.316	17.17	839	11.82		12000	12000	
Pb 208	208	1	He	0.289	0.289	3.29	3549	1.14		12000	12000	
U 238	238	1	He	-0.020	-0.020	-6.51	41	28.47		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6062531	1.54	7122799	85.11	80	120	
Sc_45	45	2	H2	34714910	5.42	38319065	90.59	80	120	
Ge_72	72	1	He	3504374	0.74	3981131	88.02	80	120	
Ge_72	72	2	H2	11164067	3.42	11928338	93.59	80	120	
In_115	115	1	He	3750097	1.63	4490435	83.51	80	120	
In_115	115	2	H2	10184799	1.65	10423245	97.71	80	120	
Tm_169	169	1	He	3794230	1.54	4215469	90.01	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	228_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:34:27-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	105.373	3.043	23483	5.91	100	105.4	90	110	
Be 9	9	2	H2	97.784	3.753	15076	6.43	100	97.8	90	110	
Na 23	23	1	He	5251.202	4.452	3495500	4.15	5100	103.0	90	110	
Mg 24	24	1	He	5269.883	4.691	1884408	4.83	5100	103.3	90	110	
Al 27	27	1	He	4997.789	2.544	866078	3.36	5100	98.0	90	110	
P 31	31	1	He	4866.470	2.460	48522	3.62	5000	97.3	90	110	
K 39	39	1	He	5151.596	1.235	2252961	3.54	5100	101.0	90	110	
Ca 40	40	2	H2	5049.011	8.833	18886492	11.77	5100	99.0	90	110	
Ti 47	47	1	He	202.174	3.823	23147	4.58	200	101.1	90	110	
V 51	51	1	He	104.713	2.903	308479	3.81	100	104.7	90	110	
Cr 52	52	1	He	104.853	2.964	357930	3.41	100	104.9	90	110	
Mn 55	55	1	He	101.928	2.530	252861	3.88	100	101.9	90	110	
Fe 56	56	1	He	5131.719	3.778	15673755	4.55	5100	100.6	90	110	
Co 59	59	1	He	106.087	2.064	506918	3.17	100	106.1	90	110	
Ni 60	60	1	He	105.653	2.609	125026	4.05	100	105.7	90	110	
Cu 63	63	1	He	107.155	2.638	332957	3.30	100	107.2	90	110	
Zn 66	66	1	He	99.208	3.762	58802	3.62	100	99.2	90	110	
As 75	75	1	He	98.722	4.708	41643	4.39	100	98.7	90	110	
Se 78	78	2	H2	99.831	4.503	24481	4.30	100	99.8	90	110	
Sr 88	88	1	He	96.940	4.879	367537	4.33	100	96.9	90	110	
Mo 95	95	1	He	204.803	4.622	367412	4.21	200	102.4	90	110	
Ag 107	107	1	He	52.557	1.181	254363	2.84	50	105.1	90	110	
Cd 111	111	1	He	102.036	1.446	84188	3.48	100	102.0	90	110	
Sn 118	118	1	He	101.770	2.300	235432	3.20	100	101.8	90	110	
Sb 121	121	1	He	51.055	2.533	140295	3.34	50	102.1	90	110	
Ba 137	137	1	He	100.918	0.802	115734	3.71	100	100.9	90	110	
Ce 140	140	1	He	104.083	1.421	1367358	3.53	100	104.1	90	110	
Gd 157	157	1	He	100.847	2.583	278703	3.24	100	100.8	90	110	
Au 197	197	1	He	103.527	2.302	344519	3.27	100	103.5	90	110	
Tl 205	205	1	He	50.153	2.757	389668	3.53	50	100.3	90	110	
Pb206	206	1	He	100.437	2.352	279665	3.06	100	100.4	1	10000	
Pb207	207	1	He	100.729	2.715	240078	3.04	100	100.7	1	10000	
Pb 208	208	1	He	100.711	2.725	1078624	3.25	100	100.7	90	110	
U 238	238	1	He	101.208	2.813	1000924	3.77	100	101.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6877375	2.37	7122799	96.55	80	120	
Sc_45	45	2	H2	39378152	2.97	38319065	102.76	80	120	
Ge_72	72	1	He	4038579	0.97	3981131	101.44	80	120	
Ge_72	72	2	H2	12784929	0.79	11928338	107.18	80	120	
In_115	115	1	He	4363385	2.94	4490435	97.17	80	120	
In_115	115	2	H2	11427395	1.64	10423245	109.63	80	120	
Tm_169	169	1	He	4385147	1.73	4215469	104.03	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	229_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:37:54-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.098	-49.3	22	42.9	10	
Be 9	9	2	H2	-0.033	-30.9	2	115.5	1	
Na 23	23	1	He	-89.932	-0.8	20438	1.0	50	>+/-RL
Mg 24	24	1	He	-1.358	-4.1	403	4.1	50	
Al 27	27	1	He	-0.278	-43.8	367	7.4	50	
P 31	31	1	He	-1.106	-139.8	53	30.3	50	
K 39	39	1	He	-11.973	-13.8	63550	1.5	50	
Ca 40	40	2	H2	-11.991	-1.6	28417	8.8	50	
Ti 47	47	1	He	-0.114	-24.7	11	27.0	5	
V 51	51	1	He	-0.062	-5.0	629	2.3	10	
Cr 52	52	1	He	-0.172	-24.0	3271	3.5	2	
Mn 55	55	1	He	-0.030	-30.3	138	17.6	1	
Fe 56	56	1	He	-0.132	-33.6	4495	3.5	50	
Co 59	59	1	He	-0.035	-8.4	53	28.5	1	
Ni 60	60	1	He	-0.414	-1.9	40	21.8	2	
Cu 63	63	1	He	-0.172	-11.2	318	17.6	2	
Zn 66	66	1	He	-0.853	-5.9	130	22.3	5	
As 75	75	1	He	-0.216	-49.6	317	15.2	2	
Se 78	78	2	H2	-0.015	-212.8	35	25.5	2	
Sr 88	88	1	He	-0.022	-22.8	191	8.9	5	
Mo 95	95	1	He	-0.016	-55.7	78	21.6	2	
Ag 107	107	1	He	0.005	64.0	88	20.9	1	
Cd 111	111	1	He	-0.007	-81.5	9	53.3	1	
Sn 118	118	1	He	0.255	10.2	1108	2.5	10	
Sb 121	121	1	He	-0.280	-0.1	320	2.8	2	
Ba 137	137	1	He	-0.013	-43.7	20	33.4	1	
Ce 140	140	1	He	-0.005	-29.8	106	22.4	5	
Gd 157	157	1	He	-0.005	-20.5	20	16.7	1	
Au 197	197	1	He	-0.056	-27.7	360	12.2	5	
Tl 205	205	1	He	-0.004	-114.7	160	18.5	1	
Pb206	206	1	He	0.013	32.4	292	2.6	1	
Pb207	207	1	He	0.046	22.0	326	6.3	1	
Pb 208	208	1	He	0.028	22.5	1296	3.0	1	
U 238	238	1	He	-0.004	-107.8	207	18.3	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6778827	1.78	7122799	95.17	80	120	
Sc_45	45	2	H2	39122685	8.39	38319065	102.10	80	120	
Ge_72	72	1	He	4007202	1.07	3981131	100.65	80	120	
Ge_72	72	2	H2	12490613	3.50	11928338	104.71	80	120	
In_115	115	1	He	4331810	2.79	4490435	96.47	80	120	
In_115	115	2	H2	11293151	2.63	10423245	108.35	80	120	
Tm_169	169	1	He	4363824	2.12	4215469	103.52	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	230_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:41:28-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	102.325	3.036	23245	8.23	100	102.3	90	110	
Be 9	9	2	H2	95.623	3.272	15031	8.79	100	95.6	90	110	
Na 23	23	1	He	5198.092	4.828	3442455	3.28	5100	101.9	90	110	
Mg 24	24	1	He	5054.612	4.713	1797886	3.84	5100	99.1	90	110	
Al 27	27	1	He	4960.606	4.090	854957	2.88	5100	97.3	90	110	
P 31	31	1	He	4822.044	2.698	47819	1.31	5000	96.4	90	110	
K 39	39	1	He	5044.706	4.915	2194932	3.29	5100	98.9	90	110	
Ca 40	40	2	H2	4960.275	8.304	18929751	13.72	5100	97.3	90	110	
Ti 47	47	1	He	202.569	4.314	23063	2.88	200	101.3	90	110	
V 51	51	1	He	105.328	4.098	308561	2.57	100	105.3	90	110	
Cr 52	52	1	He	105.024	3.657	356575	2.10	100	105.0	90	110	
Mn 55	55	1	He	102.222	3.005	252197	1.75	100	102.2	90	110	
Fe 56	56	1	He	5110.500	3.621	15522837	2.11	5100	100.2	90	110	
Co 59	59	1	He	107.022	3.070	508603	1.55	100	107.0	90	110	
Ni 60	60	1	He	105.617	3.835	124279	2.32	100	105.6	90	110	
Cu 63	63	1	He	106.302	3.908	328512	2.39	100	106.3	90	110	
Zn 66	66	1	He	99.883	4.055	59257	2.34	100	99.9	90	110	
As 75	75	1	He	97.590	3.354	41216	1.52	100	97.6	90	110	
Se 78	78	2	H2	99.867	5.711	24392	7.56	100	99.9	90	110	
Sr 88	88	1	He	97.033	4.947	368261	3.17	100	97.0	90	110	
Mo 95	95	1	He	203.652	3.181	365775	1.35	200	101.8	90	110	
Ag 107	107	1	He	52.711	4.202	254257	1.94	50	105.4	90	110	
Cd 111	111	1	He	103.673	4.596	85239	2.43	100	103.7	90	110	
Sn 118	118	1	He	102.571	4.694	236485	2.39	100	102.6	90	110	
Sb 121	121	1	He	51.630	4.590	141390	2.37	50	103.3	90	110	
Ba 137	137	1	He	101.162	5.207	115583	2.93	100	101.2	90	110	
Ce 140	140	1	He	105.149	4.414	1376533	2.19	100	105.1	90	110	
Gd 157	157	1	He	100.510	4.411	279115	2.18	100	100.5	90	110	
Au 197	197	1	He	102.877	5.721	343915	3.25	100	102.9	90	110	
Tl 205	205	1	He	49.985	5.502	390149	3.09	50	100.0	90	110	
Pb206	206	1	He	99.533	4.718	278472	2.32	100	99.5	1	10000	
Pb207	207	1	He	100.187	5.246	239920	2.88	100	100.2	1	10000	
Pb 208	208	1	He	100.042	4.725	1076599	2.35	100	100.0	90	110	
U 238	238	1	He	99.927	5.266	992792	2.88	100	99.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6842277	1.56	7122799	96.06	80	120	
Sc_45	45	2	H2	40127124	5.81	38319065	104.72	80	120	
Ge_72	72	1	He	4044271	1.86	3981131	101.59	80	120	
Ge_72	72	2	H2	12724381	2.41	11928338	106.67	80	120	
In_115	115	1	He	4351407	2.35	4490435	96.90	80	120	
In_115	115	2	H2	11532245	0.72	10423245	110.64	80	120	
Tm_169	169	1	He	4409573	2.46	4215469	104.60	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	231_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:44:55-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.089	-26.6	24	15.0	10	
Be 9	9	2	H2	-0.020	-80.3	3	82.6	1	
Na 23	23	1	He	-88.946	-0.4	20916	1.1	50	>+/-RL
Mg 24	24	1	He	-0.978	-15.4	533	10.0	50	
Al 27	27	1	He	0.306	116.5	463	13.2	50	
P 31	31	1	He	-1.391	-53.7	50	14.4	50	
K 39	39	1	He	-9.698	-23.5	64023	1.8	50	
Ca 40	40	2	H2	-11.756	-2.1	29008	9.7	50	
Ti 47	47	1	He	-0.083	-44.8	15	28.4	5	
V 51	51	1	He	-0.058	-18.0	635	4.6	10	
Cr 52	52	1	He	-0.117	-7.3	3430	0.5	2	
Mn 55	55	1	He	-0.028	-37.4	141	17.9	1	
Fe 56	56	1	He	0.255	111.0	5619	15.3	50	
Co 59	59	1	He	-0.028	-19.1	87	29.0	1	
Ni 60	60	1	He	-0.408	-3.4	47	34.4	2	
Cu 63	63	1	He	-0.181	-5.1	288	9.2	2	
Zn 66	66	1	He	-0.782	-5.6	171	13.9	5	
As 75	75	1	He	-0.146	-25.3	346	3.9	2	
Se 78	78	2	H2	-0.021	-112.1	33	18.2	2	
Sr 88	88	1	He	-0.018	-15.8	208	4.2	5	
Mo 95	95	1	He	0.007	244.2	119	24.2	2	
Ag 107	107	1	He	0.003	190.4	78	31.6	1	
Cd 111	111	1	He	-0.007	-49.7	9	35.3	1	
Sn 118	118	1	He	0.247	20.4	1140	10.4	10	
Sb 121	121	1	He	-0.284	-3.3	326	8.3	2	
Ba 137	137	1	He	-0.006	-265.8	29	63.6	1	
Ce 140	140	1	He	0.000	-4680.8	183	32.8	5	
Gd 157	157	1	He	0.000	-4578.8	34	84.5	1	
Au 197	197	1	He	-0.060	-33.2	352	18.2	5	
Tl 205	205	1	He	0.004	118.3	222	16.0	1	
Pb206	206	1	He	0.011	41.8	292	3.5	1	
Pb207	207	1	He	0.010	112.2	243	9.6	1	
Pb 208	208	1	He	0.010	104.1	1123	8.9	1	
U 238	238	1	He	0.000	-3795.1	243	27.3	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6728001	0.42	7122799	94.46	80	120	
Sc_45	45	2	H2	38701652	6.67	38319065	101.00	80	120	
Ge_72	72	1	He	4012026	1.53	3981131	100.78	80	120	
Ge_72	72	2	H2	12218252	1.13	11928338	102.43	80	120	
In_115	115	1	He	4522127	0.30	4490435	100.71	80	120	
In_115	115	2	H2	11117487	3.48	10423245	106.66	80	120	
Tm_169	169	1	He	4418074	1.11	4215469	104.81	80	120	

Sample Report

Sample Table

Sample Name	320-22742-A-5-A
Data File Name	232SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:48:29-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.058	-0.058	-32.63	28	17.91		2000	2000	
Be 9	9	2	H2	-0.032	-0.032	-14.97	1	43.30		2000	2000	
B 11	11	2	H2	71.319	71.319	8.25	11152	13.84		10000	10000	
Na 23	23	1	He	152.011	152.011	3.38	153537	0.96		100000	100000	
Mg 24	24	1	He	64.896	64.896	3.83	20757	2.68		100000	100000	
Al 27	27	1	He	26.147	26.147	4.04	4265	3.87		100000	100000	
P 31	31	1	He	15.077	15.077	18.50	185	12.78		100000	100000	
K 39	39	1	He	33.581	33.581	11.75	72195	0.93		100000	100000	
Ca 40	40	2	H2	255.011	255.011	16.04	890565	22.49		100000	100000	
Ti 47	47	1	He	0.401	0.401	29.53	61	18.75		2000	2000	
V 51	51	1	He	1.598	1.598	3.84	4752	3.41		2000	2000	
Cr 52	52	1	He	2.423	2.423	2.98	10411	1.67		2000	2000	
Mn 55	55	1	He	8.710	8.710	1.56	18786	0.81		22000	22000	
Fe 56	56	1	He	60.719	60.719	2.41	164021	1.24		100000	100000	
Co 59	59	1	He	0.306	0.306	5.17	1451	3.64		2000	2000	
Ni 60	60	1	He	0.997	0.997	3.71	1467	3.29		2000	2000	
Cu 63	63	1	He	25.218	25.218	2.82	68086	1.77		2000	2000	
Zn 66	66	1	He	83.239	83.239	4.44	42626	3.16		2000	2000	
As 75	75	1	He	4.358	4.358	2.16	1923	2.08		2000	2000	
Se 78	78	2	H2	0.948	0.948	7.47	233	8.85		2000	2000	
Sr 88	88	1	He	0.781	0.781	0.64	2789	1.52		2000	2000	
Mo 95	95	1	He	0.882	0.882	4.20	1457	4.05		2000	2000	
Ag 107	107	1	He	0.181	0.181	3.96	829	6.04		500	500	
Cd 111	111	1	He	0.019	0.019	75.25	27	41.31		2000	2000	
Sn 118	118	1	He	7.489	7.489	1.86	15709	0.99		2000	2000	
Sb 121	121	1	He	-0.099	-0.099	-18.86	720	4.46		2000	2000	
Ba 137	137	1	He	8.203	8.203	3.66	8320	2.72		2000	2000	
Ce 140	140	1	He	0.017	0.017	22.68	351	10.67		2000	2000	
Gd 157	157	1	He	-0.009	-0.009	-31.74	9	78.08		2000	2000	
Au 197	197	1	He	0.009	0.009	86.25	508	3.85		2000	2000	
Tl 205	205	1	He	-0.008	-0.008	-66.20	111	30.35		500	500	
Pb206	206	1	He	3.347	3.347	1.00	8384	2.45		12000	12000	
Pb207	207	1	He	3.273	3.273	2.83	7019	1.06		12000	12000	
Pb 208	208	1	He	3.346	3.346	2.83	32247	1.08		12000	12000	
U 238	238	1	He	0.000	0.000	-1054.20	210	16.72		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5927117	1.10	7122799	83.21	80	120	
Sc_45	45	2	H2	34077833	7.92	38319065	88.93	80	120	
Ge_72	72	1	He	3483128	1.27	3981131	87.49	80	120	
Ge_72	72	2	H2	10933710	2.68	11928338	91.66	80	120	
In_115	115	1	He	3848307	2.64	4490435	85.70	80	120	
In_115	115	2	H2	9784760	0.77	10423245	93.87	80	120	
Tm_169	169	1	He	3842337	1.71	4215469	91.15	80	120	

Sample Report

Sample Table

Sample Name	320-22742-A-5-B DU
Data File Name	233SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:52:04-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.072	-0.072	-41.79	26	30.13		2000	2000	
Be 9	9	2	H2	-0.032	-0.032	-18.25	1	57.28		2000	2000	
B 11	11	2	H2	70.096	70.096	3.07	11380	9.23		10000	10000	
Na 23	23	1	He	157.973	157.973	8.35	143314	8.90		100000	100000	
Mg 24	24	1	He	65.696	65.696	5.04	19205	10.22		100000	100000	
Al 27	27	1	He	28.414	28.414	8.17	4194	5.92		100000	100000	
P 31	31	1	He	18.550	18.550	11.61	199	20.44		100000	100000	
K 39	39	1	He	52.759	52.759	48.47	71898	2.25		100000	100000	
Ca 40	40	2	H2	268.854	268.854	9.60	966157	15.87		100000	100000	
Ti 47	47	1	He	0.445	0.445	55.63	58	27.37		2000	2000	
V 51	51	1	He	1.631	1.631	7.18	4421	10.77		2000	2000	
Cr 52	52	1	He	2.361	2.361	7.91	9341	8.43		2000	2000	
Mn 55	55	1	He	8.806	8.806	5.55	17343	8.80		22000	22000	
Fe 56	56	1	He	61.416	61.416	5.08	151569	9.60		100000	100000	
Co 59	59	1	He	0.328	0.328	10.03	1402	4.80		2000	2000	
Ni 60	60	1	He	0.997	0.997	7.91	1340	8.94		2000	2000	
Cu 63	63	1	He	25.842	25.842	4.64	63736	9.12		2000	2000	
Zn 66	66	1	He	84.229	84.229	4.22	39524	9.04		2000	2000	
As 75	75	1	He	4.251	4.251	7.45	1728	11.59		2000	2000	
Se 78	78	2	H2	0.986	0.986	11.77	247	12.11		2000	2000	
Sr 88	88	1	He	0.787	0.787	4.55	2572	7.40		2000	2000	
Mo 95	95	1	He	0.867	0.867	9.12	1317	15.03		2000	2000	
Ag 107	107	1	He	0.178	0.178	9.70	740	14.16		500	500	
Cd 111	111	1	He	0.016	0.016	38.15	22	9.09		2000	2000	
Sn 118	118	1	He	8.252	8.252	9.72	15592	2.55		2000	2000	
Sb 121	121	1	He	0.016	0.016	1060.48	883	30.81		2000	2000	
Ba 137	137	1	He	8.099	8.099	5.35	7471	12.28		2000	2000	
Ce 140	140	1	He	0.016	0.016	39.86	313	29.39		2000	2000	
Gd 157	157	1	He	0.000	0.000	-5693.81	27	78.07		2000	2000	
Au 197	197	1	He	-0.014	-0.014	-76.92	397	5.88		2000	2000	
Tl 205	205	1	He	-0.010	-0.010	-64.90	87	53.43		500	500	
Pb206	206	1	He	3.492	3.492	0.98	7862	7.73		12000	12000	
Pb207	207	1	He	3.312	3.312	2.22	6386	6.34		12000	12000	
Pb 208	208	1	He	3.378	3.378	0.30	29296	8.08		12000	12000	
U 238	238	1	He	-0.008	-0.008	-21.18	130	16.81		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5434222	12.76	7122799	76.29	80	120	ISTD Failed
Sc_45	45	2	H2	35305111	6.87	38319065	92.13	80	120	
Ge_72	72	1	He	3192666	8.94	3981131	80.19	80	120	
Ge_72	72	2	H2	11205823	2.59	11928338	93.94	80	120	
In_115	115	1	He	3494409	9.23	4490435	77.82	80	120	ISTD Failed
In_115	115	2	H2	10110591	1.50	10423245	97.00	80	120	
Tm_169	169	1	He	3457562	7.82	4215469	82.02	80	120	

Sample Table

Sample Name	320-22742-A-6-A
Data File Name	234SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:55:39-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.076	-0.076	-52.94	25	29.54		2000	2000	
Be 9	9	2	H2	-0.031	-0.031	-30.22	2	88.19		2000	2000	
B 11	11	2	H2	41.064	41.064	2.66	7792	6.45		10000	10000	
Na 23	23	1	He	129.220	129.220	10.04	138936	3.40		100000	100000	
Mg 24	24	1	He	91.863	91.863	6.40	28687	4.48		100000	100000	
Al 27	27	1	He	21.356	21.356	5.98	3504	3.84		100000	100000	
P 31	31	1	He	16.183	16.183	11.40	193	10.24		100000	100000	
K 39	39	1	He	27.163	27.163	27.24	68956	1.60		100000	100000	
Ca 40	40	2	H2	249.614	249.614	9.66	904712	13.83		100000	100000	
Ti 47	47	1	He	0.510	0.510	22.43	71	17.29		2000	2000	
V 51	51	1	He	0.015	0.015	35.89	735	2.26		2000	2000	
Cr 52	52	1	He	1.888	1.888	5.59	8744	2.16		2000	2000	
Mn 55	55	1	He	2.812	2.812	8.01	6108	6.47		22000	22000	
Fe 56	56	1	He	61.741	61.741	5.54	164552	3.50		100000	100000	
Co 59	59	1	He	0.996	0.996	6.45	4236	5.09		2000	2000	
Ni 60	60	1	He	2.029	2.029	12.97	2482	8.87		2000	2000	
Cu 63	63	1	He	23.095	23.095	5.03	61612	3.17		2000	2000	
Zn 66	66	1	He	14.331	14.331	5.88	7626	4.48		2000	2000	
As 75	75	1	He	3.459	3.459	7.87	1565	4.52		2000	2000	
Se 78	78	2	H2	0.164	0.164	35.19	70	18.23		2000	2000	
Sr 88	88	1	He	0.680	0.680	4.15	2408	3.64		2000	2000	
Mo 95	95	1	He	0.562	0.562	9.88	941	8.78		2000	2000	
Ag 107	107	1	He	0.037	0.037	16.66	208	12.04		500	500	
Cd 111	111	1	He	0.016	0.016	27.15	23	13.09		2000	2000	
Sn 118	118	1	He	7.421	7.421	3.51	15161	2.47		2000	2000	
Sb 121	121	1	He	-0.174	-0.174	-5.41	526	4.13		2000	2000	
Ba 137	137	1	He	4.667	4.667	3.27	4623	3.37		2000	2000	
Ce 140	140	1	He	0.028	0.028	5.86	472	3.89		2000	2000	
Gd 157	157	1	He	-0.010	-0.010	-14.79	7	50.03		2000	2000	
Au 197	197	1	He	-0.082	-0.082	-6.02	240	6.36		2000	2000	
Tl 205	205	1	He	-0.012	-0.012	-16.50	81	15.56		500	500	
Pb206	206	1	He	1.218	1.218	7.85	3151	7.92		12000	12000	
Pb207	207	1	He	1.176	1.176	4.96	2606	3.29		12000	12000	
Pb 208	208	1	He	1.211	1.211	4.82	12062	4.38		12000	12000	
U 238	238	1	He	-0.016	-0.016	-6.07	74	9.32		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5853609	2.23	7122799	82.18	80	120	
Sc_45	45	2	H2	35464001	4.91	38319065	92.55	80	120	
Ge_72	72	1	He	3410686	1.96	3981131	85.67	80	120	
Ge_72	72	2	H2	11147772	0.74	11928338	93.46	80	120	
In_115	115	1	He	3746719	1.31	4490435	83.44	80	120	
In_115	115	2	H2	10187620	2.30	10423245	97.74	80	120	
Tm_169	169	1	He	3788253	2.11	4215469	89.87	80	120	

Sample Table

Sample Name	320-22742-A-7-A
Data File Name	235SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T22:59:15-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	-0.099	-0.099	-23.15	21	24.51		2000	2000	
Be 9	9	2	H2	-0.031	-0.031	-20.67	2	66.67		2000	2000	
B 11	11	2	H2	45.993	45.993	1.11	8597	6.12		10000	10000	
Na 23	23	1	He	107.780	107.780	9.37	131036	3.23		100000	100000	
Mg 24	24	1	He	62.521	62.521	4.26	20386	2.83		100000	100000	
Al 27	27	1	He	18.231	18.231	4.47	3140	4.62		100000	100000	
P 31	31	1	He	14.593	14.593	16.45	185	12.65		100000	100000	
K 39	39	1	He	28.346	28.346	14.75	71554	1.07		100000	100000	
Ca 40	40	2	H2	223.602	223.602	7.70	835266	12.24		100000	100000	
Ti 47	47	1	He	0.165	0.165	75.51	38	31.58		2000	2000	
V 51	51	1	He	0.001	0.001	1243.58	722	5.96		2000	2000	
Cr 52	52	1	He	1.707	1.707	5.27	8477	1.98		2000	2000	
Mn 55	55	1	He	8.190	8.190	8.08	17987	7.17		22000	22000	
Fe 56	56	1	He	37.810	37.810	5.75	105607	4.61		100000	100000	
Co 59	59	1	He	0.385	0.385	8.82	1809	6.69		2000	2000	
Ni 60	60	1	He	0.692	0.692	13.96	1178	7.14		2000	2000	
Cu 63	63	1	He	10.450	10.450	4.85	29161	3.85		2000	2000	
Zn 66	66	1	He	12.810	12.810	4.55	6981	6.14		2000	2000	
As 75	75	1	He	3.329	3.329	7.46	1543	7.35		2000	2000	
Se 78	78	2	H2	0.192	0.192	49.64	77	24.97		2000	2000	
Sr 88	88	1	He	0.666	0.666	3.48	2399	2.19		2000	2000	
Mo 95	95	1	He	0.408	0.408	3.45	719	3.09		2000	2000	
Ag 107	107	1	He	0.050	0.050	11.51	274	9.89		500	500	
Cd 111	111	1	He	0.036	0.036	21.63	39	12.80		2000	2000	
Sn 118	118	1	He	7.090	7.090	7.26	15129	4.88		2000	2000	
Sb 121	121	1	He	0.691	0.691	11.20	2661	5.40		2000	2000	
Ba 137	137	1	He	4.809	4.809	8.49	4965	6.34		2000	2000	
Ce 140	140	1	He	0.009	0.009	61.25	266	23.33		2000	2000	
Gd 157	157	1	He	-0.011	-0.011	-0.29	3	0.00		2000	2000	
Au 197	197	1	He	-0.113	-0.113	-8.15	156	18.23		2000	2000	
Tl 205	205	1	He	-0.015	-0.015	-12.25	63	21.06		500	500	
Pb206	206	1	He	1.596	1.596	5.39	4148	2.86		12000	12000	
Pb207	207	1	He	1.610	1.610	5.76	3577	3.09		12000	12000	
Pb 208	208	1	He	1.620	1.620	6.46	16195	4.22		12000	12000	
U 238	238	1	He	-0.012	-0.012	-18.30	113	14.70		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6034421	1.33	7122799	84.72	80	120	
Sc_45	45	2	H2	36263043	5.36	38319065	94.63	80	120	
Ge_72	72	1	He	3460415	1.97	3981131	86.92	80	120	
Ge_72	72	2	H2	11341594	2.35	11928338	95.08	80	120	
In_115	115	1	He	3910846	2.25	4490435	87.09	80	120	
In_115	115	2	H2	10327375	2.95	10423245	99.08	80	120	
Tm_169	169	1	He	3874271	2.39	4215469	91.91	80	120	

Sample Report

Sample Table

Sample Name	320-22742-A-8-A
Data File Name	236SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:02:49-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.121	0.121	7.93	66	9.29		2000	2000	
Be 9	9	2	H2	-0.028	-0.028	-10.72	2	25.00		2000	2000	
B 11	11	2	H2	32.815	32.815	0.85	6884	7.57		10000	10000	
Na 23	23	1	He	377.587	377.587	4.57	293786	1.97		100000	100000	
Mg 24	24	1	He	135.119	135.119	3.31	44475	1.86		100000	100000	
Al 27	27	1	He	6.173	6.173	10.63	1347	7.75		100000	100000	
P 31	31	1	He	14.945	14.945	13.09	193	9.39		100000	100000	
K 39	39	1	He	27.048	27.048	21.31	73241	0.80		100000	100000	
Ca 40	40	2	H2	779.262	779.262	7.31	2736112	14.52		100000	100000	
Ti 47	47	1	He	0.253	0.253	74.80	49	42.18		2000	2000	
V 51	51	1	He	1.367	1.367	1.13	4373	2.05		2000	2000	
Cr 52	52	1	He	1.822	1.822	2.62	9092	1.70		2000	2000	
Mn 55	55	1	He	0.417	0.417	18.00	1125	12.63		22000	22000	
Fe 56	56	1	He	23.935	23.935	5.09	70547	3.50		100000	100000	
Co 59	59	1	He	0.343	0.343	6.16	1681	5.50		2000	2000	
Ni 60	60	1	He	0.484	0.484	2.41	993	3.33		2000	2000	
Cu 63	63	1	He	2.854	2.854	5.99	8767	3.27		2000	2000	
Zn 66	66	1	He	2.097	2.097	13.65	1645	9.77		2000	2000	
As 75	75	1	He	3.036	3.036	1.78	1482	2.03		2000	2000	
Se 78	78	2	H2	-0.031	-0.031	-92.76	28	20.07		2000	2000	
Sr 88	88	1	He	7.969	7.969	2.55	26929	3.32		2000	2000	
Mo 95	95	1	He	0.164	0.164	13.08	356	10.37		2000	2000	
Ag 107	107	1	He	0.040	0.040	30.62	232	23.34		500	500	
Cd 111	111	1	He	0.003	0.003	164.12	15	27.15		2000	2000	
Sn 118	118	1	He	7.104	7.104	6.67	15325	5.76		2000	2000	
Sb 121	121	1	He	0.792	0.792	9.75	2940	5.97		2000	2000	
Ba 137	137	1	He	3.137	3.137	7.32	3286	5.79		2000	2000	
Ce 140	140	1	He	-0.003	-0.003	-35.18	128	7.97		2000	2000	
Gd 157	157	1	He	-0.007	-0.007	-30.68	13	43.29		2000	2000	
Au 197	197	1	He	-0.123	-0.123	-5.72	129	18.35		2000	2000	
Tl 205	205	1	He	-0.018	-0.018	-17.49	46	49.80		500	500	
Pb206	206	1	He	0.347	0.347	7.93	1106	3.65		12000	12000	
Pb207	207	1	He	0.365	0.365	14.43	982	10.16		12000	12000	
Pb 208	208	1	He	0.353	0.353	8.70	4327	5.73		12000	12000	
U 238	238	1	He	-0.001	-0.001	-182.17	214	7.98		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6220367	2.30	7122799	87.33	80	120	
Sc_45	45	2	H2	36128684	7.44	38319065	94.28	80	120	
Ge_72	72	1	He	3568479	0.81	3981131	89.63	80	120	
Ge_72	72	2	H2	11316075	2.44	11928338	94.87	80	120	
In_115	115	1	He	3951865	1.83	4490435	88.01	80	120	
In_115	115	2	H2	10421618	1.39	10423245	99.98	80	120	
Tm_169	169	1	He	3967073	2.74	4215469	94.11	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	237_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:06:23-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	100.975	2.635	23769	9.38	100	101.0	90	110	
Be 9	9	2	H2	95.655	2.460	15574	9.20	100	95.7	90	110	
Na 23	23	1	He	5241.000	3.627	3652692	3.05	5100	102.8	90	110	
Mg 24	24	1	He	5073.293	2.700	1899224	2.33	5100	99.5	90	110	
Al 27	27	1	He	4971.932	1.560	902197	3.13	5100	97.5	90	110	
P 31	31	1	He	4838.896	1.380	50509	2.18	5000	96.8	90	110	
K 39	39	1	He	5046.587	2.592	2312146	3.85	5100	99.0	90	110	
Ca 40	40	2	H2	4923.855	9.008	19487036	15.81	5100	96.5	90	110	
Ti 47	47	1	He	202.109	2.553	24225	3.14	200	101.1	90	110	
V 51	51	1	He	104.244	3.771	321536	4.44	100	104.2	90	110	
Cr 52	52	1	He	103.828	2.524	371242	4.15	100	103.8	90	110	
Mn 55	55	1	He	101.874	2.399	264582	3.33	100	101.9	90	110	
Fe 56	56	1	He	5083.422	2.003	16255565	3.01	5100	99.7	90	110	
Co 59	59	1	He	105.012	3.548	525353	4.10	100	105.0	90	110	
Ni 60	60	1	He	104.729	3.163	129754	4.12	100	104.7	90	110	
Cu 63	63	1	He	105.479	2.856	343154	3.18	100	105.5	90	110	
Zn 66	66	1	He	98.873	2.112	61118	2.45	100	98.9	90	110	
As 75	75	1	He	98.460	3.686	43317	3.90	100	98.5	90	110	
Se 78	78	2	H2	98.839	5.290	25099	7.87	100	98.8	90	110	
Sr 88	88	1	He	96.617	3.311	382070	3.53	100	96.6	90	110	
Mo 95	95	1	He	202.210	3.102	378364	3.52	200	101.1	90	110	
Ag 107	107	1	He	53.237	3.372	264958	4.06	50	106.5	90	110	
Cd 111	111	1	He	103.760	2.671	88031	3.69	100	103.8	90	110	
Sn 118	118	1	He	103.663	3.202	246620	3.99	100	103.7	90	110	
Sb 121	121	1	He	52.504	4.108	148347	4.72	50	105.0	90	110	
Ba 137	137	1	He	101.325	2.337	119469	3.24	100	101.3	90	110	
Ce 140	140	1	He	105.281	3.518	1422061	4.02	100	105.3	90	110	
Gd 157	157	1	He	99.191	4.941	287671	2.67	100	99.2	90	110	
Au 197	197	1	He	101.436	5.660	354184	3.30	100	101.4	90	110	
Tl 205	205	1	He	50.127	4.980	408681	2.61	50	100.3	90	110	
Pb206	206	1	He	100.508	5.911	293638	3.55	100	100.5	1	10000	
Pb207	207	1	He	98.995	5.296	247608	2.98	100	99.0	1	10000	
Pb 208	208	1	He	99.597	5.875	1119272	3.59	100	99.6	90	110	
U 238	238	1	He	99.161	5.642	1028973	3.48	100	99.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7200919	2.44	7122799	101.10	80	120	
Sc_45	45	2	H2	41563852	6.70	38319065	108.47	80	120	
Ge_72	72	1	He	4211289	0.63	3981131	105.78	80	120	
Ge_72	72	2	H2	13225593	2.61	11928338	110.88	80	120	
In_115	115	1	He	4486270	1.13	4490435	99.91	80	120	
In_115	115	2	H2	11825629	2.74	10423245	113.45	80	120	
Tm_169	169	1	He	4605560	2.44	4215469	109.25	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	238_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:09:50-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.122	-13.2	18	21.8	10	
Be 9	9	2	H2	-0.022	-51.2	3	55.5	1	
Na 23	23	1	He	-91.539	-0.8	19830	0.8	50	>+/-RL
Mg 24	24	1	He	-1.454	-11.3	377	16.6	50	
Al 27	27	1	He	-0.009	-2872.3	421	9.0	50	
P 31	31	1	He	-0.514	-577.7	60	48.1	50	
K 39	39	1	He	-19.781	-7.9	61608	1.3	50	
Ca 40	40	2	H2	-11.846	-2.0	29793	9.1	50	
Ti 47	47	1	He	-0.091	-128.3	14	93.7	5	
V 51	51	1	He	-0.084	-18.0	576	5.5	10	
Cr 52	52	1	He	-0.172	-33.6	3343	4.4	2	
Mn 55	55	1	He	-0.045	-7.2	101	6.3	1	
Fe 56	56	1	He	-0.175	-49.2	4463	6.9	50	
Co 59	59	1	He	-0.037	-3.3	45	14.4	1	
Ni 60	60	1	He	-0.420	-2.4	33	35.2	2	
Cu 63	63	1	He	-0.187	-5.2	279	10.0	2	
Zn 66	66	1	He	-0.861	-3.0	127	12.1	5	
As 75	75	1	He	-0.235	-11.6	313	2.2	2	
Se 78	78	2	H2	-0.070	-71.9	23	55.5	2	
Sr 88	88	1	He	-0.029	-28.0	169	17.6	5	
Mo 95	95	1	He	-0.002	-558.2	104	21.3	2	
Ag 107	107	1	He	0.001	514.4	71	49.2	1	
Cd 111	111	1	He	-0.005	-203.5	11	75.8	1	
Sn 118	118	1	He	0.211	3.1	1046	1.5	10	
Sb 121	121	1	He	-0.281	-0.4	330	1.0	2	
Ba 137	137	1	He	-0.016	-29.9	17	34.6	1	
Ce 140	140	1	He	-0.006	-44.4	109	31.0	5	
Gd 157	157	1	He	-0.008	-22.3	12	41.7	1	
Au 197	197	1	He	-0.057	-41.4	359	22.4	5	
Tl 205	205	1	He	-0.005	-61.0	149	16.5	1	
Pb206	206	1	He	0.001	1743.8	261	18.5	1	
Pb207	207	1	He	-0.002	-56.4	212	1.8	1	
Pb 208	208	1	He	0.000	-732.5	1001	4.4	1	
U 238	238	1	He	-0.007	-61.0	173	25.2	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6927559	2.16	7122799	97.26	80	120	
Sc_45	45	2	H2	40235975	7.52	38319065	105.00	80	120	
Ge_72	72	1	He	4067158	1.63	3981131	102.16	80	120	
Ge_72	72	2	H2	12820320	1.18	11928338	107.48	80	120	
In_115	115	1	He	4490248	0.76	4490435	100.00	80	120	
In_115	115	2	H2	11547682	1.05	10423245	110.79	80	120	
Tm_169	169	1	He	4375840	0.56	4215469	103.80	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	239_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:13:24-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	104.737	0.776	23497	9.72	100	104.7	90	110	
Be 9	9	2	H2	98.455	0.326	15276	9.33	100	98.5	90	110	
Na 23	23	1	He	5140.957	0.997	3467022	1.63	5100	100.8	90	110	
Mg 24	24	1	He	5077.197	3.188	1838549	4.06	5100	99.6	90	110	
Al 27	27	1	He	4918.093	2.756	862831	2.90	5100	96.4	90	110	
P 31	31	1	He	4808.788	2.675	48539	2.98	5000	96.2	90	110	
K 39	39	1	He	4934.935	1.607	2187599	2.26	5100	96.8	90	110	
Ca 40	40	2	H2	5049.703	9.364	19101799	19.04	5100	99.0	90	110	
Ti 47	47	1	He	199.040	4.548	23067	4.26	200	99.5	90	110	
V 51	51	1	He	103.776	2.458	309501	2.70	100	103.8	90	110	
Cr 52	52	1	He	103.455	1.673	357606	1.86	100	103.5	90	110	
Mn 55	55	1	He	101.536	2.015	254989	2.56	100	101.5	90	110	
Fe 56	56	1	He	5127.607	2.289	15854331	2.52	5100	100.5	90	110	
Co 59	59	1	He	104.848	1.958	507183	2.08	100	104.8	90	110	
Ni 60	60	1	He	104.397	2.578	125053	2.61	100	104.4	90	110	
Cu 63	63	1	He	104.485	2.666	328720	2.93	100	104.5	90	110	
Zn 66	66	1	He	99.185	3.407	58429	1.83	100	99.2	90	110	
As 75	75	1	He	99.720	3.578	41804	1.99	100	99.7	90	110	
Se 78	78	2	H2	103.880	1.996	24946	7.12	100	103.9	90	110	
Sr 88	88	1	He	97.905	4.059	369011	3.33	100	97.9	90	110	
Mo 95	95	1	He	205.523	3.977	366538	3.47	200	102.8	90	110	
Ag 107	107	1	He	53.215	1.299	255586	1.16	50	106.4	90	110	
Cd 111	111	1	He	103.556	1.685	84794	2.60	100	103.6	90	110	
Sn 118	118	1	He	103.779	2.267	238283	2.84	100	103.8	90	110	
Sb 121	121	1	He	52.762	2.873	143864	3.13	50	105.5	90	110	
Ba 137	137	1	He	102.608	1.344	116759	1.90	100	102.6	90	110	
Ce 140	140	1	He	105.125	2.105	1370490	2.63	100	105.1	90	110	
Gd 157	157	1	He	99.647	1.101	280417	2.72	100	99.6	90	110	
Au 197	197	1	He	101.937	1.905	345414	3.13	100	101.9	90	110	
Tl 205	205	1	He	49.336	1.495	390304	2.83	50	98.7	90	110	
Pb206	206	1	He	99.047	1.886	280801	2.44	100	99.0	1	10000	
Pb207	207	1	He	99.253	2.270	240841	2.05	100	99.3	1	10000	
Pb 208	208	1	He	99.021	1.628	1079792	2.21	100	99.0	90	110	
U 238	238	1	He	99.202	2.217	998985	3.61	100	99.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6962431	0.93	7122799	97.75	80	120	
Sc_45	45	2	H2	39658851	9.54	38319065	103.50	80	120	
Ge_72	72	1	He	4015769	2.80	3981131	100.87	80	120	
Ge_72	72	2	H2	12511462	5.16	11928338	104.89	80	120	
In_115	115	1	He	4330399	1.75	4490435	96.44	80	120	
In_115	115	2	H2	11333081	3.40	10423245	108.73	80	120	
Tm_169	169	1	He	4464981	1.87	4215469	105.92	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	240_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:16:52-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.110	-10.4	21	9.8	10	
Be 9	9	2	H2	-0.024	-17.9	3	27.0	1	
Na 23	23	1	He	-91.507	-0.5	20067	1.3	50	>+/-RL
Mg 24	24	1	He	-1.283	-7.0	443	8.9	50	
Al 27	27	1	He	-0.040	-1171.9	420	19.2	50	
P 31	31	1	He	0.114	1011.7	67	17.9	50	
K 39	39	1	He	-17.237	-12.5	63362	1.4	50	
Ca 40	40	2	H2	-11.770	-2.0	30310	7.8	50	
Ti 47	47	1	He	-0.089	-65.9	15	47.9	5	
V 51	51	1	He	-0.046	-29.4	698	7.2	10	
Cr 52	52	1	He	-0.158	-55.2	3426	8.2	2	
Mn 55	55	1	He	-0.042	-15.2	111	13.1	1	
Fe 56	56	1	He	-0.003	-3878.3	5047	8.8	50	
Co 59	59	1	He	-0.033	-12.8	68	31.8	1	
Ni 60	60	1	He	-0.418	-1.8	36	25.5	2	
Cu 63	63	1	He	-0.179	-6.5	308	13.5	2	
Zn 66	66	1	He	-0.815	-4.2	155	11.6	5	
As 75	75	1	He	-0.167	-30.9	343	7.0	2	
Se 78	78	2	H2	-0.030	-108.7	32	23.4	2	
Sr 88	88	1	He	-0.028	-20.0	170	14.3	5	
Mo 95	95	1	He	0.011	95.9	129	16.4	2	
Ag 107	107	1	He	0.006	69.0	92	21.8	1	
Cd 111	111	1	He	-0.004	-117.5	11	36.7	1	
Sn 118	118	1	He	0.206	15.4	1036	6.2	10	
Sb 121	121	1	He	-0.277	-2.5	342	4.4	2	
Ba 137	137	1	He	-0.011	-85.3	22	52.7	1	
Ce 140	140	1	He	-0.006	-34.0	103	27.6	5	
Gd 157	157	1	He	-0.004	-30.8	24	15.8	1	
Au 197	197	1	He	-0.051	-41.3	387	17.2	5	
Tl 205	205	1	He	-0.001	-281.8	180	16.1	1	
Pb206	206	1	He	0.007	104.0	282	7.1	1	
Pb207	207	1	He	0.009	89.6	244	10.1	1	
Pb 208	208	1	He	0.001	120.0	1036	2.9	1	
U 238	238	1	He	-0.005	-192.6	200	42.1	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7001257	1.73	7122799	98.29	80	120	
Sc_45	45	2	H2	40532332	5.48	38319065	105.78	80	120	
Ge_72	72	1	He	4082113	1.69	3981131	102.54	80	120	
Ge_72	72	2	H2	12726001	1.95	11928338	106.69	80	120	
In_115	115	1	He	4497714	1.35	4490435	100.16	80	120	
In_115	115	2	H2	11493711	1.71	10423245	110.27	80	120	
Tm_169	169	1	He	4443223	1.94	4215469	105.40	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	241_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:20:27-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	101.980	0.262	22989	6.63	100	102.0	90	110	
Be 9	9	2	H2	96.397	1.248	15037	7.41	100	96.4	90	110	
Na 23	23	1	He	5104.245	4.535	3345967	4.36	5100	100.1	90	110	
Mg 24	24	1	He	5058.343	1.920	1779800	1.13	5100	99.2	90	110	
Al 27	27	1	He	5010.667	3.822	854303	3.49	5100	98.2	90	110	
P 31	31	1	He	4870.893	3.724	47781	3.60	5000	97.4	90	110	
K 39	39	1	He	5114.242	2.426	2200532	1.51	5100	100.3	90	110	
Ca 40	40	2	H2	5049.685	7.574	19142228	13.86	5100	99.0	90	110	
Ti 47	47	1	He	202.481	2.971	22808	2.82	200	101.2	90	110	
V 51	51	1	He	104.858	3.868	303880	3.14	100	104.9	90	110	
Cr 52	52	1	He	104.669	3.852	351554	3.32	100	104.7	90	110	
Mn 55	55	1	He	102.495	3.587	250121	2.98	100	102.5	90	110	
Fe 56	56	1	He	5154.368	4.351	15485257	3.34	5100	101.1	90	110	
Co 59	59	1	He	105.508	4.415	495969	3.86	100	105.5	90	110	
Ni 60	60	1	He	104.386	3.752	121515	3.19	100	104.4	90	110	
Cu 63	63	1	He	105.827	4.276	323509	3.52	100	105.8	90	110	
Zn 66	66	1	He	101.249	4.325	58053	3.00	100	101.2	90	110	
As 75	75	1	He	100.737	4.217	41109	2.85	100	100.7	90	110	
Se 78	78	2	H2	102.526	2.448	24604	5.23	100	102.5	90	110	
Sr 88	88	1	He	99.012	4.571	363253	3.24	100	99.0	90	110	
Mo 95	95	1	He	208.102	4.532	361244	3.20	200	104.1	90	110	
Ag 107	107	1	He	52.630	2.099	251507	3.03	50	105.3	90	110	
Cd 111	111	1	He	102.779	2.116	83726	3.13	100	102.8	90	110	
Sn 118	118	1	He	101.902	2.381	232776	3.09	100	101.9	90	110	
Sb 121	121	1	He	51.803	2.149	140533	2.38	50	103.6	90	110	
Ba 137	137	1	He	101.663	2.254	115118	3.91	100	101.7	90	110	
Ce 140	140	1	He	103.994	2.668	1348932	3.81	100	104.0	90	110	
Gd 157	157	1	He	100.805	4.250	274057	3.70	100	100.8	90	110	
Au 197	197	1	He	104.049	3.570	340606	2.91	100	104.0	90	110	
Tl 205	205	1	He	50.683	5.028	387343	4.35	50	101.4	90	110	
Pb206	206	1	He	101.182	3.815	277166	3.35	100	101.2	1	10000	
Pb207	207	1	He	100.506	4.714	235667	4.19	100	100.5	1	10000	
Pb 208	208	1	He	100.469	3.762	1058592	3.24	100	100.5	90	110	
U 238	238	1	He	100.509	4.359	977765	3.79	100	100.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6767417	1.65	7122799	95.01	80	120	
Sc_45	45	2	H2	39848596	6.42	38319065	103.99	80	120	
Ge_72	72	1	He	3908863	1.35	3981131	98.18	80	120	
Ge_72	72	2	H2	12505440	2.89	11928338	104.84	80	120	
In_115	115	1	He	4308091	2.02	4490435	95.94	80	120	
In_115	115	2	H2	11405442	0.70	10423245	109.42	80	120	
Tm_169	169	1	He	4314703	0.72	4215469	102.35	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	242_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:23:55-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.101	-30.7	22	27.8	10	
Be 9	9	2	H2	-0.026	-26.8	2	44.6	1	
Na 23	23	1	He	-91.370	-0.9	20176	2.1	50	>+/-RL
Mg 24	24	1	He	-1.259	-19.8	452	19.6	50	
Al 27	27	1	He	0.172	122.0	458	7.5	50	
P 31	31	1	He	-0.806	-170.7	58	23.9	50	
K 39	39	1	He	-18.037	-23.9	63074	2.5	50	
Ca 40	40	2	H2	-11.649	-1.1	29678	7.8	50	
Ti 47	47	1	He	-0.134	-37.0	9	61.9	5	
V 51	51	1	He	-0.059	-39.4	659	9.9	10	
Cr 52	52	1	He	-0.167	-40.2	3398	6.2	2	
Mn 55	55	1	He	-0.021	-14.7	164	4.9	1	
Fe 56	56	1	He	0.057	521.6	5233	17.4	50	
Co 59	59	1	He	-0.032	-15.8	70	35.1	1	
Ni 60	60	1	He	-0.411	-1.2	45	13.5	2	
Cu 63	63	1	He	-0.195	-4.8	254	11.4	2	
Zn 66	66	1	He	-0.800	-9.6	163	26.5	5	
As 75	75	1	He	-0.182	-34.8	336	8.2	2	
Se 78	78	2	H2	-0.052	-60.0	26	26.9	2	
Sr 88	88	1	He	-0.019	-33.2	206	12.4	5	
Mo 95	95	1	He	0.018	176.3	141	40.7	2	
Ag 107	107	1	He	0.000	362.9	67	13.2	1	
Cd 111	111	1	He	-0.011	-43.6	5	78.1	1	
Sn 118	118	1	He	0.198	6.4	1014	4.2	10	
Sb 121	121	1	He	-0.259	-3.8	393	8.1	2	
Ba 137	137	1	He	-0.001	-1849.2	34	56.7	1	
Ce 140	140	1	He	-0.005	-95.3	121	50.5	5	
Gd 157	157	1	He	-0.004	-84.9	24	41.7	1	
Au 197	197	1	He	-0.060	-68.0	364	39.1	5	
Tl 205	205	1	He	-0.002	-207.7	177	23.0	1	
Pb206	206	1	He	-0.005	-163.1	253	10.3	1	
Pb207	207	1	He	-0.012	-79.6	197	11.1	1	
Pb 208	208	1	He	-0.005	-69.1	987	3.2	1	
U 238	238	1	He	-0.003	-246.4	220	37.5	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	7007448	0.64	7122799	98.38	80	120	
Sc_45	45	2	H2	39092827	6.20	38319065	102.02	80	120	
Ge_72	72	1	He	4069281	2.08	3981131	102.21	80	120	
Ge_72	72	2	H2	12374282	2.56	11928338	103.74	80	120	
In_115	115	1	He	4490208	1.19	4490435	99.99	80	120	
In_115	115	2	H2	11287046	1.30	10423245	108.29	80	120	
Tm_169	169	1	He	4538197	0.82	4215469	107.66	80	120	

Method Blank (MB) Report

Sample Table

Sample Name	MB 320-134289/1-A
Data File Name	243_PB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:27:31-07:00
Sample Type	MB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.118	-19.1	18	23.1	10	
Be 9	9	2	H2	-0.028	-34.5	2	74.2	1	
Na 23	23	1	He	-95.369	-0.5	17429	2.1	50	>+/-RL
Mg 24	24	1	He	0.666	26.2	1147	4.5	50	
Al 27	27	1	He	-0.324	-13.7	369	1.7	50	
P 31	31	1	He	-0.244	-195.2	63	6.6	50	
K 39	39	1	He	-23.273	-11.6	60474	0.8	50	
Ca 40	40	2	H2	-11.561	-3.9	29652	11.4	50	
Ti 47	47	1	He	-0.146	-11.3	8	25.0	5	
V 51	51	1	He	-0.117	-3.0	483	2.8	10	
Cr 52	52	1	He	-0.497	-4.1	2252	3.9	2	
Mn 55	55	1	He	-0.049	-13.1	93	16.2	1	
Fe 56	56	1	He	-0.332	-1.2	4002	1.2	50	
Co 59	59	1	He	-0.042	-3.4	22	31.5	1	
Ni 60	60	1	He	-0.415	-2.1	40	25.0	2	
Cu 63	63	1	He	-0.191	-5.8	266	12.7	2	
Zn 66	66	1	He	-0.315	-20.1	442	9.0	5	
As 75	75	1	He	-0.263	-23.1	297	10.5	2	
Se 78	78	2	H2	-0.098	-7.9	15	10.4	2	
Sr 88	88	1	He	-0.033	-15.6	149	10.1	5	
Mo 95	95	1	He	-0.042	-10.3	31	22.3	2	
Ag 107	107	1	He	-0.002	-105.0	52	24.2	1	
Cd 111	111	1	He	-0.013	-20.5	3	69.3	1	
Sn 118	118	1	He	0.153	5.2	901	1.5	10	
Sb 121	121	1	He	-0.352	-4.3	130	32.7	2	
Ba 137	137	1	He	-0.006	-205.0	28	54.1	1	
Ce 140	140	1	He	-0.012	-3.2	18	28.6	5	
Gd 157	157	1	He	-0.012	-5.7	1	173.2	1	
Au 197	197	1	He	-0.138	-4.0	90	23.1	5	
Tl 205	205	1	He	-0.013	-5.7	84	9.1	1	
Pb206	206	1	He	-0.028	-40.7	180	15.8	1	
Pb207	207	1	He	-0.005	-514.5	203	25.2	1	
Pb 208	208	1	He	-0.017	-72.0	814	12.1	1	
U 238	238	1	He	-0.018	-6.1	68	14.2	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6968587	1.11	7122799	97.83	80	120	
Sc_45	45	2	H2	38579479	5.70	38319065	100.68	80	120	
Ge_72	72	1	He	4001837	2.93	3981131	100.52	80	120	
Ge_72	72	2	H2	11935199	1.75	11928338	100.06	80	120	
In_115	115	1	He	4455846	0.86	4490435	99.23	80	120	
In_115	115	2	H2	11018548	1.17	10423245	105.71	80	120	
Tm_169	169	1	He	4340845	3.62	4215469	102.97	80	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	LCS 320-134289/2-A
Data File Name	244_LCS.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:31:05-07:00
Sample Type	LCS
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	184.800	184.800	3.263	40638	7.88	200	92.4	88	112	
Be 9	9	2	H2	179.698	179.698	2.834	27350	7.43	200	89.8	88	112	
Na 23	23	1	He	905.756	905.756	5.120	658378	4.44	1000	90.6	88	112	
Mg 24	24	1	He	957.170	957.170	5.603	337753	5.38	1000	95.7	88	112	
Al 27	27	1	He	975.582	975.582	5.421	166781	5.01	1000	97.6	88	112	
P 31	31	1	He	924.540	924.540	5.257	9126	4.33	1000	92.5	88	112	
K 39	39	1	He	938.933	938.933	4.444	460258	3.81	1000	93.9	88	112	
Ca 40	40	2	H2	918.467	918.467	10.970	3456189	15.45	1000	91.8	88	112	
Ti 47	47	1	He	196.311	196.311	4.748	22133	5.09	200	98.2	88	112	
V 51	51	1	He	202.317	202.317	5.290	586078	5.16	200	101.2	88	112	
Cr 52	52	1	He	203.304	203.304	5.445	679838	5.53	200	101.7	88	112	
Mn 55	55	1	He	196.195	196.195	6.364	478930	5.96	200	98.1	88	112	
Fe 56	56	1	He	1024.213	1024.213	6.128	3084019	6.09	1000	102.4	88	112	
Co 59	59	1	He	207.180	207.180	5.623	974488	5.40	200	103.6	88	112	
Ni 60	60	1	He	205.805	205.805	4.400	239276	4.37	200	102.9	88	112	
Cu 63	63	1	He	206.753	206.753	5.355	631796	5.20	200	103.4	88	112	
Zn 66	66	1	He	199.469	199.469	3.508	114914	5.84	200	99.7	88	112	
As 75	75	1	He	192.885	192.885	2.811	79129	5.32	200	96.4	88	112	
Se 78	78	2	H2	191.386	191.386	5.185	43844	5.51	200	95.7	88	112	
Sr 88	88	1	He	191.600	191.600	2.432	709637	4.92	200	95.8	88	112	
Mo 95	95	1	He	209.355	209.355	3.762	367091	6.20	200	104.7	88	112	
Ag 107	107	1	He	49.926	49.926	4.109	246330	5.21	50	99.9	88	112	
Cd 111	111	1	He	193.846	193.846	4.097	163036	5.54	200	96.9	88	112	
Sn 118	118	1	He	199.266	199.266	4.988	469486	6.10	200	99.6	88	112	
Sb 121	121	1	He	203.724	203.724	4.762	567428	5.76	200	101.9	88	112	
Ba 137	137	1	He	192.715	192.715	4.444	225254	5.82	200	96.4	88	112	
Ce 140	140	1	He	199.803	199.803	5.383	2676166	6.95	200	99.9	88	112	
Gd 157	157	1	He	194.801	194.801	3.715	532534	5.63	200	97.4	88	112	
Au 197	197	1	He	201.383	201.383	3.137	662366	5.09	200	100.7	88	112	
Tl 205	205	1	He	50.186	50.186	3.533	385713	5.50	50	100.4	88	112	
Pb206	206	1	He	194.995	194.995	3.298	536842	5.17	200	97.5	88	112	
Pb207	207	1	He	202.603	202.603	4.342	477545	6.26	200	101.3	88	112	
Pb 208	208	1	He	199.297	199.297	3.464	2110519	5.36	200	99.6	88	112	
U 238	238	1	He	204.894	204.894	2.903	2004097	5.06	200	102.4	88	112	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6772619	1.94	7122799	95.08	80	120	
Sc_45	45	2	H2	38871379	4.66	38319065	101.44	80	120	
Ge_72	72	1	He	3944408	2.67	3981131	99.08	80	120	
Ge_72	72	2	H2	11951323	1.51	11928338	100.19	80	120	
In_115	115	1	He	4447184	2.34	4490435	99.04	80	120	
In_115	115	2	H2	11171874	0.88	10423245	107.18	80	120	
Tm_169	169	1	He	4336192	2.23	4215469	102.86	80	120	

Sample Report

Sample Table

Sample Name	320-22797-A-2-A@50
Data File Name	245SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:34:37-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	2.055	2.055	2.16	505	10.39		2000	2000	
Be 9	9	2	H2	-0.013	-0.013	-128.69	5	66.67		2000	2000	
B 11	11	2	H2	80.889	80.889	1.07	14258	9.09		10000	10000	
Na 23	23	1	He	146182.099	146182.099	1.34	95652851	2.98		100000	100000	>LDR
Mg 24	24	1	He	17606.499	17606.499	1.17	6324091	2.81		100000	100000	
Al 27	27	1	He	0.410	0.410	80.53	493	12.16		100000	100000	
P 31	31	1	He	0.274	0.274	315.38	68	12.82		100000	100000	
K 39	39	1	He	5156.242	5156.242	2.70	2265491	4.22		100000	100000	
Ca 40	40	2	H2	3161.645	3161.645	4.36	11933929	13.64		100000	100000	
Ti 47	47	1	He	-0.116	-0.116	-60.99	11	71.32		2000	2000	
V 51	51	1	He	0.757	0.757	2.01	3056	1.34		2000	2000	
Cr 52	52	1	He	0.093	0.093	44.32	4234	3.41		2000	2000	
Mn 55	55	1	He	3.868	3.868	3.14	9846	4.36		22000	22000	
Fe 56	56	1	He	-0.129	-0.129	-38.04	4589	2.07		100000	100000	
Co 59	59	1	He	-0.015	-0.015	-33.09	151	15.66		2000	2000	
Ni 60	60	1	He	0.148	0.148	24.88	706	7.79		2000	2000	
Cu 63	63	1	He	0.744	0.744	1.96	3177	2.91		2000	2000	
Zn 66	66	1	He	0.214	0.214	16.88	754	3.48		2000	2000	
As 75	75	1	He	-0.032	-0.032	-176.40	395	7.28		2000	2000	
Se 78	78	2	H2	-0.067	-0.067	-36.17	23	28.70		2000	2000	
Sr 88	88	1	He	80.906	80.906	3.93	305811	4.23		2000	2000	
Mo 95	95	1	He	0.219	0.219	26.62	498	20.76		2000	2000	
Ag 107	107	1	He	0.006	0.006	48.87	89	15.15		500	500	
Cd 111	111	1	He	0.008	0.008	72.56	21	24.35		2000	2000	
Sn 118	118	1	He	0.236	0.236	12.04	1069	7.80		2000	2000	
Sb 121	121	1	He	-0.278	-0.278	-6.94	327	15.41		2000	2000	
Ba 137	137	1	He	3.713	3.713	2.19	4264	1.03		2000	2000	
Ce 140	140	1	He	0.002	0.002	169.73	210	27.50		2000	2000	
Gd 157	157	1	He	0.001	0.001	1208.37	37	50.62		2000	2000	
Au 197	197	1	He	-0.020	-0.020	-214.31	483	31.09		2000	2000	
Tl 205	205	1	He	-0.003	-0.003	-130.33	162	22.63		500	500	
Pb206	206	1	He	0.033	0.033	39.06	351	10.92		12000	12000	
Pb207	207	1	He	0.042	0.042	39.12	320	13.62		12000	12000	
Pb 208	208	1	He	0.038	0.038	41.52	1412	12.85		12000	12000	
U 238	238	1	He	0.055	0.055	23.64	789	17.53		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6908900	1.64	7122799	97.00	80	120	
Sc_45	45	2	H2	39610437	9.50	38319065	103.37	80	120	
Ge_72	72	1	He	4024897	1.51	3981131	101.10	80	120	
Ge_72	72	2	H2	12387394	3.57	11928338	103.85	80	120	
In_115	115	1	He	4337239	1.69	4490435	96.59	80	120	
In_115	115	2	H2	10972795	0.62	10423245	105.27	80	120	
Tm_169	169	1	He	4387526	1.32	4215469	104.08	80	120	

Sample Report

Sample Table

Sample Name	SD 320-22797-A-2-A@250
Data File Name	246SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:38:08-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.567	0.567	1.81	165	9.00		2000	2000	
Be 9	9	2	H2	-0.041	-0.041	-4.39	0	173.21		2000	2000	
B 11	11	2	H2	43.299	43.299	3.27	8641	8.15		10000	10000	
Na 23	23	1	He	32179.966	32179.966	4.42	20567457	3.50		100000	100000	
Mg 24	24	1	He	4133.878	4133.878	3.78	1447062	3.62		100000	100000	
Al 27	27	1	He	0.269	0.269	41.12	457	5.11		100000	100000	
P 31	31	1	He	-0.863	-0.863	-182.24	55	29.44		100000	100000	
K 39	39	1	He	1086.325	1086.325	4.28	518476	2.35		100000	100000	
Ca 40	40	2	H2	732.862	732.862	5.40	2705826	12.43		100000	100000	
Ti 47	47	1	He	-0.071	-0.071	-105.71	16	50.00		2000	2000	
V 51	51	1	He	0.275	0.275	4.94	1592	4.17		2000	2000	
Cr 52	52	1	He	-0.160	-0.160	-7.03	3289	1.97		2000	2000	
Mn 55	55	1	He	0.832	0.832	0.60	2226	2.65		22000	22000	
Fe 56	56	1	He	-0.276	-0.276	-43.53	4028	6.74		100000	100000	
Co 59	59	1	He	-0.030	-0.030	-43.86	75	80.59		2000	2000	
Ni 60	60	1	He	-0.266	-0.266	-10.65	210	14.03		2000	2000	
Cu 63	63	1	He	0.338	0.338	12.82	1860	5.00		2000	2000	
Zn 66	66	1	He	-0.394	-0.394	-25.81	377	14.98		2000	2000	
As 75	75	1	He	-0.138	-0.138	-24.40	331	3.94		2000	2000	
Se 78	78	2	H2	-0.059	-0.059	-50.37	24	27.17		2000	2000	
Sr 88	88	1	He	18.369	18.369	3.73	65848	3.81		2000	2000	
Mo 95	95	1	He	0.007	0.007	124.52	112	12.00		2000	2000	
Ag 107	107	1	He	-0.002	-0.002	-206.18	51	33.46		500	500	
Cd 111	111	1	He	-0.005	-0.005	-98.67	10	34.64		2000	2000	
Sn 118	118	1	He	0.168	0.168	6.75	882	3.59		2000	2000	
Sb 121	121	1	He	-0.294	-0.294	-2.99	276	9.78		2000	2000	
Ba 137	137	1	He	0.859	0.859	7.07	981	5.38		2000	2000	
Ce 140	140	1	He	-0.009	-0.009	-59.78	60	106.43		2000	2000	
Gd 157	157	1	He	-0.008	-0.008	-64.07	13	100.01		2000	2000	
Au 197	197	1	He	-0.135	-0.135	-5.06	98	22.70		2000	2000	
Tl 205	205	1	He	-0.014	-0.014	-2.23	79	2.44		500	500	
Pb206	206	1	He	0.004	0.004	694.21	262	25.75		12000	12000	
Pb207	207	1	He	0.016	0.016	107.76	251	15.84		12000	12000	
Pb 208	208	1	He	0.015	0.015	48.56	1144	7.22		12000	12000	
U 238	238	1	He	-0.005	-0.005	-109.73	191	27.04		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6732163	2.13	7122799	94.52	80	120	
Sc_45	45	2	H2	37980237	7.66	38319065	99.12	80	120	
Ge_72	72	1	He	3805391	0.23	3981131	95.59	80	120	
Ge_72	72	2	H2	12000036	1.91	11928338	100.60	80	120	
In_115	115	1	He	4201646	2.43	4490435	93.57	80	120	
In_115	115	2	H2	10813352	1.93	10423245	103.74	80	120	
Tm_169	169	1	He	4276585	0.59	4215469	101.45	80	120	

Sample Table

Sample Name	PDS 320-22797-A-2-A@50
Data File Name	247SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:41:39-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	400.515	400.515	4.73	86363	9.58		2000	2000	
Be 9	9	2	H2	381.369	381.369	4.40	56951	9.44		2000	2000	
B 11	11	2	H2	1994.585	1994.585	6.24	271520	11.32		10000	10000	
Na 23	23	1	He	148267.892	148267.892	2.01	96643901	2.09		100000	100000	>LDR
Mg 24	24	1	He	19548.271	19548.271	1.71	6994592	1.78		100000	100000	
Al 27	27	1	He	2095.291	2095.291	2.70	363663	2.73		100000	100000	
P 31	31	1	He	1935.065	1935.065	4.16	19349	4.17		100000	100000	
K 39	39	1	He	6994.252	6994.252	1.06	3035991	1.02		100000	100000	
Ca 40	40	2	H2	5284.808	5284.808	12.32	19173053	17.14		100000	100000	
Ti 47	47	1	He	395.688	395.688	3.60	45317	3.63		2000	2000	
V 51	51	1	He	406.967	406.967	2.09	1197534	2.12		2000	2000	
Cr 52	52	1	He	410.889	410.889	5.01	1392579	5.06		2000	2000	
Mn 55	55	1	He	385.163	385.163	2.83	955635	2.86		22000	22000	
Fe 56	56	1	He	1956.356	1956.356	2.38	5983277	2.42		100000	100000	
Co 59	59	1	He	411.919	411.919	2.88	1969333	2.96		2000	2000	
Ni 60	60	1	He	390.059	390.059	3.21	460490	3.22		2000	2000	
Cu 63	63	1	He	395.158	395.158	2.56	1226676	2.59		2000	2000	
Zn 66	66	1	He	387.516	387.516	2.45	215311	2.46		2000	2000	
As 75	75	1	He	395.889	395.889	1.86	156648	1.98		2000	2000	
Se 78	78	2	H2	386.506	386.506	4.87	88361	6.83		2000	2000	
Sr 88	88	1	He	509.034	509.034	2.40	1822917	2.61		2000	2000	
Mo 95	95	1	He	426.863	426.863	2.71	723551	2.43		2000	2000	
Ag 107	107	1	He	99.998	99.998	2.33	472473	3.19		500	500	
Cd 111	111	1	He	385.756	385.756	1.22	310668	2.13		2000	2000	
Sn 118	118	1	He	403.749	403.749	2.15	910476	3.08		2000	2000	
Sb 121	121	1	He	421.192	421.192	2.14	1122432	3.12		2000	2000	
Ba 137	137	1	He	401.723	401.723	2.84	449610	3.50		2000	2000	
Ce 140	140	1	He	405.458	405.458	2.75	5199683	3.64		2000	2000	
Gd 157	157	1	He	402.469	402.469	0.76	1066621	3.03		2000	2000	
Au 197	197	1	He	405.259	405.259	1.63	1291956	3.88		2000	2000	
Tl 205	205	1	He	98.269	98.269	1.00	732059	3.18		500	500	
Pb206	206	1	He	388.335	388.335	0.41	1036252	2.63		12000	12000	
Pb207	207	1	He	401.076	401.076	0.17	916120	2.37		12000	12000	
Pb 208	208	1	He	401.356	401.356	0.33	4119053	1.96		12000	12000	
U 238	238	1	He	420.356	420.356	1.58	3984669	1.36		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6883288	0.08	7122799	96.64	80	120	
Sc_45	45	2	H2	38127429	5.48	38319065	99.50	80	120	
Ge_72	72	1	He	3816371	1.56	3981131	95.86	80	120	
Ge_72	72	2	H2	11925575	2.34	11928338	99.98	80	120	
In_115	115	1	He	4259526	1.13	4490435	94.86	80	120	
In_115	115	2	H2	10585377	3.84	10423245	101.56	80	120	
Tm_169	169	1	He	4205231	2.28	4215469	99.76	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	248_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:45:00-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	102.436	2.348	21123	7.27	100	102.4	90	110	
Be 9	9	2	H2	98.132	1.774	14000	7.45	100	98.1	90	110	
Na 23	23	1	He	5169.541	7.235	3196274	3.62	5100	101.4	90	110	
Mg 24	24	1	He	5073.319	8.700	1683857	5.51	5100	99.5	90	110	
Al 27	27	1	He	4982.010	6.118	801631	2.68	5100	97.7	90	110	
P 31	31	1	He	4837.129	5.829	44783	2.54	5000	96.7	90	110	
K 39	39	1	He	4954.348	3.285	2015341	1.20	5100	97.1	90	110	
Ca 40	40	2	H2	4995.500	6.021	17295601	11.33	5100	98.0	90	110	
Ti 47	47	1	He	202.520	5.186	21533	1.95	200	101.3	90	110	
V 51	51	1	He	104.016	5.895	284522	2.38	100	104.0	90	110	
Cr 52	52	1	He	103.806	6.078	329085	2.52	100	103.8	90	110	
Mn 55	55	1	He	100.647	4.674	231884	1.19	100	100.6	90	110	
Fe 56	56	1	He	5052.648	6.067	14328663	2.69	5100	99.1	90	110	
Co 59	59	1	He	103.922	6.158	461088	2.96	100	103.9	90	110	
Ni 60	60	1	He	104.121	6.556	114383	3.10	100	104.1	90	110	
Cu 63	63	1	He	104.461	6.209	301406	2.72	100	104.5	90	110	
Zn 66	66	1	He	100.704	2.667	54670	2.35	100	100.7	90	110	
As 75	75	1	He	99.531	2.745	38460	2.60	100	99.5	90	110	
Se 78	78	2	H2	102.793	4.977	22562	6.25	100	102.8	90	110	
Sr 88	88	1	He	98.410	2.588	341825	2.04	100	98.4	90	110	
Mo 95	95	1	He	204.451	2.740	336008	2.10	200	102.2	90	110	
Ag 107	107	1	He	52.486	1.701	232731	2.74	50	105.0	90	110	
Cd 111	111	1	He	104.048	2.044	78641	2.70	100	104.0	90	110	
Sn 118	118	1	He	103.894	2.733	220208	3.51	100	103.9	90	110	
Sb 121	121	1	He	52.365	2.669	131812	3.19	50	104.7	90	110	
Ba 137	137	1	He	102.956	1.365	108151	2.48	100	103.0	90	110	
Ce 140	140	1	He	104.490	1.577	1257370	2.01	100	104.5	90	110	
Gd 157	157	1	He	100.191	4.717	257432	2.34	100	100.2	90	110	
Au 197	197	1	He	103.706	5.054	320817	2.50	100	103.7	90	110	
Tl 205	205	1	He	50.416	4.959	364154	2.50	50	100.8	90	110	
Pb206	206	1	He	101.094	5.108	261698	2.77	100	101.1	1	10000	
Pb207	207	1	He	99.873	4.804	221319	2.30	100	99.9	1	10000	
Pb 208	208	1	He	100.655	5.238	1002201	2.79	100	100.7	90	110	
U 238	238	1	He	100.121	4.770	920503	2.31	100	100.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6394763	3.56	7122799	89.78	80	120	
Sc_45	45	2	H2	36435689	5.67	38319065	95.09	80	120	
Ge_72	72	1	He	3699855	1.48	3981131	92.93	80	120	
Ge_72	72	2	H2	11438200	1.68	11928338	95.89	80	120	
In_115	115	1	He	3997166	1.54	4490435	89.02	80	120	
In_115	115	2	H2	10314804	0.67	10423245	98.96	80	120	
Tm_169	169	1	He	4080392	2.67	4215469	96.80	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	249_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:48:27-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	0.049	49.2	50	17.0	10	
Be 9	9	2	H2	-0.008	-112.5	5	27.0	1	
Na 23	23	1	He	-81.730	-1.2	24377	0.8	50	>+/-RL
Mg 24	24	1	He	-1.228	-14.8	425	11.7	50	
Al 27	27	1	He	-0.041	-1143.3	385	17.0	50	
P 31	31	1	He	-0.975	-215.7	51	34.9	50	
K 39	39	1	He	-9.790	-63.3	61124	1.3	50	
Ca 40	40	2	H2	-11.235	-0.2	28368	7.8	50	
Ti 47	47	1	He	-0.128	-40.8	9	61.9	5	
V 51	51	1	He	0.089	26.2	1011	8.8	10	
Cr 52	52	1	He	-0.098	-23.3	3338	0.6	2	
Mn 55	55	1	He	-0.022	-50.1	148	19.5	1	
Fe 56	56	1	He	-0.006	-1783.0	4619	4.4	50	
Co 59	59	1	He	-0.036	-6.2	49	19.4	1	
Ni 60	60	1	He	-0.412	-2.3	39	24.0	2	
Cu 63	63	1	He	-0.177	-9.7	286	14.5	2	
Zn 66	66	1	He	-0.792	-2.2	155	7.1	5	
As 75	75	1	He	-0.121	-38.4	334	5.3	2	
Se 78	78	2	H2	-0.024	-27.2	30	3.3	2	
Sr 88	88	1	He	-0.021	-21.6	181	9.5	5	
Mo 95	95	1	He	0.016	126.6	127	25.4	2	
Ag 107	107	1	He	0.005	181.0	81	49.5	1	
Cd 111	111	1	He	-0.004	-53.9	10	20.0	1	
Sn 118	118	1	He	0.455	12.3	1490	6.8	10	
Sb 121	121	1	He	-0.286	-8.7	290	23.1	2	
Ba 137	137	1	He	-0.004	-374.0	28	61.6	1	
Ce 140	140	1	He	-0.003	-142.2	133	35.0	5	
Gd 157	157	1	He	-0.009	-8.2	11	17.3	1	
Au 197	197	1	He	-0.027	-78.1	444	15.8	5	
Tl 205	205	1	He	-0.003	-68.5	159	10.6	1	
Pb206	206	1	He	-0.001	-544.3	247	8.9	1	
Pb207	207	1	He	-0.016	-120.9	174	24.9	1	
Pb 208	208	1	He	-0.008	-59.6	892	5.2	1	
U 238	238	1	He	0.002	108.1	256	7.9	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6431907	2.66	7122799	90.30	80	120	
Sc_45	45	2	H2	35552799	7.43	38319065	92.78	80	120	
Ge_72	72	1	He	3763227	1.28	3981131	94.53	80	120	
Ge_72	72	2	H2	11334237	5.20	11928338	95.02	80	120	
In_115	115	1	He	4119090	1.38	4490435	91.73	80	120	
In_115	115	2	H2	10299989	1.33	10423245	98.82	80	120	
Tm_169	169	1	He	4242563	0.65	4215469	100.64	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	250_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:52:04-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	101.834	3.426	21125	7.46	100	101.8	90	110	
Be 9	9	2	H2	97.185	3.813	13947	7.80	100	97.2	90	110	
Na 23	23	1	He	5212.171	4.983	3204694	3.85	5100	102.2	90	110	
Mg 24	24	1	He	5077.542	4.878	1676534	3.68	5100	99.6	90	110	
Al 27	27	1	He	5024.449	4.263	804071	3.84	5100	98.5	90	110	
P 31	31	1	He	4855.640	5.379	44700	4.58	5000	97.1	90	110	
K 39	39	1	He	5183.687	3.374	2092721	2.74	5100	101.6	90	110	
Ca 40	40	2	H2	5024.872	9.203	17506167	13.56	5100	98.5	90	110	
Ti 47	47	1	He	201.424	4.189	21295	3.67	200	100.7	90	110	
V 51	51	1	He	103.980	4.492	282825	3.40	100	104.0	90	110	
Cr 52	52	1	He	104.824	4.417	330433	3.47	100	104.8	90	110	
Mn 55	55	1	He	102.955	4.527	235802	3.62	100	103.0	90	110	
Fe 56	56	1	He	5161.206	3.499	14556106	2.78	5100	101.2	90	110	
Co 59	59	1	He	105.439	3.561	465226	2.70	100	105.4	90	110	
Ni 60	60	1	He	105.444	2.650	115217	2.19	100	105.4	90	110	
Cu 63	63	1	He	106.361	4.744	305180	3.92	100	106.4	90	110	
Zn 66	66	1	He	100.378	2.733	54735	4.32	100	100.4	90	110	
As 75	75	1	He	100.181	1.198	38872	2.80	100	100.2	90	110	
Se 78	78	2	H2	102.540	4.928	22805	6.11	100	102.5	90	110	
Sr 88	88	1	He	98.966	1.440	345235	3.06	100	99.0	90	110	
Mo 95	95	1	He	205.754	1.795	339622	3.37	200	102.9	90	110	
Ag 107	107	1	He	51.512	2.975	237694	2.84	50	103.0	90	110	
Cd 111	111	1	He	100.635	3.959	79151	3.63	100	100.6	90	110	
Sn 118	118	1	He	100.991	2.689	222777	2.86	100	101.0	90	110	
Sb 121	121	1	He	51.112	3.194	133916	3.08	50	102.2	90	110	
Ba 137	137	1	He	99.324	4.628	108577	4.50	100	99.3	90	110	
Ce 140	140	1	He	102.022	3.865	1277682	3.72	100	102.0	90	110	
Gd 157	157	1	He	98.744	3.780	262002	3.70	100	98.7	90	110	
Au 197	197	1	He	100.784	2.673	322031	2.99	100	100.8	90	110	
Tl 205	205	1	He	49.043	2.844	365874	3.28	50	98.1	90	110	
Pb206	206	1	He	98.178	2.276	262499	2.80	100	98.2	1	10000	
Pb207	207	1	He	98.305	3.507	224951	3.01	100	98.3	1	10000	
Pb 208	208	1	He	98.430	3.272	1012118	2.90	100	98.4	90	110	
U 238	238	1	He	99.234	4.216	942087	3.83	100	99.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6352244	1.61	7122799	89.18	80	120	
Sc_45	45	2	H2	36644687	4.49	38319065	95.63	80	120	
Ge_72	72	1	He	3714617	1.62	3981131	93.31	80	120	
Ge_72	72	2	H2	11590761	1.65	11928338	97.17	80	120	
In_115	115	1	He	4160131	1.02	4490435	92.64	80	120	
In_115	115	2	H2	10514433	1.05	10423245	100.87	80	120	
Tm_169	169	1	He	4211249	2.51	4215469	99.90	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	251_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:55:32-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.020	-8.8	37	4.1	10	
Be 9	9	2	H2	-0.023	-65.0	3	75.8	1	
Na 23	23	1	He	-85.162	-0.7	21756	2.9	50	>+/-RL
Mg 24	24	1	He	-1.084	-32.8	463	25.9	50	
Al 27	27	1	He	0.268	173.9	425	17.3	50	
P 31	31	1	He	-2.205	-54.1	39	28.9	50	
K 39	39	1	He	-9.846	-29.9	59642	1.6	50	
Ca 40	40	2	H2	-11.425	-2.7	28456	8.4	50	
Ti 47	47	1	He	-0.047	-228.4	17	63.5	5	
V 51	51	1	He	0.050	26.5	881	3.3	10	
Cr 52	52	1	He	-0.108	-16.7	3228	2.7	2	
Mn 55	55	1	He	-0.021	-15.5	147	6.1	1	
Fe 56	56	1	He	0.214	115.5	5127	14.0	50	
Co 59	59	1	He	-0.031	-9.0	68	17.6	1	
Ni 60	60	1	He	-0.413	-5.4	38	63.8	2	
Cu 63	63	1	He	-0.172	-8.2	295	14.7	2	
Zn 66	66	1	He	-0.809	-6.4	143	16.8	5	
As 75	75	1	He	-0.092	-58.8	339	8.7	2	
Se 78	78	2	H2	-0.009	-259.8	34	14.7	2	
Sr 88	88	1	He	-0.016	-51.3	197	14.4	5	
Mo 95	95	1	He	0.025	157.5	139	44.6	2	
Ag 107	107	1	He	0.002	199.9	69	29.6	1	
Cd 111	111	1	He	-0.003	-438.6	11	108.3	1	
Sn 118	118	1	He	0.402	6.6	1365	4.8	10	
Sb 121	121	1	He	-0.279	-7.1	304	16.0	2	
Ba 137	137	1	He	-0.008	-99.5	23	37.8	1	
Ce 140	140	1	He	0.001	842.0	174	37.6	5	
Gd 157	157	1	He	0.001	1109.3	34	65.9	1	
Au 197	197	1	He	-0.056	-47.6	337	22.4	5	
Tl 205	205	1	He	-0.002	-314.7	158	34.9	1	
Pb206	206	1	He	-0.003	-103.8	233	5.2	1	
Pb207	207	1	He	-0.003	-485.0	198	19.2	1	
Pb 208	208	1	He	-0.004	-62.2	896	4.6	1	
U 238	238	1	He	0.003	374.0	256	41.1	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6274540	1.59	7122799	88.09	80	120	
Sc_45	45	2	H2	36456075	5.03	38319065	95.14	80	120	
Ge_72	72	1	He	3691982	2.63	3981131	92.74	80	120	
Ge_72	72	2	H2	11675169	0.78	11928338	97.88	80	120	
In_115	115	1	He	4087070	0.74	4490435	91.02	80	120	
In_115	115	2	H2	10649782	1.88	10423245	102.17	80	120	
Tm_169	169	1	He	4087755	3.04	4215469	96.97	80	120	

Sample Table

Sample Name	320-22797-A-2-B MS@50
Data File Name	252SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-28T23:59:06-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	6.482	6.482	3.18	1371	4.71		2000	2000	
Be 9	9	2	H2	3.757	3.757	3.49	540	6.66		2000	2000	
B 11	11	2	H2	95.859	95.859	4.99	15008	6.97		10000	10000	
Na 23	23	1	He	154462.189	154462.189	4.95	96036675	2.95		100000	100000	>LDR
Mg 24	24	1	He	19202.554	19202.554	4.21	6554495	1.86		100000	100000	
Al 27	27	1	He	19.838	19.838	4.66	3682	1.60		100000	100000	
P 31	31	1	He	20.010	20.010	15.20	252	9.36		100000	100000	
K 39	39	1	He	5629.716	5629.716	6.55	2343208	3.72		100000	100000	
Ca 40	40	2	H2	3558.268	3558.268	7.68	12298899	11.04		100000	100000	
Ti 47	47	1	He	3.523	3.523	9.70	408	7.66		2000	2000	
V 51	51	1	He	4.867	4.867	7.23	14431	4.66		2000	2000	
Cr 52	52	1	He	3.987	3.987	4.87	16583	3.01		2000	2000	
Mn 55	55	1	He	7.989	7.989	5.90	19103	3.50		22000	22000	
Fe 56	56	1	He	19.328	19.328	6.40	61065	3.52		100000	100000	
Co 59	59	1	He	3.889	3.889	5.78	17943	3.28		2000	2000	
Ni 60	60	1	He	4.082	4.082	6.61	5095	3.69		2000	2000	
Cu 63	63	1	He	4.717	4.717	4.35	14780	3.41		2000	2000	
Zn 66	66	1	He	4.185	4.185	3.26	2758	2.32		2000	2000	
As 75	75	1	He	4.090	4.090	0.87	1893	0.76		2000	2000	
Se 78	78	2	H2	3.777	3.777	6.87	858	7.27		2000	2000	
Sr 88	88	1	He	95.164	95.164	3.47	322644	3.11		2000	2000	
Mo 95	95	1	He	4.519	4.519	3.77	7344	3.36		2000	2000	
Ag 107	107	1	He	1.006	1.006	2.78	4613	0.11		500	500	
Cd 111	111	1	He	3.793	3.793	2.00	2942	2.92		2000	2000	
Sn 118	118	1	He	4.330	4.330	2.14	9852	2.46		2000	2000	
Sb 121	121	1	He	3.907	3.907	7.29	10989	6.28		2000	2000	
Ba 137	137	1	He	7.766	7.766	1.54	8367	2.53		2000	2000	
Ce 140	140	1	He	3.996	3.996	6.35	49267	4.70		2000	2000	
Gd 157	157	1	He	3.928	3.928	4.68	10182	5.48		2000	2000	
Au 197	197	1	He	3.346	3.346	2.62	10906	3.31		2000	2000	
Tl 205	205	1	He	0.979	0.979	3.14	7279	1.82		500	500	
Pb206	206	1	He	3.830	3.830	3.63	10201	3.82		12000	12000	
Pb207	207	1	He	3.954	3.954	2.40	9005	1.96		12000	12000	
Pb 208	208	1	He	3.941	3.941	2.87	40361	3.23		12000	12000	
U 238	238	1	He	3.977	3.977	2.71	36986	3.78		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6570980	2.63	7122799	92.25	80	120	
Sc_45	45	2	H2	36336279	4.12	38319065	94.83	80	120	
Ge_72	72	1	He	3611010	0.37	3981131	90.70	80	120	
Ge_72	72	2	H2	11364673	1.26	11928338	95.27	80	120	
In_115	115	1	He	4085349	2.78	4490435	90.98	80	120	
In_115	115	2	H2	10106700	0.93	10423245	96.96	80	120	
Tm_169	169	1	He	4099502	1.50	4215469	97.25	80	120	

Sample Table

Sample Name	320-22797-A-2-C MSD@50
Data File Name	253SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:02:37-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	5.683	5.683	5.67	1206	7.01		2000	2000	
Be 9	9	2	H2	3.340	3.340	2.78	481	5.65		2000	2000	
B 11	11	2	H2	89.409	89.409	3.77	14171	5.52		10000	10000	
Na 23	23	1	He	145032.495	145032.495	3.99	86864933	4.23		100000	100000	>LDR
Mg 24	24	1	He	17433.443	17433.443	3.71	5731663	3.89		100000	100000	
Al 27	27	1	He	21.235	21.235	2.14	3768	1.47		100000	100000	
P 31	31	1	He	22.326	22.326	11.45	264	7.87		100000	100000	
K 39	39	1	He	5130.172	5130.172	3.78	2063333	4.15		100000	100000	
Ca 40	40	2	H2	3165.167	3165.167	8.48	10937329	10.84		100000	100000	
Ti 47	47	1	He	3.417	3.417	8.19	382	8.23		2000	2000	
V 51	51	1	He	4.748	4.748	3.09	13579	2.38		2000	2000	
Cr 52	52	1	He	3.740	3.740	2.08	15200	1.53		2000	2000	
Mn 55	55	1	He	7.220	7.220	5.06	16652	4.94		22000	22000	
Fe 56	56	1	He	18.787	18.787	3.37	57308	2.73		100000	100000	
Co 59	59	1	He	3.523	3.523	3.89	15681	3.98		2000	2000	
Ni 60	60	1	He	3.475	3.475	7.25	4250	6.18		2000	2000	
Cu 63	63	1	He	5.279	5.279	4.10	15830	3.29		2000	2000	
Zn 66	66	1	He	3.718	3.718	8.29	2526	5.37		2000	2000	
As 75	75	1	He	3.567	3.567	7.55	1706	4.90		2000	2000	
Se 78	78	2	H2	3.349	3.349	6.17	765	6.68		2000	2000	
Sr 88	88	1	He	83.326	83.326	4.16	283932	3.10		2000	2000	
Mo 95	95	1	He	4.071	4.071	2.38	6659	2.13		2000	2000	
Ag 107	107	1	He	0.876	0.876	4.45	4079	2.82		500	500	
Cd 111	111	1	He	3.423	3.423	4.51	2691	2.82		2000	2000	
Sn 118	118	1	He	3.898	3.898	4.71	9035	3.01		2000	2000	
Sb 121	121	1	He	3.362	3.362	6.06	9724	3.73		2000	2000	
Ba 137	137	1	He	6.753	6.753	5.56	7373	4.14		2000	2000	
Ce 140	140	1	He	3.547	3.547	4.67	44353	3.21		2000	2000	
Gd 157	157	1	He	3.586	3.586	3.62	9062	2.97		2000	2000	
Au 197	197	1	He	3.306	3.306	1.57	10512	1.14		2000	2000	
Tl 205	205	1	He	0.869	0.869	3.16	6320	2.44		500	500	
Pb206	206	1	He	3.403	3.403	2.93	8865	2.90		12000	12000	
Pb207	207	1	He	3.618	3.618	3.45	8052	2.90		12000	12000	
Pb 208	208	1	He	3.500	3.500	3.62	35051	2.92		12000	12000	
U 238	238	1	He	3.512	3.512	4.64	31866	3.98		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6324550	1.04	7122799	88.79	80	120	
Sc_45	45	2	H2	36317396	3.48	38319065	94.78	80	120	
Ge_72	72	1	He	3629594	1.09	3981131	91.17	80	120	
Ge_72	72	2	H2	11369723	1.33	11928338	95.32	80	120	
In_115	115	1	He	4139598	1.63	4490435	92.19	80	120	
In_115	115	2	H2	10080403	1.90	10423245	96.71	80	120	
Tm_169	169	1	He	3997393	0.65	4215469	94.83	80	120	

Sample Table

Sample Name	320-22797-A-1-A@50
Data File Name	254SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:06:08-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	1.559	1.559	8.13	377	13.33		2000	2000	
Be 9	9	2	H2	-0.035	-0.035	-20.63	1	100.00		2000	2000	
B 11	11	2	H2	77.494	77.494	3.16	13194	9.05		10000	10000	
Na 23	23	1	He	106098.445	106098.445	1.90	67713309	0.74		100000	100000	>LDR
Mg 24	24	1	He	11760.036	11760.036	2.95	4119253	2.65		100000	100000	
Al 27	27	1	He	3.567	3.567	2.85	1017	1.01		100000	100000	
P 31	31	1	He	12.064	12.064	6.80	181	4.46		100000	100000	
K 39	39	1	He	3736.355	3736.355	1.48	1619515	2.10		100000	100000	
Ca 40	40	2	H2	4136.553	4136.553	5.14	14898165	11.59		100000	100000	
Ti 47	47	1	He	-0.095	-0.095	-13.72	13	8.66		2000	2000	
V 51	51	1	He	2.130	2.130	3.45	6931	1.70		2000	2000	
Cr 52	52	1	He	0.053	0.053	63.01	3996	0.78		2000	2000	
Mn 55	55	1	He	4.989	4.989	2.98	12325	3.72		22000	22000	
Fe 56	56	1	He	3.899	3.899	3.95	16527	2.99		100000	100000	
Co 59	59	1	He	-0.029	-0.029	-8.17	82	12.91		2000	2000	
Ni 60	60	1	He	-0.245	-0.245	-6.83	234	6.78		2000	2000	
Cu 63	63	1	He	1.038	1.038	0.94	3990	1.78		2000	2000	
Zn 66	66	1	He	-0.129	-0.129	-43.03	519	7.00		2000	2000	
As 75	75	1	He	0.635	0.635	8.81	630	1.06		2000	2000	
Se 78	78	2	H2	-0.039	-0.039	-73.54	28	21.57		2000	2000	
Sr 88	88	1	He	71.497	71.497	4.20	253194	2.76		2000	2000	
Mo 95	95	1	He	0.024	0.024	51.69	140	11.91		2000	2000	
Ag 107	107	1	He	0.001	0.001	589.18	63	32.87		500	500	
Cd 111	111	1	He	-0.010	-0.010	-52.92	5	78.06		2000	2000	
Sn 118	118	1	He	0.249	0.249	16.49	1054	5.97		2000	2000	
Sb 121	121	1	He	-0.249	-0.249	-10.43	391	18.99		2000	2000	
Ba 137	137	1	He	3.909	3.909	5.51	4319	2.86		2000	2000	
Ce 140	140	1	He	-0.009	-0.009	-33.57	57	69.36		2000	2000	
Gd 157	157	1	He	-0.010	-0.010	-25.71	7	99.98		2000	2000	
Au 197	197	1	He	-0.148	-0.148	-3.47	56	30.20		2000	2000	
Tl 205	205	1	He	-0.017	-0.017	-6.49	52	14.75		500	500	
Pb206	206	1	He	-0.017	-0.017	-36.09	199	9.23		12000	12000	
Pb207	207	1	He	-0.030	-0.030	-40.21	138	18.32		12000	12000	
Pb 208	208	1	He	-0.023	-0.023	-20.02	720	7.70		12000	12000	
U 238	238	1	He	0.003	0.003	13.00	257	2.60		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6739585	2.53	7122799	94.62	80	120	
Sc_45	45	2	H2	37866824	6.68	38319065	98.82	80	120	
Ge_72	72	1	He	3772779	2.87	3981131	94.77	80	120	
Ge_72	72	2	H2	12044479	1.98	11928338	100.97	80	120	
In_115	115	1	He	4178217	2.64	4490435	93.05	80	120	
In_115	115	2	H2	10479649	0.85	10423245	100.54	80	120	
Tm_169	169	1	He	4136358	1.41	4215469	98.12	80	120	

Sample Table

Sample Name	320-22797-A-3-A@50
Data File Name	255SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:09:38-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	3.029	3.029	5.69	681	10.62		2000	2000	
Be 9	9	2	H2	-0.037	-0.037	-6.02	1	43.30		2000	2000	
B 11	11	2	H2	97.794	97.794	2.02	15660	6.79		10000	10000	
Na 23	23	1	He	180800.002	180800.002	0.91	115916200	4.62		100000	100000	>LDR
Mg 24	24	1	He	20610.306	20610.306	0.80	7254383	4.44		100000	100000	
Al 27	27	1	He	3.579	3.579	6.68	1025	7.77		100000	100000	
P 31	31	1	He	0.989	0.989	141.52	73	15.75		100000	100000	
K 39	39	1	He	6563.508	6563.508	0.65	2806865	4.46		100000	100000	
Ca 40	40	2	H2	6704.424	6704.424	7.59	23746589	12.67		100000	100000	
Ti 47	47	1	He	-0.114	-0.114	-29.67	11	36.74		2000	2000	
V 51	51	1	He	1.485	1.485	4.97	5096	2.26		2000	2000	
Cr 52	52	1	He	0.276	0.276	22.71	4753	2.42		2000	2000	
Mn 55	55	1	He	-0.013	-0.013	-98.90	178	21.70		22000	22000	
Fe 56	56	1	He	1.447	1.447	11.87	9249	9.10		100000	100000	
Co 59	59	1	He	-0.026	-0.026	-38.88	99	51.15		2000	2000	
Ni 60	60	1	He	0.194	0.194	22.54	745	9.44		2000	2000	
Cu 63	63	1	He	1.296	1.296	2.92	4794	3.70		2000	2000	
Zn 66	66	1	He	0.475	0.475	35.35	867	14.34		2000	2000	
As 75	75	1	He	0.180	0.180	45.29	460	4.83		2000	2000	
Se 78	78	2	H2	-0.054	-0.054	-63.62	24	30.57		2000	2000	
Sr 88	88	1	He	126.020	126.020	1.92	454208	4.98		2000	2000	
Mo 95	95	1	He	0.190	0.190	17.73	424	10.13		2000	2000	
Ag 107	107	1	He	0.002	0.002	300.84	70	45.92		500	500	
Cd 111	111	1	He	0.025	0.025	65.37	33	39.95		2000	2000	
Sn 118	118	1	He	0.251	0.251	2.79	1052	3.33		2000	2000	
Sb 121	121	1	He	-0.132	-0.132	-18.62	691	10.12		2000	2000	
Ba 137	137	1	He	1.819	1.819	3.10	2013	4.97		2000	2000	
Ce 140	140	1	He	-0.004	-0.004	-197.98	120	84.30		2000	2000	
Gd 157	157	1	He	-0.007	-0.007	-140.54	16	173.21		2000	2000	
Au 197	197	1	He	-0.150	-0.150	-6.26	52	59.31		2000	2000	
Tl 205	205	1	He	-0.017	-0.017	-25.57	59	55.85		500	500	
Pb206	206	1	He	-0.012	-0.012	-134.62	223	19.40		12000	12000	
Pb207	207	1	He	-0.027	-0.027	-42.96	151	18.37		12000	12000	
Pb 208	208	1	He	-0.024	-0.024	-27.89	736	10.34		12000	12000	
U 238	238	1	He	0.019	0.019	59.60	424	26.49		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6770157	3.83	7122799	95.05	80	120	
Sc_45	45	2	H2	37297321	5.26	38319065	97.33	80	120	
Ge_72	72	1	He	3838274	3.72	3981131	96.41	80	120	
Ge_72	72	2	H2	11430253	2.15	11928338	95.82	80	120	
In_115	115	1	He	4142926	2.12	4490435	92.26	80	120	
In_115	115	2	H2	10357674	0.89	10423245	99.37	80	120	
Tm_169	169	1	He	4317516	0.66	4215469	102.42	80	120	

Sample Report

Sample Table

Sample Name	320-22797-A-5-A@50
Data File Name	256SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:13:07-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	0.055	0.055	39.16	53	14.28		2000	2000	
Be 9	9	2	H2	-0.038	-0.038	-0.51	1	0.00		2000	2000	
B 11	11	2	H2	26.426	26.426	2.41	6158	4.41		10000	10000	
Na 23	23	1	He	-45.066	-45.066	-20.63	47215	11.10		100000	100000	
Mg 24	24	1	He	1.043	1.043	26.97	1198	6.94		100000	100000	
Al 27	27	1	He	4.118	4.118	11.65	1072	6.55		100000	100000	
P 31	31	1	He	-0.926	-0.926	-140.57	53	22.25		100000	100000	
K 39	39	1	He	-6.872	-6.872	-42.80	63054	0.85		100000	100000	
Ca 40	40	2	H2	6.479	6.479	29.07	90836	12.69		100000	100000	
Ti 47	47	1	He	-0.054	-0.054	-42.13	17	13.32		2000	2000	
V 51	51	1	He	0.694	0.694	4.99	2704	3.56		2000	2000	
Cr 52	52	1	He	-0.016	-0.016	-227.45	3640	3.33		2000	2000	
Mn 55	55	1	He	-0.018	-0.018	-84.84	160	21.69		22000	22000	
Fe 56	56	1	He	1.280	1.280	5.38	8395	1.66		100000	100000	
Co 59	59	1	He	-0.040	-0.040	-5.94	31	35.92		2000	2000	
Ni 60	60	1	He	-0.418	-0.418	-0.90	34	11.76		2000	2000	
Cu 63	63	1	He	0.885	0.885	11.83	3404	8.50		2000	2000	
Zn 66	66	1	He	-0.485	-0.485	-14.39	330	11.52		2000	2000	
As 75	75	1	He	0.002	0.002	4611.06	390	8.63		2000	2000	
Se 78	78	2	H2	-0.055	-0.055	-24.42	24	11.02		2000	2000	
Sr 88	88	1	He	0.164	0.164	13.20	853	8.06		2000	2000	
Mo 95	95	1	He	-0.045	-0.045	-17.20	26	52.73		2000	2000	
Ag 107	107	1	He	0.001	0.001	361.13	66	24.03		500	500	
Cd 111	111	1	He	-0.009	-0.009	-16.06	7	17.32		2000	2000	
Sn 118	118	1	He	0.240	0.240	10.97	1061	5.88		2000	2000	
Sb 121	121	1	He	-0.291	-0.291	-3.74	288	11.01		2000	2000	
Ba 137	137	1	He	0.008	0.008	160.74	43	35.25		2000	2000	
Ce 140	140	1	He	-0.009	-0.009	-24.86	60	48.43		2000	2000	
Gd 157	157	1	He	-0.011	-0.011	-18.30	4	114.60		2000	2000	
Au 197	197	1	He	-0.157	-0.157	-1.22	27	21.65		2000	2000	
Tl 205	205	1	He	-0.018	-0.018	-7.03	48	21.31		500	500	
Pb206	206	1	He	-0.015	-0.015	-71.29	206	11.51		12000	12000	
Pb207	207	1	He	-0.027	-0.027	-9.05	147	6.01		12000	12000	
Pb 208	208	1	He	-0.020	-0.020	-30.55	749	6.01		12000	12000	
U 238	238	1	He	-0.022	-0.022	-4.58	23	37.78		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6508120	1.02	7122799	91.37	80	120	
Sc_45	45	2	H2	36670072	5.78	38319065	95.70	80	120	
Ge_72	72	1	He	3844623	1.08	3981131	96.57	80	120	
Ge_72	72	2	H2	11641093	1.43	11928338	97.59	80	120	
In_115	115	1	He	4278097	1.34	4490435	95.27	80	120	
In_115	115	2	H2	10691474	2.06	10423245	102.57	80	120	
Tm_169	169	1	He	4162191	2.52	4215469	98.74	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	257_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:16:43-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	100.495	1.699	20799	6.72	100	100.5	90	110	
Be 9	9	2	H2	97.816	1.758	14003	6.61	100	97.8	90	110	
Na 23	23	1	He	5106.759	1.396	3278507	1.61	5100	100.1	90	110	
Mg 24	24	1	He	5023.283	3.606	1731126	3.71	5100	98.5	90	110	
Al 27	27	1	He	4954.043	3.664	827271	3.73	5100	97.1	90	110	
P 31	31	1	He	4808.743	4.183	46201	4.33	5000	96.2	90	110	
K 39	39	1	He	5079.759	5.467	2141207	5.30	5100	99.6	90	110	
Ca 40	40	2	H2	5082.753	7.372	17667117	12.42	5100	99.7	90	110	
Ti 47	47	1	He	197.416	3.481	21780	3.69	200	98.7	90	110	
V 51	51	1	He	101.489	4.878	288124	5.00	100	101.5	90	110	
Cr 52	52	1	He	101.345	3.524	333521	3.61	100	101.3	90	110	
Mn 55	55	1	He	99.615	4.105	238110	4.20	100	99.6	90	110	
Fe 56	56	1	He	4946.018	3.249	14556648	3.43	5100	97.0	90	110	
Co 59	59	1	He	102.741	2.559	473061	2.64	100	102.7	90	110	
Ni 60	60	1	He	102.299	3.530	116651	3.64	100	102.3	90	110	
Cu 63	63	1	He	101.883	3.547	305112	3.64	100	101.9	90	110	
Zn 66	66	1	He	101.392	2.203	55758	2.23	100	101.4	90	110	
As 75	75	1	He	100.698	3.781	39413	3.80	100	100.7	90	110	
Se 78	78	2	H2	102.317	2.609	22537	3.46	100	102.3	90	110	
Sr 88	88	1	He	100.008	3.707	351918	3.77	100	100.0	90	110	
Mo 95	95	1	He	205.059	3.989	341423	4.05	200	102.5	90	110	
Ag 107	107	1	He	50.501	3.819	234811	4.75	50	101.0	90	110	
Cd 111	111	1	He	100.531	3.525	79673	4.30	100	100.5	90	110	
Sn 118	118	1	He	101.215	1.924	224935	2.82	100	101.2	90	110	
Sb 121	121	1	He	50.566	2.289	133502	3.42	50	101.1	90	110	
Ba 137	137	1	He	101.050	4.004	111301	4.67	100	101.1	90	110	
Ce 140	140	1	He	101.425	3.063	1279810	3.85	100	101.4	90	110	
Gd 157	157	1	He	98.819	3.235	259063	3.27	100	98.8	90	110	
Au 197	197	1	He	100.592	2.954	317578	3.47	100	100.6	90	110	
Tl 205	205	1	He	49.670	3.481	366059	3.39	50	99.3	90	110	
Pb206	206	1	He	99.324	3.446	262391	4.04	100	99.3	1	10000	
Pb207	207	1	He	98.498	3.540	222686	2.98	100	98.5	1	10000	
Pb 208	208	1	He	99.145	3.698	1007304	3.67	100	99.1	90	110	
U 238	238	1	He	99.337	3.743	931836	3.68	100	99.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6626974	0.36	7122799	93.04	80	120	
Sc_45	45	2	H2	36566257	4.99	38319065	95.43	80	120	
Ge_72	72	1	He	3747615	0.17	3981131	94.13	80	120	
Ge_72	72	2	H2	11481519	0.93	11928338	96.25	80	120	
In_115	115	1	He	4190835	1.45	4490435	93.33	80	120	
In_115	115	2	H2	10345624	1.90	10423245	99.26	80	120	
Tm_169	169	1	He	4160971	2.83	4215469	98.71	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	258_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:20:12-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.015	-69.5	38	5.7	10	
Be 9	9	2	H2	-0.027	-26.6	2	48.0	1	
Na 23	23	1	He	-73.837	-16.8	29762	28.2	50	>+/-RL
Mg 24	24	1	He	-0.031	-5134.7	847	66.6	50	
Al 27	27	1	He	0.144	234.0	423	15.2	50	
P 31	31	1	He	0.150	1259.6	63	30.3	50	
K 39	39	1	He	-5.760	-44.9	63734	1.3	50	
Ca 40	40	2	H2	-11.647	-1.6	27585	5.8	50	
Ti 47	47	1	He	-0.061	-90.4	17	36.7	5	
V 51	51	1	He	0.334	11.7	1708	4.2	10	
Cr 52	52	1	He	-0.090	-9.4	3416	2.4	2	
Mn 55	55	1	He	-0.034	-22.7	122	17.3	1	
Fe 56	56	1	He	0.490	118.4	6162	29.7	50	
Co 59	59	1	He	-0.024	-71.6	105	75.6	1	
Ni 60	60	1	He	-0.395	-5.3	60	41.8	2	
Cu 63	63	1	He	-0.175	-10.3	298	19.9	2	
Zn 66	66	1	He	-0.780	-4.8	162	11.9	5	
As 75	75	1	He	-0.036	-206.2	369	7.1	2	
Se 78	78	2	H2	-0.035	-112.1	28	32.0	2	
Sr 88	88	1	He	0.001	4319.2	260	35.3	5	
Mo 95	95	1	He	0.023	99.0	139	28.0	2	
Ag 107	107	1	He	0.004	184.1	81	47.3	1	
Cd 111	111	1	He	0.006	193.3	19	50.6	1	
Sn 118	118	1	He	0.272	8.8	1121	5.8	10	
Sb 121	121	1	He	-0.271	-0.8	337	3.0	2	
Ba 137	137	1	He	0.001	1122.3	34	31.1	1	
Ce 140	140	1	He	0.002	505.3	199	66.1	5	
Gd 157	157	1	He	0.004	577.1	42	126.9	1	
Au 197	197	1	He	-0.056	-56.8	342	29.4	5	
Tl 205	205	1	He	-0.001	-304.0	169	14.3	1	
Pb206	206	1	He	-0.012	-134.5	210	21.5	1	
Pb207	207	1	He	-0.010	-100.8	181	13.8	1	
Pb 208	208	1	He	-0.007	-197.6	873	16.6	1	
U 238	238	1	He	-0.001	-1713.3	223	39.7	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6532536	2.25	7122799	91.71	80	120	
Sc_45	45	2	H2	36330564	3.37	38319065	94.81	80	120	
Ge_72	72	1	He	3778742	2.45	3981131	94.92	80	120	
Ge_72	72	2	H2	11603968	1.19	11928338	97.28	80	120	
In_115	115	1	He	4224060	1.30	4490435	94.07	80	120	
In_115	115	2	H2	10293730	1.28	10423245	98.76	80	120	
Tm_169	169	1	He	4099047	0.97	4215469	97.24	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	259_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:23:48-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	103.112	0.870	21267	7.88	100	103.1	90	110	
Be 9	9	2	H2	99.941	1.087	14257	7.60	100	99.9	90	110	
Na 23	23	1	He	5146.581	1.190	3229988	2.26	5100	100.9	90	110	
Mg 24	24	1	He	5095.123	1.235	1716799	2.28	5100	99.9	90	110	
Al 27	27	1	He	5020.400	0.621	819603	0.76	5100	98.4	90	110	
P 31	31	1	He	4885.347	0.771	45885	0.70	5000	97.7	90	110	
K 39	39	1	He	5130.115	1.626	2113629	2.23	5100	100.6	90	110	
Ca 40	40	2	H2	5200.488	4.146	18019410	12.11	5100	102.0	90	110	
Ti 47	47	1	He	201.267	0.449	21709	1.53	200	100.6	90	110	
V 51	51	1	He	104.112	0.342	288948	1.42	100	104.1	90	110	
Cr 52	52	1	He	103.119	0.810	331696	0.50	100	103.1	90	110	
Mn 55	55	1	He	102.019	0.201	238404	1.05	100	102.0	90	110	
Fe 56	56	1	He	5147.698	0.497	14811356	1.13	5100	100.9	90	110	
Co 59	59	1	He	103.924	0.842	467797	0.62	100	103.9	90	110	
Ni 60	60	1	He	103.358	0.899	115214	0.27	100	103.4	90	110	
Cu 63	63	1	He	103.649	1.113	303434	0.69	100	103.6	90	110	
Zn 66	66	1	He	101.690	3.537	55241	2.42	100	101.7	90	110	
As 75	75	1	He	101.378	4.176	39187	2.12	100	101.4	90	110	
Se 78	78	2	H2	104.010	3.093	23433	5.90	100	104.0	90	110	
Sr 88	88	1	He	100.156	2.645	348157	0.82	100	100.2	90	110	
Mo 95	95	1	He	207.561	3.838	341338	1.98	200	103.8	90	110	
Ag 107	107	1	He	52.910	3.105	236022	2.08	50	105.8	90	110	
Cd 111	111	1	He	104.634	2.790	79561	1.30	100	104.6	90	110	
Sn 118	118	1	He	103.966	3.100	221681	1.93	100	104.0	90	110	
Sb 121	121	1	He	52.613	2.165	133238	0.68	50	105.2	90	110	
Ba 137	137	1	He	104.392	3.432	110308	1.85	100	104.4	90	110	
Ce 140	140	1	He	105.768	2.658	1280524	1.16	100	105.8	90	110	
Gd 157	157	1	He	100.216	2.864	260569	0.93	100	100.2	90	110	
Au 197	197	1	He	102.267	3.955	320124	1.85	100	102.3	90	110	
Tl 205	205	1	He	50.540	3.799	369367	1.54	50	101.1	90	110	
Pb206	206	1	He	99.317	3.371	260172	1.60	100	99.3	1	10000	
Pb207	207	1	He	99.038	2.599	222111	1.23	100	99.0	1	10000	
Pb 208	208	1	He	99.445	3.730	1001973	1.89	100	99.4	90	110	
U 238	238	1	He	98.919	4.042	920178	2.06	100	98.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6479126	1.11	7122799	90.96	80	120	
Sc_45	45	2	H2	36473665	8.36	38319065	95.18	80	120	
Ge_72	72	1	He	3703811	2.65	3981131	93.03	80	120	
Ge_72	72	2	H2	11740615	3.47	11928338	98.43	80	120	
In_115	115	1	He	4022592	1.63	4490435	89.58	80	120	
In_115	115	2	H2	10489796	2.77	10423245	100.64	80	120	
Tm_169	169	1	He	4127465	2.21	4215469	97.91	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	260_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:27:16-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.014	-167.2	38	16.8	10	
Be 9	9	2	H2	-0.030	-15.6	2	45.8	1	
Na 23	23	1	He	-85.575	-0.6	21953	1.5	50	>+/-RL
Mg 24	24	1	He	-1.259	-7.8	413	8.1	50	
Al 27	27	1	He	-0.040	-109.7	385	2.0	50	
P 31	31	1	He	-1.127	-140.0	50	28.8	50	
K 39	39	1	He	-7.448	-21.3	61830	1.4	50	
Ca 40	40	2	H2	-11.563	-1.9	27935	7.7	50	
Ti 47	47	1	He	-0.065	-126.1	16	54.5	5	
V 51	51	1	He	0.230	13.7	1391	6.0	10	
Cr 52	52	1	He	-0.139	-42.9	3194	5.7	2	
Mn 55	55	1	He	-0.042	-14.7	101	14.6	1	
Fe 56	56	1	He	0.082	125.8	4855	6.6	50	
Co 59	59	1	He	-0.034	-13.1	57	35.7	1	
Ni 60	60	1	He	-0.420	-3.7	31	57.0	2	
Cu 63	63	1	He	-0.186	-2.4	260	4.5	2	
Zn 66	66	1	He	-0.794	-3.0	155	9.9	5	
As 75	75	1	He	-0.169	-39.4	317	10.3	2	
Se 78	78	2	H2	-0.088	-8.1	16	9.4	2	
Sr 88	88	1	He	-0.018	-25.5	193	8.4	5	
Mo 95	95	1	He	0.015	154.2	124	28.6	2	
Ag 107	107	1	He	0.005	91.6	83	25.0	1	
Cd 111	111	1	He	-0.006	-84.5	9	44.6	1	
Sn 118	118	1	He	0.229	12.6	1003	7.0	10	
Sb 121	121	1	He	-0.272	-13.6	328	28.1	2	
Ba 137	137	1	He	-0.002	-394.7	30	29.4	1	
Ce 140	140	1	He	-0.004	-93.5	123	28.5	5	
Gd 157	157	1	He	-0.003	-195.8	26	54.3	1	
Au 197	197	1	He	-0.063	-34.9	318	20.0	5	
Tl 205	205	1	He	-0.002	-187.3	161	16.6	1	
Pb206	206	1	He	-0.018	-13.4	197	4.5	1	
Pb207	207	1	He	0.005	295.8	217	16.1	1	
Pb 208	208	1	He	-0.009	-49.1	859	7.0	1	
U 238	238	1	He	-0.006	-68.4	171	20.3	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6404283	0.60	7122799	89.91	80	120	
Sc_45	45	2	H2	36398991	5.07	38319065	94.99	80	120	
Ge_72	72	1	He	3774535	2.34	3981131	94.81	80	120	
Ge_72	72	2	H2	11442983	1.65	11928338	95.93	80	120	
In_115	115	1	He	4145610	5.40	4490435	92.32	80	120	
In_115	115	2	H2	10358492	0.65	10423245	99.38	80	120	
Tm_169	169	1	He	4109409	2.36	4215469	97.48	80	120	

Sample Report

Sample Table

Sample Name	590-4453-B-6-A
Data File Name	261SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:30:52-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	114.241	114.241	3.02	25024	8.38		2000	2000	
Be 9	9	2	H2	6.085	6.085	2.72	929	9.48		2000	2000	
B 11	11	2	H2	39.739	39.739	5.27	8334	10.21		10000	10000	
Na 23	23	1	He	1120.112	1120.112	4.28	752366	1.02		100000	100000	
Mg 24	24	1	He	44442.167	44442.167	2.13	14795573	0.79		100000	100000	
Al 27	27	1	He	159958.903	159958.903	3.54	25796700	0.72		100000	100000	>LDR
P 31	31	1	He	4361.738	4361.738	3.93	40492	1.32		100000	100000	
K 39	39	1	He	7319.921	7319.921	4.53	2952394	2.15		100000	100000	
Ca 40	40	2	H2	21325.090	21325.090	6.44	78240848	12.65		100000	100000	
Ti 47	47	1	He	5574.310	5574.310	4.06	593531	1.54		2000	2000	>LDR
V 51	51	1	He	232.980	232.980	3.67	638052	0.85		2000	2000	
Cr 52	52	1	He	1044.678	1044.678	4.76	3287333	2.15		2000	2000	
Mn 55	55	1	He	5870.360	5870.360	4.97	13542503	2.15		22000	22000	
Fe 56	56	1	He	211693.897	211693.897	4.44	601676437	1.68		100000	100000	>LDR
Co 59	59	1	He	63.698	63.698	3.88	283440	1.01		2000	2000	
Ni 60	60	1	He	106.493	106.493	3.74	117306	0.87		2000	2000	
Cu 63	63	1	He	778.181	778.181	3.59	2246388	0.87		2000	2000	
Zn 66	66	1	He	396.262	396.262	3.77	208976	1.10		2000	2000	
As 75	75	1	He	647.335	647.335	2.90	242943	1.09		2000	2000	
Se 78	78	2	H2	1.471	1.471	5.25	362	7.91		2000	2000	
Sr 88	88	1	He	114.050	114.050	3.21	387904	0.68		2000	2000	
Mo 95	95	1	He	5.134	5.134	4.59	8355	2.09		2000	2000	
Ag 107	107	1	He	0.572	0.572	4.36	2587	2.54		500	500	
Cd 111	111	1	He	1.593	1.593	5.08	1214	4.79		2000	2000	
Sn 118	118	1	He	22.187	22.187	3.89	47284	0.45		2000	2000	
Sb 121	121	1	He	4.825	4.825	4.31	13019	2.72		2000	2000	
Ba 137	137	1	He	1058.369	1058.369	4.27	1108521	1.18		2000	2000	
Ce 140	140	1	He	346.153	346.153	3.74	4154893	1.05		2000	2000	
Gd 157	157	1	He	42.080	42.080	1.83	103090	0.62		2000	2000	
Au 197	197	1	He	-0.081	-0.081	-10.38	250	8.74		2000	2000	
Tl 205	205	1	He	1.207	1.207	3.28	8474	2.48		500	500	
Pb206	206	1	He	116.828	116.828	1.75	288284	0.63		12000	12000	
Pb207	207	1	He	109.359	109.359	1.50	231017	0.47		12000	12000	
Pb 208	208	1	He	113.315	113.315	1.61	1075568	0.51		12000	12000	
U 238	238	1	He	10.310	10.310	3.21	90549	2.14		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6407561	2.92	7122799	89.96	80	120	
Sc_45	45	2	H2	38721061	7.13	38319065	101.05	80	120	
Ge_72	72	1	He	3624866	2.93	3981131	91.05	80	120	
Ge_72	72	2	H2	11570521	3.24	11928338	97.00	80	120	
In_115	115	1	He	3990631	3.46	4490435	88.87	80	120	
In_115	115	2	H2	10075708	1.43	10423245	96.67	80	120	
Tm_169	169	1	He	3887280	1.22	4215469	92.21	80	120	

Sample Table

Sample Name	590-4453-B-7-A
Data File Name	262SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:34:09-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	130.845	130.845	3.21	25875	7.39		2000	2000	
Be 9	9	2	H2	5.182	5.182	1.46	715	7.60		2000	2000	
B 11	11	2	H2	49.055	49.055	2.98	8668	7.49		10000	10000	
Na 23	23	1	He	1693.197	1693.197	2.46	1042238	2.38		100000	100000	
Mg 24	24	1	He	49843.758	49843.758	0.96	15723595	1.15		100000	100000	
Al 27	27	1	He	192218.631	192218.631	2.92	29383341	3.27		100000	100000	>LDR
P 31	31	1	He	5098.159	5098.159	2.42	44853	2.57		100000	100000	
K 39	39	1	He	11580.585	11580.585	2.44	4391789	2.33		100000	100000	
Ca 40	40	2	H2	54314.702	54314.702	9.69	180104656	15.60		100000	100000	
Ti 47	47	1	He	8488.067	8488.067	2.01	856680	2.25		2000	2000	>LDR
V 51	51	1	He	236.066	236.066	2.12	612762	2.10		2000	2000	
Cr 52	52	1	He	2953.303	2953.303	0.42	8803661	0.40		2000	2000	>LDR
Mn 55	55	1	He	4344.657	4344.657	1.36	9502881	1.88		22000	22000	
Fe 56	56	1	He	166945.171	166945.171	4.34	449839893	4.60		100000	100000	>LDR
Co 59	59	1	He	63.064	63.064	2.92	266007	3.17		2000	2000	
Ni 60	60	1	He	99.933	99.933	2.14	104368	2.23		2000	2000	
Cu 63	63	1	He	1882.398	1882.398	1.52	5149021	0.87		2000	2000	
Zn 66	66	1	He	481.348	481.348	3.06	245784	2.28		2000	2000	
As 75	75	1	He	1541.235	1541.235	2.97	559711	2.06		2000	2000	
Se 78	78	2	H2	1.562	1.562	5.65	354	6.13		2000	2000	
Sr 88	88	1	He	162.203	162.203	3.33	534230	2.34		2000	2000	
Mo 95	95	1	He	4.983	4.983	4.05	7858	2.57		2000	2000	
Ag 107	107	1	He	0.924	0.924	3.39	4009	3.50		500	500	
Cd 111	111	1	He	1.917	1.917	3.15	1412	3.19		2000	2000	
Sn 118	118	1	He	23.819	23.819	1.17	49119	1.16		2000	2000	
Sb 121	121	1	He	7.338	7.338	2.69	18666	2.37		2000	2000	
Ba 137	137	1	He	1273.035	1273.035	2.77	1291199	2.87		2000	2000	
Ce 140	140	1	He	321.266	321.266	3.51	3733615	3.45		2000	2000	
Gd 157	157	1	He	36.764	36.764	1.42	92343	2.90		2000	2000	
Au 197	197	1	He	-0.092	-0.092	-2.87	221	3.79		2000	2000	
Tl 205	205	1	He	1.508	1.508	2.16	10807	1.45		500	500	
Pb206	206	1	He	110.821	110.821	3.34	280254	2.12		12000	12000	
Pb207	207	1	He	104.899	104.899	3.52	227065	1.28		12000	12000	
Pb 208	208	1	He	108.156	108.156	3.70	1052003	2.14		12000	12000	
U 238	238	1	He	7.271	7.271	2.84	65515	1.84		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6069051	0.66	7122799	85.21	80	120	
Sc_45	45	2	H2	34969745	6.42	38319065	91.26	80	120	
Ge_72	72	1	He	3509604	1.44	3981131	88.16	80	120	
Ge_72	72	2	H2	10727519	2.03	11928338	89.93	80	120	
In_115	115	1	He	3860662	0.22	4490435	85.98	80	120	
In_115	115	2	H2	9580398	1.01	10423245	91.91	80	120	
Tm_169	169	1	He	3985315	3.14	4215469	94.54	80	120	

Sample Report

Sample Table

Sample Name	590-4453-B-8-A
Data File Name	263SMPL.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:37:25-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	RL	Cal Range	LDR	QC Flag
Li 7	7	2	H2	132.428	132.428	0.28	26366	8.78		2000	2000	
Be 9	9	2	H2	5.855	5.855	5.19	815	13.98		2000	2000	
B 11	11	2	H2	52.740	52.740	3.01	9193	10.81		10000	10000	
Na 23	23	1	He	1807.238	1807.238	3.56	1134791	1.35		100000	100000	
Mg 24	24	1	He	39751.818	39751.818	3.37	12846256	1.14		100000	100000	
Al 27	27	1	He	225750.952	225750.952	3.30	35352248	1.82		100000	100000	>LDR
P 31	31	1	He	5932.865	5932.865	3.12	53464	1.33		100000	100000	
K 39	39	1	He	12497.080	12497.080	5.92	4849041	4.08		100000	100000	
Ca 40	40	2	H2	41096.021	41096.021	6.36	137248763	15.03		100000	100000	
Ti 47	47	1	He	9513.717	9513.717	4.03	983511	1.74		2000	2000	>LDR
V 51	51	1	He	250.725	250.725	3.24	666732	1.89		2000	2000	
Cr 52	52	1	He	2478.056	2478.056	3.80	7568862	2.84		2000	2000	>LDR
Mn 55	55	1	He	4618.802	4618.802	4.22	10348382	2.64		22000	22000	
Fe 56	56	1	He	152925.541	152925.541	4.40	422103445	3.16		100000	100000	>LDR
Co 59	59	1	He	55.768	55.768	3.48	240991	1.51		2000	2000	
Ni 60	60	1	He	96.262	96.262	4.08	103002	2.38		2000	2000	
Cu 63	63	1	He	1484.058	1484.058	3.53	4159347	2.32		2000	2000	
Zn 66	66	1	He	496.668	496.668	6.68	255014	3.14		2000	2000	
As 75	75	1	He	1246.295	1246.295	5.89	455305	2.37		2000	2000	
Se 78	78	2	H2	1.714	1.714	3.70	377	1.60		2000	2000	
Sr 88	88	1	He	194.888	194.888	4.86	645766	1.55		2000	2000	
Mo 95	95	1	He	4.878	4.878	5.48	7742	2.17		2000	2000	
Ag 107	107	1	He	0.940	0.940	3.25	4136	4.01		500	500	
Cd 111	111	1	He	2.251	2.251	4.21	1677	2.17		2000	2000	
Sn 118	118	1	He	25.174	25.174	3.09	52591	1.29		2000	2000	
Sb 121	121	1	He	6.733	6.733	5.41	17438	3.19		2000	2000	
Ba 137	137	1	He	1634.800	1634.800	4.56	1680290	2.54		2000	2000	
Ce 140	140	1	He	304.892	304.892	3.06	3592277	2.71		2000	2000	
Gd 157	157	1	He	36.055	36.055	3.29	89982	1.77		2000	2000	
Au 197	197	1	He	-0.086	-0.086	-17.14	239	20.33		2000	2000	
Tl 205	205	1	He	1.544	1.544	6.12	10995	4.48		500	500	
Pb206	206	1	He	119.854	119.854	3.39	301263	1.94		12000	12000	
Pb207	207	1	He	115.251	115.251	3.51	248003	2.46		12000	12000	
Pb 208	208	1	He	117.723	117.723	2.81	1138398	2.30		12000	12000	
U 238	238	1	He	8.595	8.595	3.30	76951	2.68		2000	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6220592	2.55	7122799	87.33	80	120	
Sc_45	45	2	H2	35211365	8.69	38319065	91.89	80	120	
Ge_72	72	1	He	3534323	3.68	3981131	88.78	80	120	
Ge_72	72	2	H2	10494952	5.00	11928338	87.98	80	120	
In_115	115	1	He	3914716	1.98	4490435	87.18	80	120	
In_115	115	2	H2	9412811	2.57	10423245	90.31	80	120	
Tm_169	169	1	He	3960806	2.05	4215469	93.96	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	264_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:40:41-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	96.271	3.906	19425	8.77	100	96.3	90	110	
Be 9	9	2	H2	92.706	5.345	12945	10.31	100	92.7	90	110	
Na 23	23	1	He	4999.002	5.227	3058394	3.95	5100	98.0	90	110	
Mg 24	24	1	He	5085.099	5.098	1669145	3.92	5100	99.7	90	110	
Al 27	27	1	He	4991.839	4.094	794053	3.00	5100	97.9	90	110	
P 31	31	1	He	4845.174	3.838	44342	2.72	5000	96.9	90	110	
K 39	39	1	He	5037.854	2.645	2023612	1.42	5100	98.8	90	110	
Ca 40	40	2	H2	5071.589	10.694	17190881	15.63	5100	99.4	90	110	
Ti 47	47	1	He	202.716	4.270	21302	3.07	200	101.4	90	110	
V 51	51	1	He	105.931	3.055	286451	1.92	100	105.9	90	110	
Cr 52	52	1	He	104.565	4.385	327668	3.14	100	104.6	90	110	
Mn 55	55	1	He	103.761	3.537	236259	2.45	100	103.8	90	110	
Fe 56	56	1	He	5218.176	3.540	14629398	2.46	5100	102.3	90	110	
Co 59	59	1	He	105.970	3.626	464800	2.54	100	106.0	90	110	
Ni 60	60	1	He	105.135	3.794	114185	2.56	100	105.1	90	110	
Cu 63	63	1	He	106.222	3.154	303002	1.93	100	106.2	90	110	
Zn 66	66	1	He	101.399	2.951	54806	4.20	100	101.4	90	110	
As 75	75	1	He	101.129	1.277	38899	2.90	100	101.1	90	110	
Se 78	78	2	H2	101.864	5.779	21885	7.06	100	101.9	90	110	
Sr 88	88	1	He	100.670	1.550	348133	2.80	100	100.7	90	110	
Mo 95	95	1	He	207.734	0.911	339905	2.47	200	103.9	90	110	
Ag 107	107	1	He	53.002	3.476	239111	2.22	50	106.0	90	110	
Cd 111	111	1	He	102.146	3.900	78549	2.65	100	102.1	90	110	
Sn 118	118	1	He	102.791	4.474	221672	3.66	100	102.8	90	110	
Sb 121	121	1	He	52.511	3.656	134490	2.69	50	105.0	90	110	
Ba 137	137	1	He	104.005	3.105	111161	1.92	100	104.0	90	110	
Ce 140	140	1	He	105.529	2.484	1292254	1.43	100	105.5	90	110	
Gd 157	157	1	He	100.005	0.671	259466	1.75	100	100.0	90	110	
Au 197	197	1	He	102.252	1.205	319458	2.28	100	102.3	90	110	
Tl 205	205	1	He	50.009	1.675	364798	2.82	50	100.0	90	110	
Pb206	206	1	He	100.516	1.949	262788	3.09	100	100.5	1	10000	
Pb207	207	1	He	99.651	0.693	222995	1.83	100	99.7	1	10000	
Pb 208	208	1	He	99.832	1.198	1003862	2.31	100	99.8	90	110	
U 238	238	1	He	99.976	1.397	928215	2.45	100	100.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6314735	1.22	7122799	88.66	80	120	
Sc_45	45	2	H2	35621000	4.91	38319065	92.96	80	120	
Ge_72	72	1	He	3682700	1.72	3981131	92.50	80	120	
Ge_72	72	2	H2	11195761	1.93	11928338	93.86	80	120	
In_115	115	1	He	4068839	2.36	4490435	90.61	80	120	
In_115	115	2	H2	10142582	1.82	10423245	97.31	80	120	
Tm_169	169	1	He	4116814	1.14	4215469	97.66	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	265_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:44:09-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.105	-40.3	19	46.3	10	
Be 9	9	2	H2	-0.022	-67.1	3	71.3	1	
Na 23	23	1	He	-90.618	-0.5	18735	0.7	50	>+/-RL
Mg 24	24	1	He	-0.886	-34.6	533	19.3	50	
Al 27	27	1	He	2.196	49.9	739	24.0	50	
P 31	31	1	He	-0.641	-217.3	54	22.5	50	
K 39	39	1	He	-6.184	-33.2	61806	2.3	50	
Ca 40	40	2	H2	-11.176	-3.0	28737	9.4	50	
Ti 47	47	1	He	-0.031	-184.3	19	31.6	5	
V 51	51	1	He	-0.069	-17.7	569	4.8	10	
Cr 52	52	1	He	-0.081	-7.0	3350	1.5	2	
Mn 55	55	1	He	0.021	153.9	244	30.4	1	
Fe 56	56	1	He	1.687	55.1	9348	28.5	50	
Co 59	59	1	He	-0.038	-10.3	39	43.2	1	
Ni 60	60	1	He	-0.412	-3.5	40	37.7	2	
Cu 63	63	1	He	-0.114	-7.3	464	5.8	2	
Zn 66	66	1	He	-0.846	-5.6	127	22.2	5	
As 75	75	1	He	-0.170	-16.0	316	2.1	2	
Se 78	78	2	H2	-0.079	-28.3	18	28.0	2	
Sr 88	88	1	He	-0.018	-15.3	196	7.1	5	
Mo 95	95	1	He	0.012	113.5	121	16.8	2	
Ag 107	107	1	He	0.004	63.2	79	14.8	1	
Cd 111	111	1	He	-0.001	-371.3	13	32.9	1	
Sn 118	118	1	He	0.218	3.4	990	3.5	10	
Sb 121	121	1	He	-0.277	-7.0	318	13.7	2	
Ba 137	137	1	He	-0.002	-615.0	31	34.4	1	
Ce 140	140	1	He	-0.002	-190.7	143	33.0	5	
Gd 157	157	1	He	-0.005	-94.4	19	71.3	1	
Au 197	197	1	He	-0.054	-60.5	349	30.1	5	
Tl 205	205	1	He	-0.006	-56.5	130	20.5	1	
Pb206	206	1	He	-0.013	-260.8	209	44.1	1	
Pb207	207	1	He	-0.014	-89.7	174	16.3	1	
Pb 208	208	1	He	-0.016	-95.9	788	20.1	1	
U 238	238	1	He	-0.009	-48.3	146	28.5	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6350128	1.09	7122799	89.15	80	120	
Sc_45	45	2	H2	35725201	5.70	38319065	93.23	80	120	
Ge_72	72	1	He	3779745	2.65	3981131	94.94	80	120	
Ge_72	72	2	H2	11466635	2.37	11928338	96.13	80	120	
In_115	115	1	He	4186128	2.20	4490435	93.22	80	120	
In_115	115	2	H2	10101857	1.82	10423245	96.92	80	120	
Tm_169	169	1	He	4113939	1.34	4215469	97.59	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	266_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:47:44-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	95.484	3.124	18993	8.72	100	95.5	90	110	
Be 9	9	2	H2	93.140	2.936	12815	8.66	100	93.1	90	110	
Na 23	23	1	He	5049.656	3.582	3100174	3.85	5100	99.0	90	110	
Mg 24	24	1	He	4794.009	4.109	1579751	4.87	5100	94.0	90	110	
Al 27	27	1	He	4893.271	3.237	781114	3.02	5100	95.9	90	110	
P 31	31	1	He	4740.862	3.138	43543	3.18	5000	94.8	90	110	
K 39	39	1	He	4953.997	1.979	1997878	1.92	5100	97.1	90	110	
Ca 40	40	2	H2	5101.751	10.193	17056848	15.87	5100	100.0	90	110	
Ti 47	47	1	He	196.778	2.388	20756	3.18	200	98.4	90	110	
V 51	51	1	He	103.333	3.604	280385	3.06	100	103.3	90	110	
Cr 52	52	1	He	101.611	3.081	319673	3.27	100	101.6	90	110	
Mn 55	55	1	He	101.499	3.328	231907	2.98	100	101.5	90	110	
Fe 56	56	1	He	5108.847	3.502	14370392	2.45	5100	100.2	90	110	
Co 59	59	1	He	102.981	2.846	453236	2.16	100	103.0	90	110	
Ni 60	60	1	He	103.677	2.822	113006	2.61	100	103.7	90	110	
Cu 63	63	1	He	104.011	3.887	297730	3.62	100	104.0	90	110	
Zn 66	66	1	He	98.609	1.932	53726	2.08	100	98.6	90	110	
As 75	75	1	He	99.049	3.434	38408	3.86	100	99.0	90	110	
Se 78	78	2	H2	102.807	4.837	21793	6.83	100	102.8	90	110	
Sr 88	88	1	He	98.789	1.770	344354	2.65	100	98.8	90	110	
Mo 95	95	1	He	203.550	2.529	335710	3.13	200	101.8	90	110	
Ag 107	107	1	He	51.717	2.835	232748	3.47	50	103.4	90	110	
Cd 111	111	1	He	102.206	1.844	78405	2.61	100	102.2	90	110	
Sn 118	118	1	He	102.341	2.414	220171	3.32	100	102.3	90	110	
Sb 121	121	1	He	52.046	1.944	132978	2.83	50	104.1	90	110	
Ba 137	137	1	He	102.796	2.908	109600	3.59	100	102.8	90	110	
Ce 140	140	1	He	102.947	2.200	1257411	2.84	100	102.9	90	110	
Gd 157	157	1	He	99.519	2.183	257909	2.87	100	99.5	90	110	
Au 197	197	1	He	101.541	3.047	316881	3.79	100	101.5	90	110	
Tl 205	205	1	He	49.523	2.603	360817	3.36	50	99.0	90	110	
Pb206	206	1	He	98.505	1.856	257209	2.62	100	98.5	1	10000	
Pb207	207	1	He	97.667	1.968	218306	2.72	100	97.7	1	10000	
Pb 208	208	1	He	98.585	2.106	990164	2.87	100	98.6	90	110	
U 238	238	1	He	98.530	1.328	913665	2.10	100	98.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6336047	1.85	7122799	88.95	80	120	
Sc_45	45	2	H2	35122429	5.70	38319065	91.66	80	120	
Ge_72	72	1	He	3711973	0.99	3981131	93.24	80	120	
Ge_72	72	2	H2	11045239	2.42	11928338	92.60	80	120	
In_115	115	1	He	4056792	1.04	4490435	90.34	80	120	
In_115	115	2	H2	10058948	0.20	10423245	96.50	80	120	
Tm_169	169	1	He	4111850	0.77	4215469	97.54	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	267_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:51:12-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.090	-24.7	23	25.6	10	
Be 9	9	2	H2	-0.025	-32.8	2	53.9	1	
Na 23	23	1	He	-91.144	-1.0	18073	2.4	50	>+/-RL
Mg 24	24	1	He	-1.364	-7.9	368	8.7	50	
Al 27	27	1	He	0.148	104.4	403	3.6	50	
P 31	31	1	He	-0.654	-242.3	53	24.4	50	
K 39	39	1	He	-5.475	-82.4	60912	2.7	50	
Ca 40	40	2	H2	-11.469	-0.8	27770	8.5	50	
Ti 47	47	1	He	-0.054	-72.7	17	25.0	5	
V 51	51	1	He	-0.056	-11.9	593	1.4	10	
Cr 52	52	1	He	-0.100	-33.4	3227	3.1	2	
Mn 55	55	1	He	-0.028	-30.7	130	12.2	1	
Fe 56	56	1	He	0.245	51.7	5175	6.6	50	
Co 59	59	1	He	-0.032	-8.3	64	20.5	1	
Ni 60	60	1	He	-0.422	-1.8	28	25.8	2	
Cu 63	63	1	He	-0.135	-4.8	398	7.6	2	
Zn 66	66	1	He	-0.829	-7.4	128	24.1	5	
As 75	75	1	He	-0.083	-61.2	332	4.5	2	
Se 78	78	2	H2	-0.089	-34.4	16	43.8	2	
Sr 88	88	1	He	-0.020	-49.0	177	19.0	5	
Mo 95	95	1	He	0.016	60.7	121	13.9	2	
Ag 107	107	1	He	0.000	559.4	61	22.0	1	
Cd 111	111	1	He	0.000	-1535.0	13	22.9	1	
Sn 118	118	1	He	0.227	9.7	989	4.1	10	
Sb 121	121	1	He	-0.290	-4.5	278	13.2	2	
Ba 137	137	1	He	-0.020	-45.3	11	91.7	1	
Ce 140	140	1	He	-0.004	-48.8	113	29.0	5	
Gd 157	157	1	He	-0.002	-413.7	28	66.1	1	
Au 197	197	1	He	-0.076	-35.2	277	28.9	5	
Tl 205	205	1	He	-0.006	-121.4	134	34.4	1	
Pb206	206	1	He	-0.019	-67.2	192	17.5	1	
Pb207	207	1	He	-0.018	-26.6	163	4.1	1	
Pb 208	208	1	He	-0.024	-17.1	699	4.7	1	
U 238	238	1	He	-0.005	-47.2	183	9.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6233234	3.32	7122799	87.51	80	120	
Sc_45	45	2	H2	35784173	7.51	38319065	93.38	80	120	
Ge_72	72	1	He	3580637	1.17	3981131	89.94	80	120	
Ge_72	72	2	H2	11369324	3.33	11928338	95.31	80	120	
In_115	115	1	He	4105376	5.76	4490435	91.42	80	120	
In_115	115	2	H2	10066698	2.22	10423245	96.58	80	120	
Tm_169	169	1	He	4085542	2.60	4215469	96.92	80	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV 765091
Data File Name	268_CCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:54:47-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li 7	7	2	H2	94.872	4.665	18527	9.24	100	94.9	90	110	
Be 9	9	2	H2	92.562	4.677	12502	9.22	100	92.6	90	110	
Na 23	23	1	He	4963.285	3.075	2950755	5.25	5100	97.3	90	110	
Mg 24	24	1	He	5087.207	1.793	1622126	4.12	5100	99.7	90	110	
Al 27	27	1	He	5025.425	2.269	776505	4.46	5100	98.5	90	110	
P 31	31	1	He	4936.779	1.773	43880	3.78	5000	98.7	90	110	
K 39	39	1	He	5180.420	3.145	2019657	5.35	5100	101.6	90	110	
Ca 40	40	2	H2	5099.067	9.415	16719196	14.38	5100	100.0	90	110	
Ti 47	47	1	He	204.180	1.520	20840	3.79	200	102.1	90	110	
V 51	51	1	He	106.012	2.198	278439	4.38	100	106.0	90	110	
Cr 52	52	1	He	105.398	1.725	320788	3.97	100	105.4	90	110	
Mn 55	55	1	He	103.114	1.692	228030	3.80	100	103.1	90	110	
Fe 56	56	1	He	5189.596	1.441	14130391	3.64	5100	101.8	90	110	
Co 59	59	1	He	106.112	2.413	452091	4.59	100	106.1	90	110	
Ni 60	60	1	He	107.743	2.343	113657	4.53	100	107.7	90	110	
Cu 63	63	1	He	106.545	3.890	295278	6.07	100	106.5	90	110	
Zn 66	66	1	He	101.069	3.659	53693	3.83	100	101.1	90	110	
As 75	75	1	He	100.627	4.513	38048	4.72	100	100.6	90	110	
Se 78	78	2	H2	100.646	4.915	21120	7.17	100	100.6	90	110	
Sr 88	88	1	He	100.755	4.577	342524	5.02	100	100.8	90	110	
Mo 95	95	1	He	207.426	4.792	333627	4.96	200	103.7	90	110	
Ag 107	107	1	He	50.747	2.826	231144	4.78	50	101.5	90	110	
Cd 111	111	1	He	101.180	2.076	78552	4.08	100	101.2	90	110	
Sn 118	118	1	He	100.410	3.354	218645	5.27	100	100.4	90	110	
Sb 121	121	1	He	50.515	3.753	130672	5.65	50	101.0	90	110	
Ba 137	137	1	He	100.943	2.873	108916	4.53	100	100.9	90	110	
Ce 140	140	1	He	102.904	3.069	1272007	4.65	100	102.9	90	110	
Gd 157	157	1	He	98.568	3.776	257943	4.04	100	98.6	90	110	
Au 197	197	1	He	99.415	4.826	313304	5.27	100	99.4	90	110	
Tl 205	205	1	He	49.572	3.875	364715	4.32	50	99.1	90	110	
Pb206	206	1	He	98.391	3.078	259434	3.52	100	98.4	1	10000	
Pb207	207	1	He	97.847	4.401	220849	4.63	100	97.8	1	10000	
Pb 208	208	1	He	97.912	3.245	993013	3.51	100	97.9	90	110	
U 238	238	1	He	97.994	3.533	917626	3.82	100	98.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6130143	2.36	7122799	86.06	80	120	
Sc_45	45	2	H2	34474129	4.94	38319065	89.97	80	120	
Ge_72	72	1	He	3620292	1.28	3981131	90.94	80	120	
Ge_72	72	2	H2	10931766	2.26	11928338	91.65	80	120	
In_115	115	1	He	4104834	2.17	4490435	91.41	80	120	
In_115	115	2	H2	9687436	1.73	10423245	92.94	80	120	
Tm_169	169	1	He	4152470	1.46	4215469	98.51	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB 758340
Data File Name	269_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T00:58:15-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.054	-107.8	28	37.9	10	
Be 9	9	2	H2	0.018	229.4	8	68.3	1	
Na 23	23	1	He	-90.737	-1.2	17738	0.4	50	>+/-RL
Mg 24	24	1	He	-1.132	-6.0	429	3.0	50	
Al 27	27	1	He	0.246	84.8	406	7.9	50	
P 31	31	1	He	-0.849	-177.5	49	23.8	50	
K 39	39	1	He	-7.069	-61.6	58412	0.7	50	
Ca 40	40	2	H2	-6.064	-85.7	43351	35.7	50	
Ti 47	47	1	He	-0.106	-129.1	11	124.8	5	
V 51	51	1	He	-0.048	-6.6	595	3.7	10	
Cr 52	52	1	He	-0.081	-49.6	3184	2.1	2	
Mn 55	55	1	He	-0.024	-46.8	134	15.1	1	
Fe 56	56	1	He	0.342	55.9	5264	6.8	50	
Co 59	59	1	He	-0.034	-9.1	51	23.1	1	
Ni 60	60	1	He	-0.412	-0.7	38	5.3	2	
Cu 63	63	1	He	-0.136	-13.6	381	10.0	2	
Zn 66	66	1	He	-0.791	-6.2	151	15.8	5	
As 75	75	1	He	-0.151	-26.4	313	3.4	2	
Se 78	78	2	H2	-0.044	-87.3	24	34.1	2	
Sr 88	88	1	He	-0.021	-8.2	179	3.6	5	
Mo 95	95	1	He	0.018	72.4	126	17.3	2	
Ag 107	107	1	He	0.005	185.8	79	50.8	1	
Cd 111	111	1	He	-0.009	-49.3	6	57.7	1	
Sn 118	118	1	He	0.249	11.9	1016	6.1	10	
Sb 121	121	1	He	-0.270	-7.3	323	14.9	2	
Ba 137	137	1	He	0.000	2565.1	32	33.3	1	
Ce 140	140	1	He	0.000	-1118.9	161	16.1	5	
Gd 157	157	1	He	0.000	3019.1	33	52.0	1	
Au 197	197	1	He	-0.066	-31.7	309	19.5	5	
Tl 205	205	1	He	-0.003	-135.8	154	19.5	1	
Pb206	206	1	He	-0.016	-35.6	200	8.7	1	
Pb207	207	1	He	-0.029	-36.6	139	18.2	1	
Pb 208	208	1	He	-0.025	-15.0	689	7.5	1	
U 238	238	1	He	-0.003	-223.0	201	30.8	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6039502	3.35	7122799	84.79	80	120	
Sc_45	45	2	H2	33963423	3.50	38319065	88.63	80	120	
Ge_72	72	1	He	3647694	1.39	3981131	91.62	80	120	
Ge_72	72	2	H2	10582372	1.65	11928338	88.72	80	120	
In_115	115	1	He	4010983	0.84	4490435	89.32	80	120	
In_115	115	2	H2	9654360	1.76	10423245	92.62	80	120	
Tm_169	169	1	He	4092181	2.11	4215469	97.08	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	CCVL 764635
Data File Name	270LCCV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T01:01:49-07:00
Sample Type	LLCCV
Dilution	1
Comment	LL_QSM
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	8.655	4.171	1713	6.41	10	86.5	80	120	
Be 9	9	2	H2	0.871	11.326	123	13.12	1	87.1	80	120	
B 11	11	2	H2	57.043	8.112	9458	8.24	50	114.1	80	120	
Na 23	23	1	He	-6.615	-46.896	67525	2.58	100	-6.6	80	120	> +/- 30%
Mg 24	24	1	He	88.410	4.721	29277	4.73	100	88.4	80	120	
Al 27	27	1	He	94.061	5.464	15057	5.60	100	94.1	80	120	
P 31	31	1	He	41.441	11.336	430	8.87	50	82.9	80	120	
K 39	39	1	He	76.216	6.923	91748	1.69	100	76.2	80	120	> +/- 30%
Ca 40	40	2	H2	82.930	14.615	332501	14.15	100	82.9	80	120	
Ti 47	47	1	He	5.092	2.100	547	1.88	5	101.8	80	120	
V 51	51	1	He	11.465	4.672	31079	3.93	10	114.7	80	120	
Cr 52	52	1	He	4.642	6.430	17636	5.15	5	92.8	80	120	
Mn 55	55	1	He	5.665	5.149	12839	4.77	6	94.4	80	120	
Fe 56	56	1	He	102.432	4.918	286200	4.67	100	102.4	80	120	
Co 59	59	1	He	2.913	3.816	12734	3.85	3	97.1	80	120	
Ni 60	60	1	He	2.525	9.640	3156	8.27	3	84.2	80	120	
Cu 63	63	1	He	2.864	4.961	8768	4.81	3	95.5	80	120	
Zn 66	66	1	He	11.109	8.764	6324	5.82	12	92.6	80	120	
As 75	75	1	He	2.712	10.352	1365	5.51	3	90.4	80	120	
Se 78	78	2	H2	2.914	6.665	628	5.97	3	97.1	80	120	
Sr 88	88	1	He	18.956	6.726	63845	5.03	20	94.8	80	120	
Mo 95	95	1	He	3.034	6.913	4914	4.95	3	101.1	80	120	
Ag 107	107	1	He	0.983	2.554	4423	1.02	1	98.3	80	120	
Cd 111	111	1	He	1.451	0.622	1112	2.19	1.5	96.8	80	120	
Sn 118	118	1	He	10.158	4.793	22014	5.66	10	101.6	80	120	
Sb 121	121	1	He	5.929	4.422	15841	4.80	6	98.8	80	120	
Ba 137	137	1	He	1.508	5.812	1618	5.76	1.5	100.5	80	120	
Ce 140	140	1	He	1.967	3.376	23877	4.22	2	98.3	80	120	
Gd 157	157	1	He	1.017	4.057	2578	2.73	1	101.7	80	120	
Au 197	197	1	He	4.611	6.017	14379	4.63	5	92.2	80	120	
Tl 205	205	1	He	1.497	5.172	10701	3.66	1.5	99.8	80	120	
Pb206	206	1	He	1.848	6.131	4894	4.79	2	92.4	80	120	
Pb207	207	1	He	1.935	5.674	4374	4.36	2	96.8	80	120	
Pb 208	208	1	He	1.937	5.981	19692	4.82	2	96.8	80	120	
U 238	238	1	He	0.936	5.832	8607	4.40	1	93.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6195899	0.93	7122799	86.99	80	120	
Sc_45	45	2	H2	34243085	2.29	38319065	89.36	80	120	
Ge_72	72	1	He	3578726	2.17	3981131	89.89	80	120	
Ge_72	72	2	H2	10665809	1.59	11928338	89.42	80	120	
In_115	115	1	He	4005697	2.81	4490435	89.21	80	120	
In_115	115	2	H2	9631029	1.86	10423245	92.40	80	120	
Tm_169	169	1	He	3975532	1.67	4215469	94.31	80	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	CCVL 764633
Data File Name	271LICV.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T01:05:24-07:00
Sample Type	LLICV
Dilution	1
Comment	LL_ STD
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li 7	7	2	H2	8.409	3.830	1685	9.44	10	84.1	50	150	
Be 9	9	2	H2	0.749	10.795	108	16.71	1	74.9	50	150	
B 11	11	2	H2	54.624	2.670	9265	7.89	50	109.2	50	150	
Na 23	23	1	He	-48.190	-5.716	42098	1.26	50	-96.4	50	150	> +/- 30%
Mg 24	24	1	He	44.444	6.288	14742	3.59	50	88.9	50	130	
Al 27	27	1	He	47.208	8.015	7554	6.16	50	94.4	50	150	
P 31	31	1	He	41.790	6.168	423	3.08	50	83.6	50	150	
K 39	39	1	He	30.476	24.689	72474	1.51	50	61.0	50	150	
Ca 40	40	2	H2	33.957	9.216	175900	12.49	50	67.9	50	150	
Ti 47	47	1	He	4.703	12.422	494	10.64	5	94.1	50	150	
V 51	51	1	He	9.784	6.326	25977	4.18	10	97.8	50	150	
Cr 52	52	1	He	1.515	6.316	7924	1.11	2	75.7	50	150	
Mn 55	55	1	He	0.945	3.463	2246	1.08	1	94.5	50	150	
Fe 56	56	1	He	49.020	7.192	135842	4.94	50	98.0	50	150	
Co 59	59	1	He	0.940	5.784	4141	4.81	1	94.0	50	150	
Ni 60	60	1	He	1.548	4.986	2067	2.25	2	77.4	50	150	
Cu 63	63	1	He	1.833	7.643	5741	4.52	2	91.6	50	150	
Zn 66	66	1	He	4.389	1.947	2821	3.74	5	87.8	50	150	
As 75	75	1	He	1.716	5.144	991	2.17	2	85.8	50	150	
Se 78	78	2	H2	1.818	4.488	409	6.12	2	90.9	50	150	
Sr 88	88	1	He	4.727	3.190	16012	4.78	5	94.5	50	150	
Mo 95	95	1	He	2.055	3.772	3337	2.78	2	102.7	50	150	
Ag 107	107	1	He	0.977	7.880	4474	7.86	1	97.7	50	150	
Cd 111	111	1	He	0.934	14.286	733	13.71	1	93.4	50	150	
Sn 118	118	1	He	9.921	4.399	21875	4.22	10	99.2	50	150	
Sb 121	121	1	He	1.683	6.243	5299	5.15	2	84.1	50	150	
Ba 137	137	1	He	0.877	9.591	971	9.12	1	87.7	50	150	
Ce 140	140	1	He	1.888	3.822	23314	3.64	2	94.4	50	150	
Gd 157	157	1	He	0.941	10.769	2414	12.95	1	94.1	50	150	
Au 197	197	1	He	4.461	3.299	14060	4.95	5	89.2	50	150	
Tl 205	205	1	He	0.972	1.572	7075	3.82	1	97.2	50	150	
Pb206	206	1	He	0.936	7.763	2620	8.49	1	93.6	50	150	
Pb207	207	1	He	0.974	2.600	2321	4.17	1	97.4	50	150	
Pb 208	208	1	He	0.925	3.821	9981	5.50	1	92.5	50	150	
U 238	238	1	He	0.945	4.191	8772	6.37	1	94.5	50	150	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6047930	2.54	7122799	84.91	80	120	
Sc_45	45	2	H2	34632055	6.85	38319065	90.38	80	120	
Ge_72	72	1	He	3554643	2.48	3981131	89.29	80	120	
Ge_72	72	2	H2	10771239	2.03	11928338	90.30	80	120	
In_115	115	1	He	4073577	0.35	4490435	90.72	80	120	
In_115	115	2	H2	9816023	0.57	10423245	94.17	80	120	
Tm_169	169	1	He	4010134	2.27	4215469	95.13	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	RINSE
Data File Name	272_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T01:09:00-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.115	-19.6	16	23.0	10	
Be 9	9	2	H2	-0.028	-53.3	2	103.3	1	
Na 23	23	1	He	-85.354	-0.4	20601	1.0	50	>+/-RL
Mg 24	24	1	He	-1.515	-3.2	306	5.2	50	
Al 27	27	1	He	-0.293	-88.8	321	12.0	50	
P 31	31	1	He	0.567	162.9	61	13.2	50	
K 39	39	1	He	-3.073	-32.6	59279	0.7	50	
Ca 40	40	2	H2	-9.282	-3.5	33663	7.6	50	
Ti 47	47	1	He	-0.134	-30.2	8	50.0	5	
V 51	51	1	He	-0.015	-140.3	673	7.8	10	
Cr 52	52	1	He	0.007	140.0	3409	0.8	2	
Mn 55	55	1	He	-0.038	-21.5	104	16.8	1	
Fe 56	56	1	He	-0.245	-1.4	3662	0.4	50	
Co 59	59	1	He	-0.043	-1.7	17	18.3	1	
Ni 60	60	1	He	-0.420	-2.3	29	34.4	2	
Cu 63	63	1	He	-0.164	-11.1	300	16.4	2	
Zn 66	66	1	He	-0.723	-8.7	178	15.7	5	
As 75	75	1	He	-0.137	-38.2	304	5.6	2	
Se 78	78	2	H2	-0.058	-85.7	21	48.1	2	
Sr 88	88	1	He	-0.003	-75.1	229	1.3	5	
Mo 95	95	1	He	-0.048	-2.0	19	10.2	2	
Ag 107	107	1	He	-0.004	-100.3	38	44.4	1	
Cd 111	111	1	He	-0.009	-61.1	6	66.7	1	
Sn 118	118	1	He	0.274	2.9	1037	1.7	10	
Sb 121	121	1	He	-0.274	-0.9	303	4.4	2	
Ba 137	137	1	He	-0.010	-130.7	20	66.7	1	
Ce 140	140	1	He	-0.013	-5.8	11	75.5	5	
Gd 157	157	1	He	-0.012	-6.2	1	173.2	1	
Au 197	197	1	He	-0.137	-7.5	87	34.6	5	
Tl 205	205	1	He	-0.018	-9.5	41	30.7	1	
Pb206	206	1	He	-0.033	-58.8	149	32.0	1	
Pb207	207	1	He	-0.039	-40.2	112	30.0	1	
Pb 208	208	1	He	-0.041	-17.6	512	12.4	1	
U 238	238	1	He	-0.021	-5.3	31	32.7	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5973347	0.20	7122799	83.86	80	120	
Sc_45	45	2	H2	34246303	5.00	38319065	89.37	80	120	
Ge_72	72	1	He	3485829	2.73	3981131	87.56	80	120	
Ge_72	72	2	H2	10640481	1.07	11928338	89.20	80	120	
In_115	115	1	He	3897422	3.27	4490435	86.79	80	120	
In_115	115	2	H2	9487969	1.40	10423245	91.03	80	120	
Tm_169	169	1	He	3947673	1.18	4215469	93.65	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	RINSE
Data File Name	273_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T01:12:35-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.128	-11.9	14	24.7	10	
Be 9	9	2	H2	-0.032	-16.2	1	57.3	1	
Na 23	23	1	He	-84.566	-0.6	20865	1.2	50	>+/-RL
Mg 24	24	1	He	-1.437	-6.9	327	9.2	50	
Al 27	27	1	He	-0.269	-184.5	321	22.9	50	
P 31	31	1	He	-2.093	-44.4	38	21.1	50	
K 39	39	1	He	-5.115	-63.1	58026	2.2	50	
Ca 40	40	2	H2	-9.118	-4.1	34814	10.2	50	
Ti 47	47	1	He	-0.072	-48.5	14	24.7	5	
V 51	51	1	He	-0.013	-183.2	673	8.8	10	
Cr 52	52	1	He	0.081	34.6	3594	2.1	2	
Mn 55	55	1	He	-0.028	-48.1	123	23.6	1	
Fe 56	56	1	He	-0.097	-263.5	4018	16.5	50	
Co 59	59	1	He	-0.041	-3.8	23	28.4	1	
Ni 60	60	1	He	-0.425	-1.4	23	26.2	2	
Cu 63	63	1	He	-0.158	-6.8	314	9.1	2	
Zn 66	66	1	He	-0.777	-0.5	154	2.6	5	
As 75	75	1	He	-0.145	-53.4	307	12.6	2	
Se 78	78	2	H2	-0.080	-22.4	17	23.3	2	
Sr 88	88	1	He	-0.010	-118.5	207	17.5	5	
Mo 95	95	1	He	-0.050	-14.6	16	75.3	2	
Ag 107	107	1	He	0.000	-221.0	57	0.0	1	
Cd 111	111	1	He	-0.008	-67.2	7	62.4	1	
Sn 118	118	1	He	0.205	11.1	919	6.0	10	
Sb 121	121	1	He	-0.267	-2.4	328	3.3	2	
Ba 137	137	1	He	-0.017	-32.2	13	43.3	1	
Ce 140	140	1	He	-0.009	-39.6	54	77.8	5	
Gd 157	157	1	He	-0.012	-13.4	2	173.2	1	
Au 197	197	1	He	-0.143	-5.1	67	30.4	5	
Tl 205	205	1	He	-0.018	-5.4	43	13.3	1	
Pb206	206	1	He	-0.042	-28.2	128	21.7	1	
Pb207	207	1	He	-0.032	-77.0	128	39.2	1	
Pb 208	208	1	He	-0.038	-14.4	543	7.4	1	
U 238	238	1	He	-0.022	-12.3	20	120.2	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5922105	0.18	7122799	83.14	80	120	
Sc_45	45	2	H2	34842295	6.77	38319065	90.93	80	120	
Ge_72	72	1	He	3552115	3.66	3981131	89.22	80	120	
Ge_72	72	2	H2	10954750	3.06	11928338	91.84	80	120	
In_115	115	1	He	3998091	2.44	4490435	89.04	80	120	
In_115	115	2	H2	9853802	0.89	10423245	94.54	80	120	
Tm_169	169	1	He	3973422	2.67	4215469	94.26	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	RINSE
Data File Name	274_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T01:16:11-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.111	-29.3	17	32.7	10	
Be 9	9	2	H2	-0.039	-11.8	0	173.2	1	
Na 23	23	1	He	-85.800	-1.5	20674	1.8	50	>+/-RL
Mg 24	24	1	He	-1.618	-0.3	279	1.7	50	
Al 27	27	1	He	-0.450	-19.1	302	5.9	50	
P 31	31	1	He	-1.722	-133.2	42	46.9	50	
K 39	39	1	He	-10.706	-42.6	57377	1.1	50	
Ca 40	40	2	H2	-8.996	-3.1	34982	9.4	50	
Ti 47	47	1	He	-0.109	-38.3	11	39.0	5	
V 51	51	1	He	-0.001	-2551.1	721	12.4	10	
Cr 52	52	1	He	0.013	25.1	3482	1.8	2	
Mn 55	55	1	He	-0.042	-21.8	96	19.1	1	
Fe 56	56	1	He	-0.268	-10.9	3658	2.8	50	
Co 59	59	1	He	-0.043	-1.8	16	21.7	1	
Ni 60	60	1	He	-0.426	-2.1	23	38.7	2	
Cu 63	63	1	He	-0.176	-7.4	273	11.6	2	
Zn 66	66	1	He	-0.719	-5.8	185	11.5	5	
As 75	75	1	He	-0.111	-87.4	321	11.8	2	
Se 78	78	2	H2	-0.050	-57.1	23	25.8	2	
Sr 88	88	1	He	-0.011	-82.9	209	14.0	5	
Mo 95	95	1	He	-0.047	-6.7	21	24.1	2	
Ag 107	107	1	He	0.002	50.3	67	5.0	1	
Cd 111	111	1	He	-0.008	-130.8	7	103.3	1	
Sn 118	118	1	He	0.208	11.7	923	3.8	10	
Sb 121	121	1	He	-0.274	-6.9	312	13.6	2	
Ba 137	137	1	He	-0.012	-96.0	19	62.0	1	
Ce 140	140	1	He	-0.011	-8.1	27	43.3	5	
Gd 157	157	1	He	-0.013	0.0	0	#DIV/0!	1	
Au 197	197	1	He	-0.152	-5.2	41	58.7	5	
Tl 205	205	1	He	-0.020	-7.3	30	33.3	1	
Pb206	206	1	He	-0.028	-40.1	163	18.7	1	
Pb207	207	1	He	-0.042	-20.7	107	16.5	1	
Pb 208	208	1	He	-0.044	-7.6	489	7.1	1	
U 238	238	1	He	-0.024	-2.4	9	57.3	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	6071635	1.89	7122799	85.24	80	120	
Sc_45	45	2	H2	34623995	7.03	38319065	90.36	80	120	
Ge_72	72	1	He	3574712	0.61	3981131	89.79	80	120	
Ge_72	72	2	H2	10870284	2.28	11928338	91.13	80	120	
In_115	115	1	He	3998293	2.11	4490435	89.04	80	120	
In_115	115	2	H2	9794597	0.80	10423245	93.97	80	120	
Tm_169	169	1	He	3975367	1.33	4215469	94.30	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	RINSE
Data File Name	275_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T01:19:48-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.111	-6.3	17	10.9	10	
Be 9	9	2	H2	-0.042	0.0	0	#DIV/0!	1	
Na 23	23	1	He	-85.742	-0.5	20448	0.6	50	>+/-RL
Mg 24	24	1	He	-1.536	-0.3	301	0.8	50	
Al 27	27	1	He	-0.376	-57.0	309	11.1	50	
P 31	31	1	He	-1.603	-73.6	43	23.6	50	
K 39	39	1	He	-3.914	-76.8	59161	1.4	50	
Ca 40	40	2	H2	-8.983	-6.2	34918	8.3	50	
Ti 47	47	1	He	-0.141	-8.5	7	15.7	5	
V 51	51	1	He	0.000	5375.4	715	4.9	10	
Cr 52	52	1	He	0.059	34.4	3573	2.3	2	
Mn 55	55	1	He	-0.045	-8.2	87	8.7	1	
Fe 56	56	1	He	-0.252	-12.1	3655	2.8	50	
Co 59	59	1	He	-0.045	-2.8	6	88.2	1	
Ni 60	60	1	He	-0.419	-2.2	31	32.2	2	
Cu 63	63	1	He	-0.171	-3.8	282	6.7	2	
Zn 66	66	1	He	-0.772	-7.8	157	21.1	5	
As 75	75	1	He	-0.142	-50.7	309	8.3	2	
Se 78	78	2	H2	-0.033	-44.6	27	11.8	2	
Sr 88	88	1	He	-0.010	-44.3	211	6.8	5	
Mo 95	95	1	He	-0.051	-10.4	14	58.1	2	
Ag 107	107	1	He	0.003	172.9	71	35.5	1	
Cd 111	111	1	He	-0.009	-87.1	6	100.0	1	
Sn 118	118	1	He	0.268	20.6	1039	11.0	10	
Sb 121	121	1	He	-0.265	-3.5	329	6.7	2	
Ba 137	137	1	He	-0.009	-172.8	22	70.9	1	
Ce 140	140	1	He	-0.012	-12.5	20	88.2	5	
Gd 157	157	1	He	-0.013	0.0	0	#DIV/0!	1	
Au 197	197	1	He	-0.155	-3.6	33	52.0	5	
Tl 205	205	1	He	-0.020	-12.6	28	66.1	1	
Pb206	206	1	He	-0.045	-16.4	122	16.0	1	
Pb207	207	1	He	-0.041	-24.1	111	19.5	1	
Pb 208	208	1	He	-0.043	-4.6	500	3.5	1	
U 238	238	1	He	-0.023	-6.6	14	96.1	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5993168	0.65	7122799	84.14	80	120	
Sc_45	45	2	H2	34519095	2.96	38319065	90.08	80	120	
Ge_72	72	1	He	3564080	1.36	3981131	89.52	80	120	
Ge_72	72	2	H2	11032641	0.64	11928338	92.49	80	120	
In_115	115	1	He	3948068	0.26	4490435	87.92	80	120	
In_115	115	2	H2	9829197	1.14	10423245	94.30	80	120	
Tm_169	169	1	He	4019151	0.65	4215469	95.34	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	RINSE
Data File Name	276_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T01:23:23-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.119	-8.4	16	18.0	10	
Be 9	9	2	H2	-0.034	-18.8	1	86.6	1	
Na 23	23	1	He	-84.762	-1.5	20609	2.6	50	>+/-RL
Mg 24	24	1	He	-1.583	-0.2	281	2.3	50	
Al 27	27	1	He	-0.429	-29.1	295	4.4	50	
P 31	31	1	He	-1.777	-103.5	41	41.2	50	
K 39	39	1	He	-7.971	-63.8	56574	1.2	50	
Ca 40	40	2	H2	-8.948	-3.6	34205	10.5	50	
Ti 47	47	1	He	-0.174	-12.1	4	50.0	5	
V 51	51	1	He	0.004	405.5	710	3.7	10	
Cr 52	52	1	He	0.103	16.9	3636	3.8	2	
Mn 55	55	1	He	-0.052	-14.9	72	24.7	1	
Fe 56	56	1	He	-0.232	-10.1	3638	1.5	50	
Co 59	59	1	He	-0.043	-1.6	15	20.8	1	
Ni 60	60	1	He	-0.423	-3.0	25	52.6	2	
Cu 63	63	1	He	-0.173	-6.2	274	10.3	2	
Zn 66	66	1	He	-0.758	-2.8	162	6.4	5	
As 75	75	1	He	-0.115	-29.9	314	3.6	2	
Se 78	78	2	H2	-0.057	-25.8	21	10.8	2	
Sr 88	88	1	He	-0.006	-140.1	221	12.7	5	
Mo 95	95	1	He	-0.058	0.0	3	0.0	2	
Ag 107	107	1	He	0.007	125.5	86	43.4	1	
Cd 111	111	1	He	-0.015	-18.7	2	100.0	1	
Sn 118	118	1	He	0.220	11.6	927	5.8	10	
Sb 121	121	1	He	-0.276	-7.9	300	17.5	2	
Ba 137	137	1	He	-0.013	-63.8	18	47.2	1	
Ce 140	140	1	He	-0.011	-10.8	34	39.1	5	
Gd 157	157	1	He	-0.013	0.0	0	#DIV/0!	1	
Au 197	197	1	He	-0.159	-0.7	20	16.7	5	
Tl 205	205	1	He	-0.018	-17.2	43	50.4	1	
Pb206	206	1	He	-0.046	-19.1	117	17.4	1	
Pb207	207	1	He	-0.043	-30.7	104	29.0	1	
Pb 208	208	1	He	-0.046	-4.4	466	5.7	1	
U 238	238	1	He	-0.024	-2.4	6	91.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5882499	2.39	7122799	82.59	80	120	
Sc_45	45	2	H2	33694249	7.73	38319065	87.93	80	120	
Ge_72	72	1	He	3509333	0.65	3981131	88.15	80	120	
Ge_72	72	2	H2	10597981	4.35	11928338	88.85	80	120	
In_115	115	1	He	3898251	0.19	4490435	86.81	80	120	
In_115	115	2	H2	9488648	2.57	10423245	91.03	80	120	
Tm_169	169	1	He	3919235	2.62	4215469	92.97	80	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	RINSE
Data File Name	277_CCB.d
Data Path Name	D:\102016.b\102816.b
Acq Date Time	2016-10-29T01:26:58-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	163_CCB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	RL	QC Flag
Li 7	7	2	H2	-0.113	-33.9	17	40.4	10	
Be 9	9	2	H2	-0.032	-26.0	1	78.1	1	
Na 23	23	1	He	-85.120	-0.9	20678	1.6	50	>+/-RL
Mg 24	24	1	He	-1.514	-3.0	306	6.9	50	
Al 27	27	1	He	-0.285	-64.2	321	5.8	50	
P 31	31	1	He	0.283	274.4	59	10.4	50	
K 39	39	1	He	-7.921	-38.8	57342	1.2	50	
Ca 40	40	2	H2	-8.869	-7.0	35758	12.5	50	
Ti 47	47	1	He	-0.134	-13.9	8	25.0	5	
V 51	51	1	He	0.008	126.5	731	1.5	10	
Cr 52	52	1	He	0.066	47.2	3574	2.9	2	
Mn 55	55	1	He	-0.042	-23.0	93	19.4	1	
Fe 56	56	1	He	-0.279	-23.6	3560	3.1	50	
Co 59	59	1	He	-0.042	-5.7	20	50.0	1	
Ni 60	60	1	He	-0.417	-1.3	32	16.5	2	
Cu 63	63	1	He	-0.180	-3.7	257	6.7	2	
Zn 66	66	1	He	-0.756	-4.2	165	11.2	5	
As 75	75	1	He	-0.083	-72.7	328	4.8	2	
Se 78	78	2	H2	-0.085	-5.2	16	7.1	2	
Sr 88	88	1	He	-0.001	-673.0	239	8.4	5	
Mo 95	95	1	He	-0.054	-2.4	9	21.6	2	
Ag 107	107	1	He	-0.001	-695.7	53	55.6	1	
Cd 111	111	1	He	-0.011	-60.5	5	107.9	1	
Sn 118	118	1	He	0.176	6.0	866	4.8	10	
Sb 121	121	1	He	-0.275	-4.5	311	9.0	2	
Ba 137	137	1	He	-0.027	-11.4	3	100.1	1	
Ce 140	140	1	He	-0.011	-6.3	26	32.8	5	
Gd 157	157	1	He	-0.013	0.0	0	#DIV/0!	1	
Au 197	197	1	He	-0.158	-2.4	23	49.5	5	
Tl 205	205	1	He	-0.020	-23.6	33	96.4	1	
Pb206	206	1	He	-0.047	-27.4	118	28.5	1	
Pb207	207	1	He	-0.035	-35.5	123	21.6	1	
Pb 208	208	1	He	-0.048	-6.0	453	6.4	1	
U 238	238	1	He	-0.023	-4.6	11	86.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Sc_45	45	1	He	5959371	2.64	7122799	83.67	80	120	
Sc_45	45	2	H2	34925881	6.78	38319065	91.14	80	120	
Ge_72	72	1	He	3543856	2.75	3981131	89.02	80	120	
Ge_72	72	2	H2	11087796	2.81	11928338	92.95	80	120	
In_115	115	1	He	4031446	2.15	4490435	89.78	80	120	
In_115	115	2	H2	9709449	1.10	10423245	93.15	80	120	
Tm_169	169	1	He	3996773	0.97	4215469	94.81	80	120	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
ICPMS Data Review Checklist

LIMS Batch Number: 135189	Filename: 102816	Instrument ID (circle one): MO2 (MO4)
Analyst/1st Reviewer:	Method (circle): 200.8 (6020) 6020A	QC Type (circle): (Standard) QAPP (DOD) Other
Matrix (circle): (Non-potable Water) (Solid) Leachate		Circle: Total Solubles

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. Tune					
1. Tune solution analyzed minimum of 4 times for 6020 or 5 times for 200.8		✓		✓	
2. Tune RSD <5%		✓		✓	
3. Resolution ≤ 0.9 AMU full width at 10% peak height Note: This also satisfies 200.8, 1.0 AMU at 5% peak height		✓		✓	
4. Mass calibration results within ± 0.1 amu of expected value		✓		✓	
B. Calibration/Instrument Run QC					
1. Instrument calibrated per lab SOP?		✓		✓	
2. High Level LDR Check Standard: required by DoD daily if samples analyzed > highest ICAL level 90-110% recovery		✓		✓	
3. ICB/CCB: run before samples, 10% frequency, & closing Result < RL (routine) Result < ½ RL (DoD or special project)		✓		✓	
4. ICV/CCV: frequency initial, 10%, & closing 90-110% recovery		✓		✓	If no, list details:
5. ICVL/CCVL: 70-130% recovery (6020A) Not applicable (other)		✓		✓	If no, list details:
6. ICSA/ICSAB: run before samples and every 12 hours |ICSA detections for non-spiked| <2*RL (<LOD for DoD) ICSA/ICSAB for spiked elements 80-120% *If no, list analytes:*		✓		✓	□ Results outside limits due to contamination. □ Interfering elements not present in sample at level which would result in false result ≥±1x RL. □ Concentration of affected analyte in sample is more than 10x analyte signal in ICSA.
7. RL-level check standard: 70-130% recovery (6020/6020A) 80-120% recovery (DoD or special project) CRI at 2x RL: 50-150% (other)		✓		✓	If no, list details:
B. Client Sample and QC Sample Results					
1. Samples with target element concentrations > linear range diluted and reanalyzed		✓		✓	Comments:
2. Sample IS response 30-150% of ICB IS (6020 & 6020A) 60-125% (200.8) *If no, list details:*		✓		✓	□ High IS response. Sample(s) rerun at dilution. □ Low IS response. Sample(s) reanalyzed.
C. Preparation/Matrix QC					
1. Method Blank: one per preparation batch result < RL (routine) result < ½ RL (DoD or special project) *If no, list blank ID & explain:*		✓		✓	□ No analyte > RL in associated samples □ Sample results >10x blank □ Insufficient sample for reanalysis
2. MS/MSD or MS/Dup frequency: a pair per batch (routine) a pair per 10 samples (200.8) *If no, list QC ID & explain:*		✓		✓	□ Insufficient sample

TestAmerica Sacramento **ICPMS Data Review Checklist**

LIMS Batch Number: 135189	Filename: 102816	Instrument ID: M02 (M04)

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
C. Preparation/Matrix QC (continued)					
3. MS/MSD recovery & RPD: 75-125% recovery (routine) / 70-130% recovery (200.8) / 20% RPD / project limits (other). *If no, list MS or MSD ID & explain:*		✓		✓	□ LCS acceptable – matrix effects □ Native analyte > 4x spike level □ Matrix effect and native analyte > 4x spike
4. If TCLP MS <50% and sample result 80-100% of toxicity characteristic limit, was MSA run?		✓		✓	Comments:
5. Serial dilution: required if MS/MSD fail (DoD and 6020A) / optional for 6020 / run at 5x dilution of parent sample / ≤ 10% difference. *If no, list details:*		✓		✓	□ Sample result < 50 x MDL
6. Post digestion spike: one per 200.7 batch / Required if MS/MSD fail (DoD) / 75-125% recovery. *If no, list details:*		✓		✓	

Review Items	Yes	No	2nd Rev	If No, why is data reportable?
D. Raw Data & TALS Data Entry				
1. Raw Data				
a. Unused data is clearly identified	✓		✓	
b. All crossed out data is initialed and dated	✓		✓	
c. Out of control QC is clearly identified	✓		✓	
d. Any data that has a qualifier tick is commented on with appropriate action taken	✓		✓	
e. The first page of the run includes the filename, instrument, and analyst initials/signature	✓		✓	
2. Run Log				
a. Unused data is clearly identified	✓		✓	
b. All crossed out data is initialed and dated	✓		✓	
c. Analyst initials/signature provided	✓		✓	
3. TALS Samples Tab				
a. LIMS Sample IDs / Containers are correct	✓		✓	
b. Method and matrix are correct	✓		✓	
c. Date and time match raw data	✓		✓	
d. Dilutions are correct	✓		✓	
e. Correct suffix designated (where applicable)	✓		✓	
4. TALS Worksheet Tab is complete and correct	✓		✓	
5. TALS Reagent Tab is complete and correct	✓		✓	
6. TALS QC Links Tab is correct	✓		✓	
7. TALS Sample Results Tab	✓		✓	
a. All unused data are marked Rejected or Accepted	✓		✓	
b. All reported analytes are marked Primary or Secondary	✓			

LIMS Batch Number: 135189	Filename: 102816	Instrument ID: M02 (M04)

Review Items	Yes	No	2nd Rev	If No, why is data reportable?
D. Raw Data & TALS Data Entry (Continued)				
8. TALS Batch Information Screen documentation is complete	✓		✓	
9. TALS Status set to appropriate review level	✓		✓	

Review Items	Yes	No	If No, why is data reportable?
E. Final Report and NCMs (2nd level review only)			
1. Were all job/project requirements met?	✓		
2. Results for samples and QC correct on final report?	✓		
3. Are all necessary scanned documents in TALS?	✓		
4. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?	✓		

2nd Reviewer: TM **Review Date:** 10/31/16

Comments: Reran: 162/163

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Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134289 Test: 6020

Earliest Holding Time: 172

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: DJM Date: 10/25/16

2nd Level Reviewer: [signature] Date: 10/27/16

Comments:

TestAmerica
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Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134617 Test: 6020

Earliest Holding Time: 171

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: NLH Date: 10/27/16

2nd Level Reviewer: [signature] Date: 10/31/16

Comments:

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Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134512 Test: 6020

Earliest Holding Time: 174

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: [illegible] Date: 10/26/16

2nd Level Reviewer: [illegible] Date: 10/31/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134324 Test: 6020

Earliest Holding Time: 167

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	N A	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed correctly in TALS	N A	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: N IH Date: 10/26/16

2nd Level Reviewer: LW Date: 10/31/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134515 Test: 6020

Earliest Holding Time: 167

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: D NH Date: 10/26/16

2nd Level Reviewer: LW Date: 10/31/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134513 Test: 6020

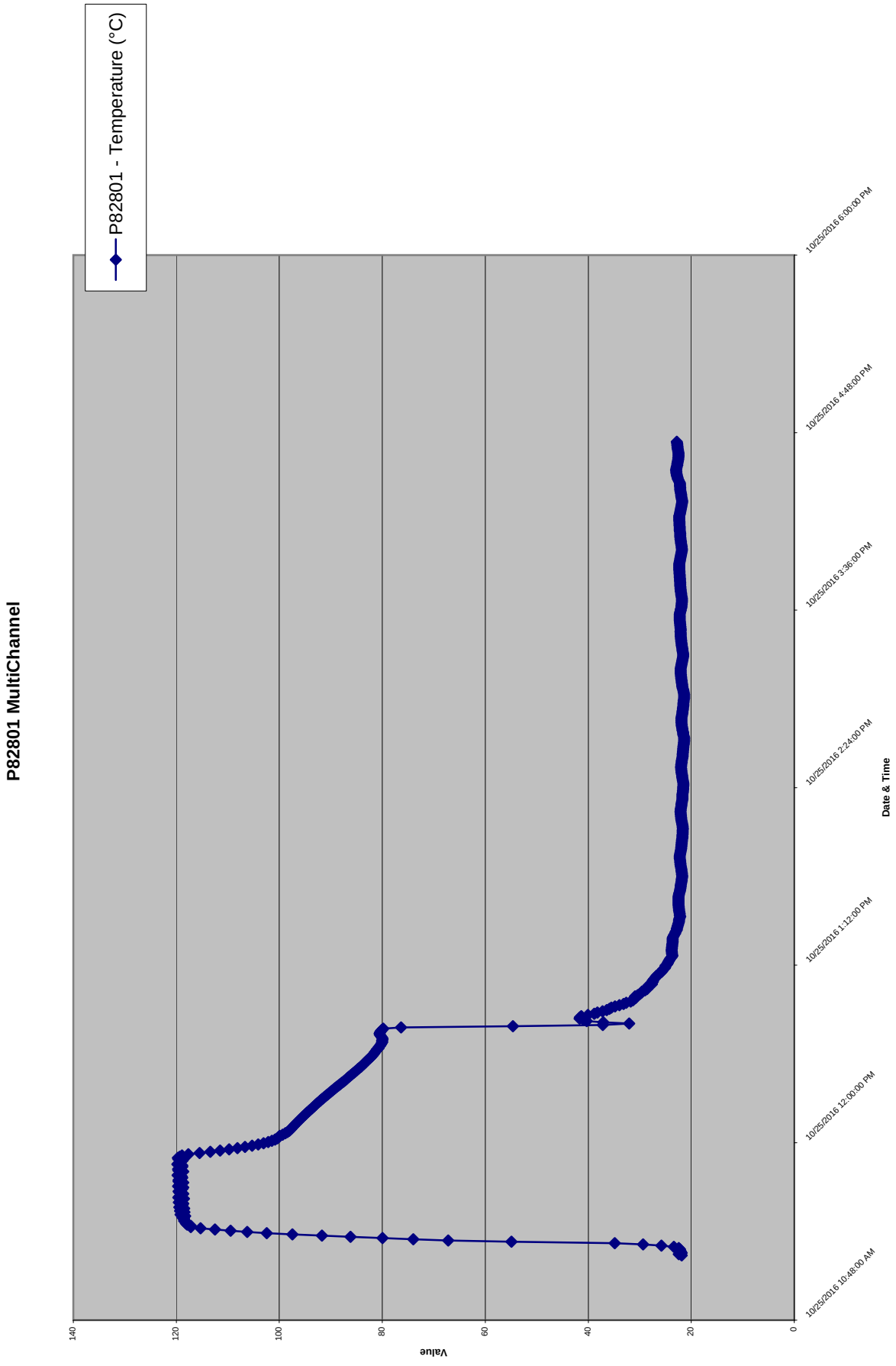
Earliest Holding Time: 167

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: N IH Date: 10/26/16

2nd Level Reviewer: [illegible] Date: 10/31/16

Comments: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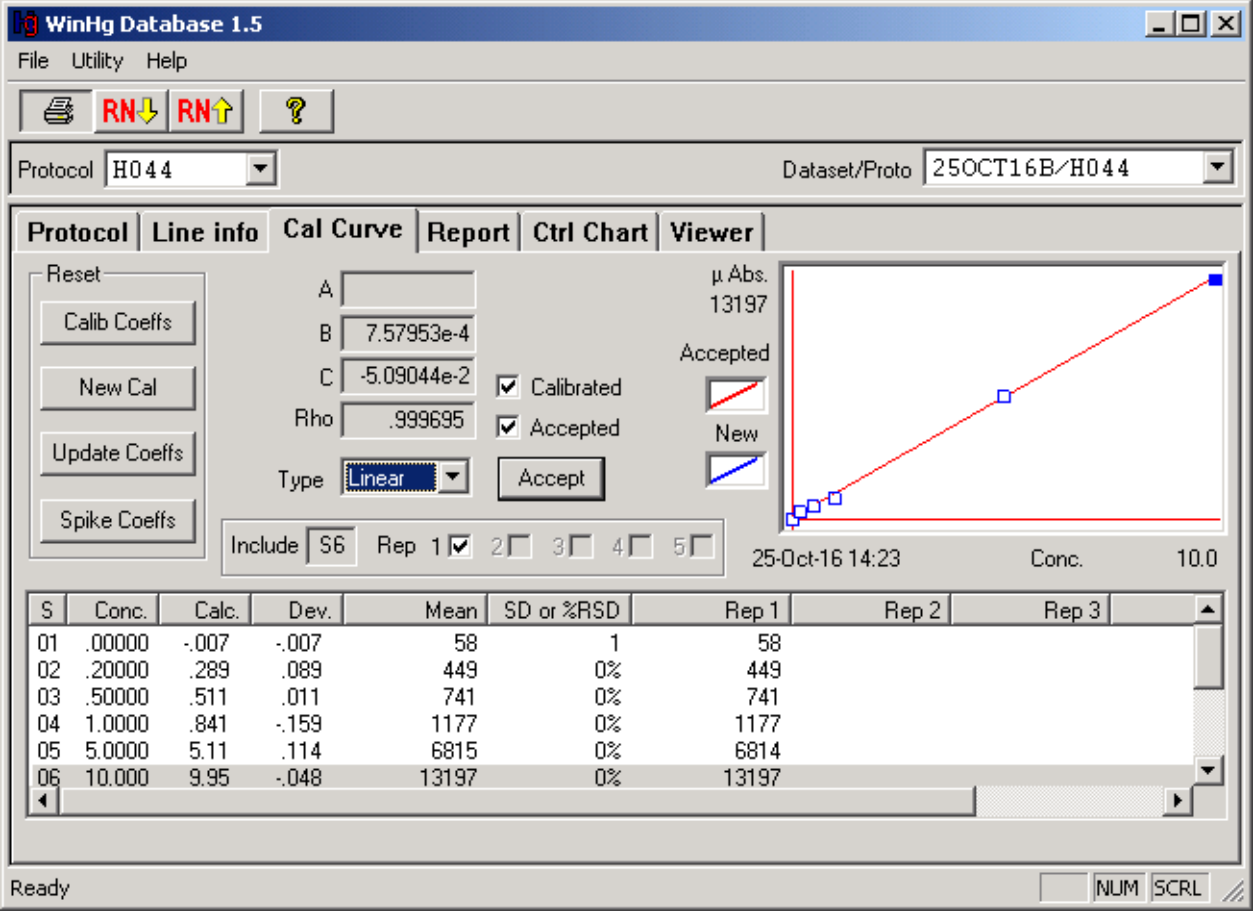
Date & Time
10/25/2016 10:48:00 AM
10/25/2016 12:00:00 PM
10/25/2016 1:12:00 PM
10/25/2016 2:24:00 PM
10/25/2016 3:36:00 PM
10/25/2016 4:48:00 PM
10/25/2016 6:00:00 PM

Device Name:	**HiTemp140**
Device Description:	**Temperature Data Logger**
Serial Number:	**P82801**
Device ID:	**MultiChannel**

Date	Time	Channel 1 Temperature (°C)
10/25/2016	11:14:16 AM	21.87
10/25/2016	11:14:46 AM	22.43
10/25/2016	11:15:16 AM	21.84
10/25/2016	11:15:46 AM	22.02
10/25/2016	11:16:16 AM	22.15
10/25/2016	11:16:46 AM	22.2
10/25/2016	11:17:16 AM	22.44
10/25/2016	11:17:46 AM	23.37
10/25/2016	11:18:16 AM	25.82
10/25/2016	11:18:46 AM	29.34
10/25/2016	11:19:16 AM	34.86
10/25/2016	11:19:46 AM	54.9
10/25/2016	11:20:16 AM	67.22
10/25/2016	11:20:46 AM	73.98
10/25/2016	11:21:16 AM	79.98
10/25/2016	11:21:46 AM	86.19
10/25/2016	11:22:16 AM	91.7
10/25/2016	11:22:46 AM	97.47
10/25/2016	11:23:16 AM	102.46
10/25/2016	11:23:46 AM	106.23
10/25/2016	11:24:16 AM	109.48
10/25/2016	11:24:46 AM	112.48
10/25/2016	11:25:16 AM	115.29
10/25/2016	11:25:46 AM	117.2
10/25/2016	11:26:16 AM	117.19
10/25/2016	11:26:46 AM	117.9
10/25/2016	11:27:16 AM	118.12
10/25/2016	11:27:46 AM	118.12
10/25/2016	11:28:16 AM	118.49
10/25/2016	11:28:46 AM	118.45
10/25/2016	11:29:16 AM	118.53
10/25/2016	11:29:46 AM	118.85
10/25/2016	11:30:16 AM	118.28
10/25/2016	11:30:46 AM	119.17
10/25/2016	11:31:16 AM	118.85
10/25/2016	11:31:46 AM	118.43
10/25/2016	11:32:16 AM	119.29
10/25/2016	11:32:46 AM	118.94
10/25/2016	11:33:16 AM	118.49
10/25/2016	11:33:46 AM	119.42
10/25/2016	11:34:16 AM	119.19
10/25/2016	11:34:46 AM	118.78
10/25/2016	11:35:16 AM	118.66
10/25/2016	11:35:46 AM	119.53
10/25/2016	11:36:16 AM	119.23

10/25/2016	11:36:46 AM	118.84
10/25/2016	11:37:16 AM	118.52
10/25/2016	11:37:46 AM	119.61
10/25/2016	11:38:16 AM	119.39
10/25/2016	11:38:46 AM	119.02
10/25/2016	11:39:16 AM	118.67
10/25/2016	11:39:46 AM	119.38
10/25/2016	11:40:16 AM	119.58
10/25/2016	11:40:46 AM	119.22
10/25/2016	11:41:16 AM	118.85
10/25/2016	11:41:46 AM	118.67
10/25/2016	11:42:16 AM	119.67
10/25/2016	11:42:46 AM	119.4
10/25/2016	11:43:16 AM	119.02
10/25/2016	11:43:46 AM	118.67
10/25/2016	11:44:16 AM	119.57
10/25/2016	11:44:46 AM	119.57
10/25/2016	11:45:16 AM	119.19
10/25/2016	11:45:46 AM	118.83
10/25/2016	11:46:16 AM	118.95
10/25/2016	11:46:46 AM	119.74
10/25/2016	11:47:16 AM	119.41
10/25/2016	11:47:46 AM	119.02
10/25/2016	11:48:16 AM	118.66
10/25/2016	11:48:46 AM	119.62
10/25/2016	11:49:16 AM	119.65
10/25/2016	11:49:46 AM	119.25
10/25/2016	11:50:16 AM	118.86
10/25/2016	11:50:46 AM	118.85
10/25/2016	11:51:16 AM	119.81
10/25/2016	11:51:46 AM	119.49
10/25/2016	11:52:16 AM	119.09
10/25/2016	11:52:46 AM	118.73
10/25/2016	11:53:16 AM	119.62
10/25/2016	11:53:46 AM	119.71
10/25/2016	11:54:16 AM	119.3
10/25/2016	11:54:46 AM	118.91
10/25/2016	11:55:16 AM	117.68
10/25/2016	11:55:46 AM	115.49
10/25/2016	11:56:16 AM	113.4
10/25/2016	11:56:46 AM	111.51
10/25/2016	11:57:16 AM	109.75
10/25/2016	11:57:46 AM	108.12
10/25/2016	11:58:16 AM	106.64
10/25/2016	11:58:46 AM	105.29
10/25/2016	11:59:16 AM	104.11
10/25/2016	11:59:46 AM	103.05
10/25/2016	12:00:16 PM	102.14
10/25/2016	12:00:46 PM	101.42
10/25/2016	12:01:16 PM	100.82
10/25/2016	12:01:46 PM	100.39
10/25/2016	12:02:16 PM	100.12

10/25/2016	12:02:46 PM	99.93
10/25/2016	12:03:16 PM	99.34
10/25/2016	12:03:46 PM	98.83
10/25/2016	12:04:16 PM	98.41
10/25/2016	12:04:46 PM	98.09
10/25/2016	12:05:16 PM	97.84
10/25/2016	12:05:46 PM	97.61
10/25/2016	12:06:16 PM	97.39
10/25/2016	12:06:46 PM	97.17
10/25/2016	12:07:16 PM	96.97
10/25/2016	12:07:46 PM	96.76
10/25/2016	12:08:16 PM	96.53
10/25/2016	12:08:46 PM	96.29
10/25/2016	12:09:16 PM	96.06
10/25/2016	12:09:46 PM	95.81
10/25/2016	12:10:16 PM	95.56
10/25/2016	12:10:46 PM	95.31
10/25/2016	12:11:16 PM	95.06
10/25/2016	12:11:46 PM	94.81
10/25/2016	12:12:16 PM	94.55
10/25/2016	12:12:46 PM	94.29
10/25/2016	12:13:16 PM	94.03
10/25/2016	12:13:46 PM	93.78
10/25/2016	12:14:16 PM	93.52
10/25/2016	12:14:46 PM	93.24


WinHg Database 1.5
File Utility Help
RN RN
Protocol H044
Dataset/Proto 25OCT16B/H044
Protocol Line info Cal Curve Report Ctrl Chart Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 7.57953e-4
C -5.09044e-2
Rho .999695
Type Linear
Calibrated
Accepted
Accept
µ Abs.
13197
Accepted
New
Include S6 Rep 1 2 3 4 5
25-Oct-16 14:23
Conc. 10.0
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 -.007 -.007 58 1 58
02 .20000 .289 .089 449 0% 449
03 .50000 .511 .011 741 0% 741
04 1.0000 .841 -.159 1177 0% 1177
05 5.0000 5.11 .114 6815 0% 6814
06 10.000 9.95 -.048 13197 0% 13197
Ready
NUM SCRL

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Standard: 1 Rep: 1 Seq: 1 14:08:33 25 Oct 16 HG

Hg .000 ppb 58

*** Standard: 2 Rep: 1 Seq: 2 14:10:54 25 Oct 16 HG

Hg .200 ppb 449

*** Standard: 3 Rep: 1 Seq: 3 14:13:06 25 Oct 16 HG

Hg .500 ppb 741

*** Standard: 4 Rep: 1 Seq: 4 14:15:16 25 Oct 16 HG

Hg 1.00 ppb 1177

*** Standard: 5 Rep: 1 Seq: 5 14:17:36 25 Oct 16 HG

Hg 5.00 ppb 6814

*** Standard: 6 Rep: 1 Seq: 6 14:19:52 25 Oct 16 HG

Hg 10.0 ppb 13197

*** Sample ID: ICV Seq: 7 14:26:31 25 Oct 16 HG
ICV 320-134327_7-A
Hg 2.32 ppb 3133

Data not use SFM 10/25/16

*** Sample ID: ICV Seq: 8 14:28:41 25 Oct 16 HG
ICV 320-134327_7-A
Hg 1.98 ppb 2683

*** Sample ID: ICB Seq: 9 14:31:02 25 Oct 16 HG
ICB 320-134327_8-A
Hg -.077 ppb -35

*** Sample ID: MB Seq: 10 14:33:07 25 Oct 16 HG
MB 320-134327_11-A
Hg -.021 ppb 39

*** Sample ID: LCS Seq: 11 14:35:39 25 Oct 16 HG
LCS 320-134327_12-A
Hg 1.10 ppb 1518

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: MB Seq: 12 14:37:53 25 Oct 16 HG
MB 320-134368_11-A

Hg	-.004	ppb	62					

*** Sample ID: LCS Seq: 13 14:40:03 25 Oct 16 HG
LCS 320-134368_12-A

Hg	1.06	ppb	1472					

*** Sample ID: LB Seq: 14 14:42:24 25 Oct 16 HG
LB 320-133510_1-D

Hg	.057	ppb	142					

*** Sample ID: MB Seq: 15 14:44:23 25 Oct 16 HG
MB 320-132903_1-B

Hg	-.005	ppb	61					

*** Sample ID: LCS Seq: 16 14:46:26 25 Oct 16 HG
LCS 320-132903_2-B

Hg	1.07	ppb	1478					

*** Sample ID: LCSD Seq: 17 14:49:19 25 Oct 16 HG
LCSD 320-132903_3-B

Hg	1.08	ppb	1494					

*** Sample ID: MB Seq: 18 14:51:21 25 Oct 16 HG
MB 320-132898_1-B

Hg	.006	ppb	75					

*** Sample ID: LCS Seq: 19 14:53:51 25 Oct 16 HG
LCS 320-132898_2-B

Hg	1.04	ppb	1433					

*** Sample ID: CCV Seq: 20 14:55:50 25 Oct 16 HG
CCV 320-134327_9-A

Hg	5.27	ppb	7026					

*** Sample ID: CCB Seq: 21 14:58:00 25 Oct 16 HG
CCB 320-134327_10-A

Hg	-.048	ppb	4					

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: LCSD Seq: 22 15:00:45 25 Oct 16 HG
LCSD 320-132898_3-B

Hg	1.01	ppb	1396					

*** Sample ID: 81-1 Seq: 23 15:02:47 25 Oct 16 HG
320-22881-M-1-A

Hg	.261	ppb	411					

*** Sample ID: SD5 Seq: 24 15:04:57 25 Oct 16 HG
SD 320-22881-M-1-A@5

Hg	.059	ppb	145					

*** Sample ID: MS Seq: 25 15:07:10 25 Oct 16 HG
320-22881-M-1-B MS

Hg	1.45	ppb	1974					

*** Sample ID: MSD Seq: 26 15:09:22 25 Oct 16 HG
320-22881-M-1-C MSD

Hg	1.43	ppb	1958					

*** Sample ID: 36-10 Seq: 27 15:11:35 25 Oct 16 HG
320-22936-O-10-A

Hg	-.036	ppb	20					

*** Sample ID: 11 Seq: 28 15:13:47 25 Oct 16 HG
320-22936-O-11-A

Hg	-.030	ppb	27					

*** Sample ID: 19-1 Seq: 29 15:15:59 25 Oct 16 HG
320-22719-A-1-AI

Hg	.007	ppb	76					

*** Sample ID: SD5 Seq: 30 15:18:05 25 Oct 16 HG
SD 22719-A-1-AI@5

Hg	.001	ppb	69					

*** Sample ID: MS Seq: 31 15:20:26 25 Oct 16 HG
320-22719-A-1-AJ MS

Hg	1.12	ppb	1542					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCV				Seq: 32	15:22:28 25 Oct 16	HG		
				CCV 320-134327_9-A				
Hg	5.47	ppb	7278					
*** Sample ID: CCB				Seq: 33	15:24:30 25 Oct 16	HG		
				CCB 320-134327_10-A				
Hg	-.020	ppb	41					
*** Sample ID: MSD				Seq: 34	15:26:31 25 Oct 16	HG		
				320-22719-A-1-AK MSD				
Hg	1.06	ppb	1470					
*** Sample ID: 2				Seq: 35	15:28:38 25 Oct 16	HG		
				320-22719-A-2-M				
Hg	-.009	ppb	55					
*** Sample ID: 3				Seq: 36	15:30:43 25 Oct 16	HG		
				320-22719-A-3-M				
Hg	-.021	ppb	40					
*** Sample ID: 4				Seq: 37	15:32:44 25 Oct 16	HG		
				320-22719-A-4-M				
Hg	.071	ppb	161					
*** Sample ID: 5				Seq: 38	15:34:49 25 Oct 16	HG		
				320-22719-A-5-M				
Hg	.129	ppb	237					
*** Sample ID: 6				Seq: 39	15:36:54 25 Oct 16	HG		
				320-22719-A-6-M				
Hg	.224	ppb	363					
*** Sample ID: 21-1				Seq: 40	15:39:07 25 Oct 16	HG		
				320-22721-A-1-E				
Hg	-.008	ppb	57					
*** Sample ID: 22-1				Seq: 41	15:41:20 25 Oct 16	HG		
				320-22722-A-1-E				
Hg	-.017	ppb	45					

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: 57-2 HCL Seq: 42 15:43:51 25 Oct 16 HG
320-22657-B-2-D

Hg	1.66	ppb	2254					

*** Sample ID: 4 Seq: 43 15:46:22 25 Oct 16 HG
320-22657-B-4-D

Hg	1.66	ppb	2253					

*** Sample ID: CCV Seq: 44 15:48:22 25 Oct 16 HG
CCV 320-134327_9-A

Hg	5.23	ppb	6969					

*** Sample ID: CCB Seq: 45 15:50:33 25 Oct 16 HG
CCB 320-134327_10-A

Hg	-.065	ppb	-18					

*** Sample ID: 6 Seq: 46 15:52:46 25 Oct 16 HG
320-22657-B-6-D

Hg	1.03	ppb	1426					

*** Sample ID: 8 Seq: 47 15:54:50 25 Oct 16 HG
320-22657-B-8-D

Hg	40.9	ppb	54071					

*** Sample ID: 10 Seq: 48 15:56:56 25 Oct 16 HG
320-22657-B-10-D

Hg	41.7	ppb	55108					

*** Sample ID: 12 Seq: 49 15:58:58 25 Oct 16 HG
320-22657-B-12-D

Hg	37.8	ppb	49895					

Data not use SFM 10/25/16

*** Sample ID: 14 Seq: 50 16:01:19 25 Oct 16 HG
320-22657-B-14-D

Hg	.057	ppb	143					

*** Sample ID: FH-1 Seq: 51 16:03:21 25 Oct 16 HG
320-22657-A-1-D

Hg	.161	ppb	280					

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: 3 Seq: 52 16:05:36 25 Oct 16 HG
320-22657-A-3-C

Hg	.042	ppb	122					

*** Sample ID: 5 Seq: 53 16:07:58 25 Oct 16 HG
320-22657-A-5-C

Hg	.076	ppb	168					

*** Sample ID: 7 Seq: 54 16:10:13 25 Oct 16 HG
320-22657-A-7-C

Hg	3.78	ppb	5051					

*** Sample ID: 9 Seq: 55 16:12:19 25 Oct 16 HG
320-22657-A-9-C

Hg	5.57	ppb	7412					

*** Sample ID: CCV Seq: 56 16:14:40 25 Oct 16 HG
CCV 320-134327_9-A

Hg	5.51	ppb	7343					

*** Sample ID: CCB Seq: 57 16:16:54 25 Oct 16 HG
CCB 320-134327_10-A

Hg	-.055	ppb	-5					

*** Sample ID: 11 Seq: 58 16:20:07 25 Oct 16 HG
320-22657-A-11-C

Hg	6.52	ppb	8667					

*** Sample ID: 13 Seq: 59 16:22:18 25 Oct 16 HG
320-22657-C-13-B

Hg	-.068	ppb	-23					

*** Sample ID: 57-8 FH@10 Seq: 60 16:24:21 25 Oct 16 HG
320-22657-B-8-D@10

Hg	3.83	ppb	5125					

*** Sample ID: 10@10 Seq: 61 16:26:34 25 Oct 16 HG
320-22657-B-10-D@10

Hg	3.92	ppb	5244					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 12@10				Seq: 62	16:28:50 25 Oct 16	HG		
				320-22657-B-12-D@10				
Hg	3.56	ppb	4766					
*** Sample ID: CCV				Seq: 63	16:30:55 25 Oct 16	HG		
				CCV 320-134327_9-A				
Hg	5.37	ppb	7149					
*** Sample ID: CCB				Seq: 64	16:33:16 25 Oct 16	HG		
				CCB 320-134327_10-A				
Hg	-.090	ppb	-51					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Mercury Data Review Checklist

LIMS Batch Number: 134475	Filename: 25OCT16B	Instrument ID (circle one): H02 (H04)
Analyst/1st Reviewer: SCM	Method (circle): 245.1 (7470A) 7471A 7471B	QC Type (circle): (Standard) QAPP (DOD) Other
Matrix (circle): (Non-potable Water) Solid (Leachate) (A)		Circle: Total Solubles

Review Items	NA	Yes	No	2nd Rev	If No, why is data reportable?
A. Calibration/Instrument Run QC					
1. Calibrated with at least 5 standards and a blank		✓		✓	
2. Linearity and intercept: r ≥ 0.995 |x-intercept| < RL or < ½ RL (special projects)		✓		✓	
4. ICV: run before samples 95-105% recovery (245.1) 90-110% recovery (7470A/7471A)		✓		✓	If no, list details:
5. CCV: 10% frequency & closing 90-110% recovery		✓		✓	If no, list details:
6. ICB/CCB: run before samples, 10% frequency, & closing Result < RL (routine) Result < ½ RL (DoD or special project)		✓		✓	If no, list details:
7. RL-level check standard Within lab historical limits (245.1) 80-120% recovery (DoD)	✓			✓	If no, list details:
B. Client Sample and QC Sample Results					
1. Samples with results > linear range diluted and reanalyzed?		✓		✓	Comments:
C. Preparation/Matrix QC					
1. Method Blank: one per preparation batch result < RL (routine) result < ½ RL (DoD or special project) *If no, list blank ID & explain:*		✓		✓	☐ No analyte > RL in associated samples ☐ Sample results >10x blank ☐ Insufficient sample for reanalysis
2. LCS one per preparation batch 80-120% recovery (routine) 85-115% recovery (245.1) *If no, list LCS ID & explain:*		✓		✓	☐ Insufficient sample for reanalysis ☐ LCS %R > QC limits & samples < RL
3. MS/MSD or MS/Dup frequency: a pair per batch (routine) a pair per 10 samples (245.1) *If no, list QC ID & explain:*		✓		✓	☐ Insufficient sample
4. MS/MSD recovery & RPD: 75-125% recovery 20% RPD *If no, list MS or MSD ID & explain:*		✓		✓	☐ LCS acceptable – matrix effects ☐ Native analyte > 4x spike level ☐ Matrix effect and native analyte > 4x spike
5. If TCLP MS <50% and sample result 80-100% of toxicity characteristic limit, was MSA run?	✓			✓	Comments:
6. Serial dilution: Required only for DoD and only if MS/MSD fail run at same dilution as parent sample ≤ 10% difference *If no, list details:*	✓			✓	☐ Sample result < 50 x RL

TestAmerica Sacramento — **Mercury Data Review Checklist**

LIMS Batch Number: 35475	Filename: 25OCT16B	Instrument ID: H04

C. Preparation/Matrix QC (continued)					
Review Items	**NA**	**Yes**	**No**	**2nd Rev**	**If No, why is data reportable?**
7. Post digestion spike: Required only for DoD and only if MS/MSD fail 80-120% recovery *If no, list details:*	✓			✓	

D. Raw Data & TALS Data Entry				
30. Raw Data				
a. Unused data is clearly identified	✓		✓	
b. All crossed out data is initialed and dated	✓		✓	
c. Out of control QC is clearly identified	✓		✓	
d. Any data that has a qualifier tick is commented on with appropriate action taken	✓		✓	
e. The first page of the run includes the filename, instrument, and analyst initials/signature	✓		✓	
31. Run Log				
a. Unused data is clearly identified	✓		✓	
b. All crossed out data is initialed and dated	✓		✓	
c. Analyst initials/signature provided	✓			
32. TALS Samples Tab				
a. LIMS Sample IDs / Containers are correct	✓		✓	
b. Method and matrix are correct	✓		✓	
c. Date and time match raw data	✓		✓	
d. Dilutions are correct	✓		✓	
e. Correct suffix designated (where applicable)	✓		✓	
33. TALS Worksheet Tab is complete and correct	✓		✓	
34. TALS Reagent Tab is complete and correct	✓		✓	
35. TALS QC Links Tab is correct	✓		✓	
36. TALS Sample Results Tab				
a. All unused data are marked Rejected or Accepted	✓		✓	
b. All reported analytes are marked Primary or Secondary	✓		✓	
37. TALS Batch Information Screen documentation is complete	✓		✓	
38. TALS Status set to appropriate review level	✓		✓	

E. Final Report and NCMs (2nd level review only)				
1. Were all job/project requirements met?	✓			
2. Results for samples and QC correct on final report?	✓			
3. Are all necessary scanned documents in TALS?	✓			
4. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?	✓			

2nd Reviewer: LW **Review Date:** 10/26/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Sacramento
Metals – Air Toxics
Preparation Log

Chemist: SFM Date: 10/14/16 Method: AT Volume

Matrix: Air in Aqueous Balance: QA-068 Last Calibrated: 5/16

	KMnO4	HCl
Filter Type/Lot #:	Fisher Brand 0.5 cm/9752724	Fisherbrand 0.5cm/9752724
Filtering Start Time:	10/19/2016 @ 9:00	~~Fisher Brand~~ 10/20/16 @ 9:45

HCl Lot #: SFM 10/14/16 163144 (SFM 10/20/16)

AT Volume Batch
FH 132898
BH 132896
$KMNO_4$ 132907
HCl 132903
Cond SFM 10/17/16 NA

Hg Prep Batch
FH 134369
BH 133301
$KMNO_4$ 133d00
HCl 134370
Cond NA

Metal Prep Batch
FH 133726
BH 133725
FH/BH NA

Lot Number	Smp #	FH Initial Volume (mL)	FH Final Volume (mL)	BH Initial Volume (mL)	$KMnO_4$ Initial Volume (mL)	$KMnO_4$ Final Volume (mL)	HCl Initial Volume (mL)	HCl Final Volume (mL)	Volume of ~~Condensate~~ Acetone (mL)
22657	1	102	150						75
	3	109	150						92
	5	109	150						89
	7	110	150						81
	9	103	150						84
	11	112	150						94
* 22657	13	112 SFM 10/14/16 295	150	SFM 10/14/16	SFM 10/14/16	SFM 10/14/16		SFM 10/14/16	99
22657	2			327	256	500		500	
	4			327	283	500		500	
	6			325	271	500		500	
	8			289	237	500		500	
	10			287	228	500		500	
	12			271	264	500		500	
* 22657	14			197	197	500		500	
		SFM 10/14/16	SFM 10/14/16				SFM 10/14/16		SFM 10/14/16

FH cooldown starts on 10/20/16 @ 1650 - 1028.
BH cooldown starts on 10/20/16 @ 1645 - 1905

* Rec'd 300mL FH, 300mL BH. Al. used 100mL of FH to combine with BH for metal analysis #A160687

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 132909 Test: AT. Volume (KMnO4)

Earliest Holding Time: 17 days

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	NA	
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed correctly in TALS	NA	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	NA	✓
All spike amounts correct and added to necessary samples and QC	NA	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: SFM Date: 10/17/16

2nd Level Reviewer: LW Date: 10/17/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 132903 Test: AT_Volume (HCl)

Earliest Holding Time: 17 days

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	NA	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	NA	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	NA	✓
All spike amounts correct and added to necessary samples and QC	NA	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	

1st Level Reviewer: SEM Date: 10/17/16

2nd Level Reviewer: [illegible] Date: 10/17/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 132898 Test: AL Volume (FH)

Earliest Holding Time: 17 days

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	NA	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed correctly in TALS	NA	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	NA	✓
All spike amounts correct and added to necessary samples and QC	NA	
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: SFM Date: 10/17/16

2nd Level Reviewer: LW Date: 10/17/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 132896 Test: AT_Volume (pH)

Earliest Holding Time: 17 days

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	NA	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	NA	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	NA	✓
All spike amounts correct and added to necessary samples and QC	NA	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: SFM Date: 10/17/16

2nd Level Reviewer: LW Date: 10/17/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134327 Test: 7470A_Prep

Earliest Holding Time: 21 days

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	NA	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: SFM Date: 10/25/16

2nd Level Reviewer: CW Date: 10/25/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 13369 Test: 7 SFM 10/25/16 HG_AT_FM_P

Earliest Holding Time: 9 days

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	NA	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: SFM Date: 10/25/16

2nd Level Reviewer: CN Date: 10/25/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 134368 Test: 7470A-Prep

Earliest Holding Time: 15 days

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	NA	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: SFM Date: 10/28/16

2nd Level Reviewer: CN Date: 10/25/16

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s): 135370 Test: HG_BH-HCL_P

Earliest Holding Time: 9 days

Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	NA	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed correctly in TALS	✓	✓
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Batch Information	**1st Level Reviewer**	**2nd Level Reviewer**
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1st Level Reviewer: SFM Date: 10/25/16

2nd Level Reviewer: [illegible] Date: 10/25/16

Comments:

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-22881-1

SDG No.:

Project: JBER Soil/Water

Client Sample ID	Lab Sample ID
JBER-WW001	320-22881-1

Comments:

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 320-22881-1

SDG No.:

Project: JBER Soil/Water

Client Sample ID	Lab Sample ID
JBER-WW001	320-22881-1

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: JBER-WW001 Lab Sample ID: 320-22881-1

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG ID.:

Matrix: Water Date Sampled: 10/20/2016 10:40

Reporting Basis: WET Date Received: 10/21/2016 09:10

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
pH adj. to 25 deg C	7.4	0.1	0.1	0.1	SU		HF	1	9040C

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: JBER-WW001 Lab Sample ID: 320-22881-1

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG ID.:

Matrix: Water Date Sampled: 10/20/2016 10:40

Reporting Basis: WET Date Received: 10/21/2016 09:10

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	0.0025	0.010	0.0050	0.0020	mg/L	J		1	9012B
Sulfide	0.80	4.0	1.9	0.79	mg/L	J		1	9034
Flashpoint	>160	1.00	1.00	1.00	Degrees F			1	1010A

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Analyst: CFR Batch Start Date: 10/24/2016

Reporting Units: SU Analytical Batch No.: 134067

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	09:10	pH adj. to 25 deg C	8.0	8.00	100	99-101		WC-PH-ICV_00022
12	CCV	09:20	pH adj. to 25 deg C	7.0	7.00	100	99-101		WC-PH-L3_00012
14	CCV	10:28	pH adj. to 25 deg C	7.0	7.00	100	99-101		WC-PH-L3_00012

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Analyst: JML Batch Start Date: 11/03/2016

Reporting Units: mg/L Analytical Batch No.: 349678

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	08:39	Cyanide, Total	0.0947	0.100	95	90-110		CN ICV Daily_00936
15	ICB	08:41	Cyanide, Total	0.0050				U	
44	CCV	09:24	Cyanide, Total	0.198	0.200	99	90-110		CN CAL 1 ppm_01171
45	CCB	09:26	Cyanide, Total	0.0050				U	
59	CCV	09:47	Cyanide, Total	0.199	0.200	100	90-110		CN CAL 1 ppm_01171
60	CCB	09:48	Cyanide, Total	0.0050				U	
74	CCV	10:09	Cyanide, Total	0.204	0.200	102	90-110		CN CAL 1 ppm_01171
75	CCB	10:11	Cyanide, Total	0.0050				U	
88	CCV	10:30	Cyanide, Total	0.202	0.200	101	90-110		CN CAL 1 ppm_01171
89	CCB	10:36	Cyanide, Total	0.0050				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 350782	Date: 11/10/2016 09:30						
1010A	MB 280-350782/3	Flashpoint	>160		Degrees F	1.00	1
Batch ID: 349678	Date: 11/03/2016 09:35	Prep Batch: 349597	Date: 11/03/2016 05:41				
9012B	MB 280-349597/5-A	Cyanide, Total	0.00208	J	mg/L	0.010	1
Batch ID: 348390	Date: 10/26/2016 17:18	Prep Batch: 348387	Date: 10/26/2016 17:14				
9034	MB 280-348387/2-A	Sulfide	1.9	U	mg/L	4.0	1

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 134067		Date: 10/24/2016 09:10									
						LCS Source: WC-PH-ICV_00022					
9040C	LCS 320-134067/2	pH adj. to 25 deg C	8.0		SU	8.00	100	98-102			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 350782	Date: 11/10/2016 09:30										
						LCS Source: Flash Point_00077					
1010A	LCS 280-350782/1	Flashpoint	81.00		Degrees F	81.0	100	97.5-102	2	10	
Batch ID: 349678	Date: 11/03/2016 10:24	Prep Batch: 349597	Date: 11/03/2016 05:41								
						LCS Source: CN ICV Int_00406					
9012B	LCS 280-349597/3-A	Cyanide, Total	0.0952		mg/L	0.100	95	83-116	1	20	
Batch ID: 348390	Date: 10/26/2016 17:18	Prep Batch: 348387	Date: 10/26/2016 17:14								
						LCS Source: SFD CAL INT_01290					
9034	LCS 280-348387/1-A	Sulfide	20.4		mg/L	20.0	102	50-106			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 350782	Date: 11/10/2016 09:30										
						LCSD Source: Flash Point_00077					
1010A	LCSD 280-350782/2	Flashpoint	83.00		Degrees F	81.0	102	97.5-102	2	10	
Batch ID: 349678	Date: 11/03/2016 10:26	Prep Batch: 349597	Date: 11/03/2016 05:41								
						LCSD Source: CN ICV Int_00406					
9012B	LCSD 280-349597/4-A	Cyanide, Total	0.0938		mg/L	0.100	94	83-116	1	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LOW LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 349678	Date: 11/03/2016 09:30		Prep Batch: 349597			Date: 11/03/2016 05:41					
						LCS Source: CN 10ppm_00227					
9012B	LLCS 280-349597/2-A	Cyanide, Total	0.0969		mg/L	0.100	97	44-167			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
HIGH LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 349678	Date: 11/03/2016 09:29		Prep Batch: 349597			Date: 11/03/2016 05:41					
						LCS Source: CN 10ppm_00227					
9012B	HLCS 280-349597/1-A	Cyanide, Total	0.379		mg/L	0.400	95	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 9040C DL Date: 01/01/2012 14:30

Analyte	Wavelength/ Mass	LOQ (SU)	DL (SU)
pH adj. to 25 deg C		0.1	0.1

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 9040C XMDL Date: 01/01/2012 15:02

Analyte	Wavelength/ Mass	XRL (SU)	XMDL (SU)
pH adj. to 25 deg C		0.1	0.1

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: WC_Alp 1

Method: 9012B DL Date: 02/16/2014 00:00

Prep Method: 9012B

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Cyanide, Total		0.01	0.002

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: WC_Alp 1

Method: 9012B XMDL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Cyanide, Total		0.01	0.002

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: NoEquip

Method: 9034 DL Date: 03/28/2011 13:37

Prep Method: 9030B

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Sulfide		4	0.793

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: NoEquip

Method: 9034 XMDL Date: 03/28/2011 13:37

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Sulfide		4	0.793

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 1010A LOQ Date: 11/01/2009 00:00

Analyte	Wavelength/ Mass	LOQ (Degrees F)	
Flashpoint		1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 320-22881-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 1010A XRL Date: 11/01/2009 00:00

Analyte	Wavelength/ Mass	XRL (Degrees F)	
Flashpoint		1	

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
HLCS 280-349597/1-A	11/03/2016 05:41	349597		50	50
LLCS 280-349597/2-A	11/03/2016 05:41	349597		50	50
LCS 280-349597/3-A	11/03/2016 05:41	349597		50	50
LCSD 280-349597/4-A	11/03/2016 05:41	349597		50	50
MB 280-349597/5-A	11/03/2016 05:41	349597		50	50
320-22881-1	11/03/2016 05:41	349597		50	50

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Prep Method: 9030B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
LCS 280-348387/1-A	10/26/2016 17:14	348387		50	50
MB 280-348387/2-A	10/26/2016 17:14	348387		50	50
320-22881-1	10/26/2016 17:14	348387		50	50

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: 9040C

Start Date: 10/24/2016 09:10 End Date: 10/24/2016 10:28

Lab Sample Id	D/F	Type	Time	Analytes																								
				pH																								
ICV 320-134067/1	1		09:10	X																								
LCS 320-134067/2	1	T	09:10	X																								
320-22881-1	1	T	09:10	X																								
ZZZZZZ			09:10																									
ZZZZZZ			09:10																									
ZZZZZZ			09:10																									
ZZZZZZ			09:10																									
ZZZZZZ			09:10																									
ZZZZZZ			09:10																									
ZZZZZZ			09:10																									
ZZZZZZ			09:20																									
CCV 320-134067/12	1		09:20	X																								
ZZZZZZ			09:20																									
CCV 320-134067/14	1		10:28	X																								

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/03/2016 08:20 End Date: 11/03/2016 10:37

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
ZZZZZZ			08:20																									
ZZZZZZ			08:21																									
ZZZZZZ			08:23																									
ZZZZZZ			08:24																									
IC 280-349678/5			08:26	X																								
IC 280-349678/6			08:27	X																								
IC 280-349678/7			08:29	X																								
IC 280-349678/8			08:30	X																								
IC 280-349678/9			08:32	X																								
IC 280-349678/10			08:33	X																								
IC 280-349678/11			08:35	X																								
ZZZZZZ			08:36																									
ZZZZZZ			08:38																									
ICV 280-349678/14	1		08:39	X																								
ICB 280-349678/15	1		08:41	X																								
ZZZZZZ			08:42																									
ZZZZZZ			08:44																									
ZZZZZZ			08:45																									
ZZZZZZ			08:47																									
ZZZZZZ			08:48																									
ZZZZZZ			08:50																									
ZZZZZZ			08:51																									
ZZZZZZ			08:53																									
ZZZZZZ			08:54																									
ZZZZZZ			08:56																									
ZZZZZZ			08:57																									
ZZZZZZ			08:59																									
ZZZZZZ			09:00																									
CCV 280-349678/29			09:02																									
CCB 280-349678/30			09:03																									
ZZZZZZ			09:05																									
ZZZZZZ			09:06																									
ZZZZZZ			09:08																									
ZZZZZZ			09:09																									
ZZZZZZ			09:11																									
ZZZZZZ			09:12																									
ZZZZZZ			09:14																									
ZZZZZZ			09:15																									
ZZZZZZ			09:17																									
ZZZZZZ			09:18																									
ZZZZZZ			09:20																									
ZZZZZZ			09:21																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/03/2016 08:20 End Date: 11/03/2016 10:37

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			09:23	
CCV 280-349678/44	1		09:24	X
CCB 280-349678/45	1		09:26	X
ZZZZZZ			09:27	
HLCS 280-349597/1-A	1	T	09:29	X
LLCS 280-349597/2-A	1	T	09:30	X
ZZZZZZ			09:32	
ZZZZZZ			09:33	
MB 280-349597/5-A	1	T	09:35	X
ZZZZZZ			09:36	
ZZZZZZ			09:38	
ZZZZZZ			09:39	
ZZZZZZ			09:41	
ZZZZZZ			09:42	
ZZZZZZ			09:44	
ZZZZZZ			09:45	
CCV 280-349678/59	1		09:47	X
CCB 280-349678/60	1		09:48	X
ZZZZZZ			09:50	
ZZZZZZ			09:51	
ZZZZZZ			09:53	
ZZZZZZ			09:54	
ZZZZZZ			09:56	
ZZZZZZ			09:57	
ZZZZZZ			09:59	
ZZZZZZ			10:00	
ZZZZZZ			10:02	
ZZZZZZ			10:03	
ZZZZZZ			10:05	
ZZZZZZ			10:06	
ZZZZZZ			10:08	
CCV 280-349678/74	1		10:09	X
CCB 280-349678/75	1		10:11	X
ZZZZZZ			10:12	
ZZZZZZ			10:14	
ZZZZZZ			10:15	
320-22881-1	1	T	10:17	X
ZZZZZZ			10:18	
ZZZZZZ			10:20	
ZZZZZZ			10:21	
ZZZZZZ			10:23	
LCS 280-349597/3-A	1	T	10:24	X

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/03/2016 08:20 End Date: 11/03/2016 10:37

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
LCSD 280-349597/4-A	1	T	10:26	X																								
ZZZZZZ			10:27																									
ZZZZZZ			10:29																									
CCV 280-349678/88	1		10:30	X																								
CCB 280-349678/89	1		10:36	X																								
ZZZZZZ			10:37																									

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: NoEquip Analysis Method: 9034

Start Date: 10/26/2016 17:18 End Date: 10/26/2016 17:18

Lab Sample Id	D/F	Type	Time	Analytes																								
				S2																								
LCS 280-348387/1-A	1	T	17:18	X																								
MB 280-348387/2-A	1	T	17:18	X																								
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
320-22881-1	1	T	17:18	X																								
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
ZZZZZZ			17:18																									
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ZZZZZZ			17:18																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: 1010A

Start Date: 11/10/2016 09:30 End Date: 11/10/2016 09:30

Lab Sample Id	D/F	Type	Time	Analytes																								
				FP																								
LCS 280-350782/1	1	T	09:30	X																								
LCSD 280-350782/2	1	T	09:30	X																								
MB 280-350782/3	1	T	09:30	X																								
ZZZZZZ			09:30																									
320-22881-1	1	T	09:30	X																								
ZZZZZZ			09:30																									

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-22881-1

SDG No.:

Batch Number: 134067 Batch Start Date: 10/24/16 09:10 Batch Analyst: Rusti, Constantin

Batch Method: 9040C Batch End Date: 10/24/16 10:28

Lab Sample ID	Client Sample ID	Method Chain	Basis	WC-PH-ICV 00022	WC-PH-L3 00012				
ICV 320-134067/1		9040C		# mL					
LCS 320-134067/2		9040C		# mL					
CCV 320-134067/12		9040C			# mL				
CCV 320-134067/14		9040C			# mL				

Batch Notes	
pH Buffer 2 ID	WC-pH_L2_000010 pH=4 exp:03/11/2017
pH Buffer 3 ID	WC-pH_L3_00012 pH=7 exp: 07/05/2017
pH Buffer 4 ID	WC-pH_L4_00011 pH=10 exp:03/26/2017
pH Buffer 6 ID	WC-pH-ICV_00022 pH=8 exp:10/31/2016
Calibration Date and Time	10/24/16 @ 9:16
Electronic Slope	PH4-7=98.9 %, PH7-10=96.4%
Instrument ID	pH4
Sufficient volume for sample dup	yes
Thermometer ID	1362019NEW

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 349597 Batch Start Date: 11/03/16 05:41 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	DistillpHCheck	SulfideCheck	ChlorineCheck	CN 10ppm 00227
HLCS 280-349597/1		9012B, 9012B		50 mL	50 mL	>12	N	N	2 mL
LLCS 280-349597/2		9012B, 9012B		50 mL	50 mL	>12	N	N	0.5 mL
LCS 280-349597/3		9012B, 9012B		50 mL	50 mL	>12	N	N	
LCSD 280-349597/4		9012B, 9012B		50 mL	50 mL	>12	N	N	
MB 280-349597/5		9012B, 9012B		50 mL	50 mL	>12	N	N	
320-22881-K-1	JBER-WW001	9012B, 9012B	T	50 mL	50 mL	>12	N	N	

Lab Sample ID	Client Sample ID	Method Chain	Basis	CN ICV Int 00406					
HLCS 280-349597/1		9012B, 9012B							
LLCS 280-349597/2		9012B, 9012B							
LCS 280-349597/3		9012B, 9012B		0.5 mL					
LCSD 280-349597/4		9012B, 9012B		0.5 mL					
MB 280-349597/5		9012B, 9012B							
320-22881-K-1	JBER-WW001	9012B, 9012B	T						

Batch Notes	
Balance ID	M19170
Bismuth Nitrate Dispenser ID	Bismuth N_00022
Bismuth Nitrate ID	Bismuth N_00021
Magnesium Chloride Reagent ID Number	CN Mag Chl_00061
Sodium Hydroxide ID	2% NaOH_00254
Pipette ID	WC 5000ELJ WC 1000NXN
Sulfamic Acid ID	CN SULFAMIC_00070
Sulfuric Acid Reagent ID Number	H2SO4_00162

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 349597 Batch Start Date: 11/03/16 05:41 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 349678 Batch Start Date: 11/03/16 08:20 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CAL 1 ppm 01171	CN ICV Daily 00936		
ICV 280-349678/14		9012B		50 mL	50 mL		50 mL		
ICB 280-349678/15		9012B		50 mL	50 mL				
CCV 280-349678/44		9012B		50 mL	50 mL	10 mL			
CCB 280-349678/45		9012B		50 mL	50 mL				
HLCS 280-349597/1-A		9012B		50 mL	50 mL				
LLCS 280-349597/2-A		9012B		50 mL	50 mL				
MB 280-349597/5-A		9012B		50 mL	50 mL				
CCV 280-349678/59		9012B		50 mL	50 mL	10 mL			
CCB 280-349678/60		9012B		50 mL	50 mL				
CCV 280-349678/74		9012B		50 mL	50 mL	10 mL			
CCB 280-349678/75		9012B		50 mL	50 mL				
320-22881-K-1-A	JBER-WW001	9012B	T	50 mL	50 mL				
LCS 280-349597/3-A		9012B		50 mL	50 mL				
LCSD 280-349597/4-A		9012B		50 mL	50 mL				
CCV 280-349678/88		9012B		50 mL	50 mL	10 mL			
CCB 280-349678/89		9012B		50 mL	50 mL				

Batch Notes	
Buffer Reagent ID Number	CN Buffer_00086
Chloramine-T ID	CN Chloro-T_00711
Pipette ID	WC 5000ELJ WC 1000NXN
Pyridine-Barbituric Acid ID	CN Pyr/Barb_00146

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 349678 Batch Start Date: 11/03/16 08:20 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 348387 Batch Start Date: 10/26/16 17:14 Batch Analyst: Fortman, Nicholas J

Batch Method: 9030B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	Final pH	SFD CAL INT 01290	
LCS 280-348387/1		9030B, 9034		50 mL	50 mL			1 mL	
MB 280-348387/2		9030B, 9034		50 mL	50 mL			1 mL	
320-22881-J-1	JBER-WW001	9030B, 9034	T	50 mL	50 mL	>13 SU	<2 SU		

Batch Notes	
Formaldehyde ID	form_00085
Pipette ID	5000IU
Zinc Acetate Buffer ID	znac_00090

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 348390 Batch Start Date: 10/26/16 16:45 Batch Analyst: Fortman, Nicholas J

Batch Method: 9034 Batch End Date: 10/26/16 17:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	IodineAmount	BuretStart1	BuretStop1	TitrantVolume1	CalcMsg
LCS 280-348387/1-A		9034		50 mL	4 mL	0.0 mL	1.45 mL	1.45 mL	OK
MB 280-348387/2-A		9034		50 mL	1 mL	1.45 mL	2.45 mL	1 mL	OK
320-22881-J-1-A	JBER-WW001	9034	T	50 mL	1 mL	3.75 mL	4.65 mL	0.9 mL	OK

Batch Notes	
Batch Comment	2nd set: 615:745
HCl Concentration	1:1
Lot # of hydrochloric acid	hcl sol_00136
Iodine Lot Number	4608G54
Iodine Vendor	Ricca
Normality of Iodine Solution	0.025 N
Sodium Thiosulfate Reagent ID Number	na thio_00104
Pipette ID	5000ix,5000iu
Perform Calculation (0=No, 1=Yes)	1
Starch Lot Number	1512A09
Starch Vendor	Ricca
Normality of First Titrant	0.025 N
Zinc Acetate Buffer ID	znac_00090

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 320-22881-1

SDG No.:

Batch Number: 350782 Batch Start Date: 11/10/16 09:30 Batch Analyst: Lehman, Jeffrey M

Batch Method: 1010A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Flash Point 00077			
LCS 280-350782/1		1010A		70 mL	70 mL	70 mL			
LCSD 280-350782/2		1010A		70 mL	70 mL	70 mL			
MB 280-350782/3		1010A		70 mL	70 mL				
320-22881-L-1	JBER-WW001	1010A	T	70 mL	70 mL				

Batch Notes	
Barometric Pressure - Corrected	24.9
Equipment ID	Herzog
Thermometer ID	Flashpoint

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Level I and Level II Review Checklist
General Chemistry

Instrument ID	pH 4		9045C
Batch: 134067	File #: N/A	Date: 10/24/16	Analyst: CFR
Lot Numbers: 320-22881 ; -22942 ; -			

	YES	NO	NA
LEVEL 1 Review:			
1. Samples properly preserved/verified			
2. Run setup meets Std criteria (Curve, ICV/ICB, CCV etc.)			✓
3. Calibration criteria met (R=0.995, R^2=0.990)	✓		
4. Interception criteria for ~~quadratic fits~~ + or – ½ the RL linear w/27/16	✓		
5. Second source std in control	✓		
6. Batch QC in control (LCS,MB,MS/MSD,DCS if necessary)	✓		
7. Calculations checked			✓
8. QAS/QAPP consulted for client specific requirements	✓		
9. Standard tracking #'s recorded on runlog/benchsheet			✓
10. Manual integration performed, documented & approved			✓
11. Copy of run log included with data package			✓
12. Copy of conductivity screen logbook (314.0 only)			✓
LEVEL 1 Data Review:			✓ 10/27/16
1. Benchsheet complete	✓		
2. QAS/QAPP Consulted for client specific data entry	✓		
3. Copy of prep sheet/checklist submitted	✓		
4. NCM(s) submitted	✓		

COMMENTS: _____

REVIEWED BY: MY
DATE: 10/28/16

DATA ENTERED BY: CFR
DATE: 10/27/16

Run Results Report

Facility Name
Facility Location
Department
Operator Name JML
Operator ID JML
Platform FS III/IV/3100
Software Rev Code 222
Data system ID 57

Result path C:\FLOW_4\C110316.RST
Sample table path C:\FLOW_4\c110316.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 03-Nov-16
Time acquired 10:42

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
03-Nov-16	08:20	107	Sync	327183	396.081	
03-Nov-16	08:21	0	Carryover	216	-1.424	LO
03-Nov-16	08:23	0	Carryover	45	-1.632	LO
03-Nov-16	08:24	0	Baseline	0	-1.687	BL
03-Nov-16	08:26	101	CAL 0.00 ppb	275	-1.352	LO
03-Nov-16	08:27	102	CAL 10.0 ppb	8861	9.087	
03-Nov-16	08:29	103	CAL 20.0 ppb	16780	18.713	
03-Nov-16	08:30	104	CAL 50.0 ppb	42776	50.318	
03-Nov-16	08:32	105	CAL 100 ppb	85076	101.743	
03-Nov-16	08:33	106	Cal 200 ppb	168990	203.760	
03-Nov-16	08:35	107	Cal 400 ppb	328541	397.731	
03-Nov-16	08:36	0	BLK	118	-1.544	LO
03-Nov-16	08:38	0	Baseline	0	-1.687	BL
03-Nov-16	08:39	108	ICV 100 ppb	79274	94.690	
03-Nov-16	08:41	0	ICB	68	-1.604	LO
03-Nov-16	08:42	0	Baseline	0	-1.687	BL
03-Nov-16	08:44	113	hlcs 280-349417/1-a	170118	410.264	
03-Nov-16	08:45	114	llcs 280-349417/2-a	77771	92.863	
03-Nov-16	08:47	115	lcs 280-349417/3-a	78160	93.335	
03-Nov-16	08:48	116	mb 280-349417/4-a	2954	1.905	
03-Nov-16	08:50	117	280-89744-m-1-a	2246	1.043	
03-Nov-16	08:51	118	280-89744-m-1-b ms	74833	89.290	
03-Nov-16	08:53	119	280-89744-m-1-c msd	81285	97.134	
03-Nov-16	08:54	120	280-89744-m-2-a	3444	2.501	
03-Nov-16	08:56	121	280-89744-m-3-a	4123	3.326	
03-Nov-16	08:57	122	280-89749-g-1-a	3333	2.365	
03-Nov-16	08:59	0	BLK	122	-1.539	LO
03-Nov-16	09:00	0	baseline	0	-1.687	BL
03-Nov-16	09:02	109	CCV 200PPB	164627	198.456	
03-Nov-16	09:03	0	CCB	-73	-1.775	LO
03-Nov-16	09:05	0	Baseline	0	-1.687	BL
03-Nov-16	09:06	123	280-89929-l-2-a	5346	4.812	
03-Nov-16	09:08	124	280-89929-l-3-a	1927	0.656	
03-Nov-16	09:09	125	280-89929-l-4-a	2291	1.098	
03-Nov-16	09:11	126	280-89929-l-5-a	2639	1.522	
03-Nov-16	09:12	127	280-89929-l-6-a	2941	1.889	
03-Nov-16	09:14	128	280-89929-l-8-a	1490	0.125	
03-Nov-16	09:15	129	280-89929-l-9-a	1468	0.099	
03-Nov-16	09:17	130	280-89929-l-10-a	1915	0.641	
03-Nov-16	09:18	131	280-89929-l-10-b ms	74305	88.648	
03-Nov-16	09:20	132	280-89929-l-10-c msd	73153	87.248	
03-Nov-16	09:21	0	BLK	-11	-1.699	LO
03-Nov-16	09:23	0	baseline	0	-1.687	BL
03-Nov-16	09:24	109	CCV 200PPB	163853	197.515	
03-Nov-16	09:26	0	CCB	-177	-1.902	LO
03-Nov-16	09:27	0	Baseline	0	-1.687	BL

Result path C:\FLOW_4\C110316.RST
Sample table path C:\FLOW_4\c110316.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 03-Nov-16
Time acquired 10:42

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
03-Nov-16	09:29	133	hlcs 280-349597/1-a	157105	378.624	
03-Nov-16	09:30	134	llcs 280-349597/2-a	81131	96.947	
03-Nov-16	09:32	135	lcs 280-349597/3-a	74362	88.718	
03-Nov-16	09:33	136	lcsd 280-349597/4-a	73086	87.167	
03-Nov-16	09:35	137	mb 280-349597/5-a	3096	2.077	
03-Nov-16	09:36	138	280-89763-f-2-a	3676	2.783	
03-Nov-16	09:38	139	280-89763-f-2-b ms	75942	90.639	
03-Nov-16	09:39	140	280-89763-f-2-c msd	77814	92.915	
03-Nov-16	09:41	141	280-89763-f-3-a	4282	3.519	
03-Nov-16	09:42	142	280-89763-f-4-a	4004	3.181	
03-Nov-16	09:44	0	BLK	52	-1.623	LO
03-Nov-16	09:45	0	baseline	0	-1.687	BL
03-Nov-16	09:47	109	CCV 200PPB	165254	199.218	
03-Nov-16	09:48	0	CCB	-40	-1.735	LO
03-Nov-16	09:50	0	Baseline	0	-1.687	BL
03-Nov-16	09:51	143	280-89763-f-5-a	2083	0.846	
03-Nov-16	09:53	144	280-89763-f-9-a	2243	1.040	
03-Nov-16	09:54	145	280-89763-f-7-a	2649	1.534	
03-Nov-16	09:56	146	280-89764-q-1-a	6608	6.347	
03-Nov-16	09:57	147	280-89764-q-2-a	7777	7.768	
03-Nov-16	09:59	148	280-89768-q-1-a	6081	5.706	
03-Nov-16	10:00	149	280-89768-q-2-a	5720	5.268	
03-Nov-16	10:02	150	280-89949-b-1-a	3060	2.033	
03-Nov-16	10:03	151	280-89949-b-1-b ms	78908	94.245	
03-Nov-16	10:05	152	280-89949-b-1-c msd	82429	98.525	
03-Nov-16	10:06	0	BLK	-56	-1.754	LO
03-Nov-16	10:08	0	baseline	0	-1.687	BL
03-Nov-16	10:09	109	CCV 200PPB	169171	203.980	
03-Nov-16	10:11	0	CCB	-118	-1.830	LO
03-Nov-16	10:12	0	Baseline	0	-1.687	BL
03-Nov-16	10:14	153	280-89803-m-1-a	5988	5.593	
03-Nov-16	10:15	154	280-89803-m-2-a	2540	1.401	
03-Nov-16	10:17	155	320-22881-k-1-a	3402	2.450	
03-Nov-16	10:18	156	280-89762-a-2-a	5151	4.576	
03-Nov-16	10:20	157	280-89801-b-2-a	2675	1.565	
03-Nov-16	10:21	158	280-89801-b-3-a	3747	2.869	
03-Nov-16	10:23	159	280-89801-b-5-a	2368	1.192	
03-Nov-16	10:24	135	lcs 280-349597/3-a	79657	95.156	
03-Nov-16	10:26	136	lcsd 280-349597/4-a	78578	93.843	
03-Nov-16	10:27	0	BLK	24	-1.658	LO
03-Nov-16	10:29	0	baseline	0	-1.687	BL
03-Nov-16	10:30	109	CCV 200PPB	167864	202.391	
03-Nov-16	10:36	0	CCB	-7	-1.695	LO
03-Nov-16	10:37	0	Baseline	0	-1.687	BL

Peak Table:Cyanide, Total

File name: C:\FLOW_4\C110316.RST
Date: 03-Nov-16
Operator: JML

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
1	107	Sync	1	SYNC	1	1	327183	396.080536	
2	0	Carryover	1	CO	1	1	216	-1.423695	LO
3	0	Carryover	2	CO	1	1	45	-1.632075	LO
B	0	Baseline	1	RB	1	1	0	-1.686628	BL
5	101	CAL 0.00 ppb	1	C	1	1	275	-1.352487	LO
6	102	CAL 10.0 ppb	1	C	1	1	8861	9.086532	
7	103	CAL 20.0 ppb	1	C	1	1	16780	18.712896	
8	104	CAL 50.0 ppb	1	C	1	1	42776	50.317883	
9	105	CAL 100 ppb	1	C	1	1	85076	101.743454	
10	106	Cal 200 ppb	1	C	1	1	168990	203.760300	
11	107	Cal 400 ppb	1	C	1	1	328541	397.731384	
12	0	BLK	1	BLNK	1	1	118	-1.543766	LO
B	0	Baseline	1	RB	1	1	0	-1.686628	BL
14	108	ICV 100 ppb	1	CCV	1	1	79274	94.690056	
15	0	ICB	1	U	1	1	68	-1.603732	LO
B	0	Baseline	1	RB	1	1	0	-1.686628	BL
17	113	hlcs 280-349417/1-a 1	U		2	1	170118	410.264313	
18	114	llcs 280-349417/2-a 1	U		1	1	77771	92.862823	
19	115	lcs 280-349417/3-a 1	U		1	1	78160	93.335068	
20	116	mb 280-349417/4-a 1	U		1	1	2954	1.904678	
21	117	280-89744-m-1-a 1	U		1	1	2246	1.043435	
22	118	280-89744-m-1-b ms 1	U		1	1	74833	89.290466	
23	119	280-89744-m-1-c msd 1	U		1	1	81285	97.133934	
24	120	280-89744-m-2-a 1	U		1	1	3444	2.500509	
25	121	280-89744-m-3-a 1	U		1	1	4123	3.325945	
26	122	280-89749-g-1-a 1	U		1	1	3333	2.365101	
27	0	BLK	1	BLNK	1	1	122	-1.538625	LO
B	0	baseline	1	RB	1	1	0	-1.686628	BL
29	109	CCV 200PPB	1	CCV	1	1	164627	198.455505	
30	0	CCB	1	U	1	1	-73	-1.774907	LO
B	0	Baseline	1	RB	1	1	0	-1.686628	BL
32	123	280-89929-l-2-a 1	U		1	1	5346	4.812371	
33	124	280-89929-l-3-a 1	U		1	1	1927	0.656487	
34	125	280-89929-l-4-a 1	U		1	1	2291	1.098387	
35	126	280-89929-l-5-a 1	U		1	1	2639	1.522106	
36	127	280-89929-l-6-a 1	U		1	1	2941	1.888908	
37	128	280-89929-l-8-a 1	U		1	1	1490	0.125191	
38	129	280-89929-l-9-a 1	U		1	1	1468	0.098555	
39	130	280-89929-l-10-a 1	U		1	1	1915	0.641406	
40	131	280-89929-l-10-b ms 1	U		1	1	74305	88.648087	
41	132	280-89929-l-10-c msd 1	U		1	1	73153	87.247986	
42	0	BLK	1	BLNK	1	1	-11	-1.699473	LO
B	0	baseline	1	RB	1	1	0	-1.686628	BL
44	109	CCV 200PPB	1	CCV	1	1	163853	197.515152	
45	0	CCB	1	U	1	1	-177	-1.902009	LO
B	0	Baseline	1	RB	1	1	0	-1.686628	BL
47	133	hlcs 280-349597/1-a 1	U		2	1	157105	378.623718	
48	134	llcs 280-349597/2-a 1	U		1	1	81131	96.946693	
49	135	lcs 280-349597/3-a 1	U		1	1	74362	88.717766	
50	136	lcsd 280-349597/4-a 1	U		1	1	73086	87.167015	
51	137	mb 280-349597/5-a 1	U		1	1	3096	2.077171	
52	138	280-89763-f-2-a 1	U		1	1	3676	2.782544	
53	139	280-89763-f-2-b ms 1	U		1	1	75942	90.639046	
54	140	280-89763-f-2-c msd 1	U		1	1	77814	92.914719	
55	141	280-89763-f-3-a 1	U		1	1	4282	3.518568	
56	142	280-89763-f-4-a 1	U		1	1	4004	3.180795	
57	0	BLK	1	BLNK	1	1	52	-1.622957	LO
B	0	baseline	1	RB	1	1	0	-1.686628	BL
59	109	CCV 200PPB	1	CCV	1	1	165254	199.218170	
60	0	CCB	1	U	1	1	-40	-1.734885	LO
B	0	Baseline	1	RB	1	1	0	-1.686628	BL
62	143	280-89763-f-5-a 1	U		1	1	2083	0.846244	
63	144	280-89763-f-9-a 1	U		1	1	2243	1.039782	
64	145	280-89763-f-7-a 1	U		1	1	2649	1.533790	
65	146	280-89764-q-1-a 1	U		1	1	6608	6.346590	
66	147	280-89764-q-2-a 1	U		1	1	7777	7.767655	
67	148	280-89768-q-1-a 1	U		1	1	6081	5.706483	
68	149	280-89768-q-2-a 1	U		1	1	5720	5.267614	
69	150	280-89949-b-1-a 1	U		1	1	3060	2.033319	
70	151	280-89949-b-1-b ms 1	U		1	1	78908	94.244934	

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
71	152	280-89949-b-1-c msd	1	U	1	1	82429	98.525230	
72	0	BLK	1	BLNK	1	1	-56	-1.754231	LO
B	0	baseline	1	RB	1	1	0	-1.686628	BL
74	109	CCV 200PPB	1	CCV	1	1	169171	203.980392	
75	0	CCB	1	U	1	1	-118	-1.830203	LO
B	0	Baseline	1	RB	1	1	0	-1.686628	BL
77	153	280-89803-m-1-a	1	U	1	1	5988	5.593048	
78	154	280-89803-m-2-a	1	U	1	1	2540	1.400980	
79	155	320-22881-k-1-a	1	U	1	1	3402	2.449643	
80	156	280-89762-a-2-a	1	U	1	1	5151	4.576027	
81	157	280-89801-b-2-a	1	U	1	1	2675	1.565341	
82	158	280-89801-b-3-a	1	U	1	1	3747	2.868522	
83	159	280-89801-b-5-a	1	U	1	1	2368	1.191877	
84	135	lcs 280-349597/3-a	1	U	1	1	79657	95.155663	
85	136	lcsd 280-349597/4-a	1	U	1	1	78578	93.843124	
86	0	BLK	1	BLNK	1	1	24	-1.657967	LO
B	0	baseline	1	RB	1	1	0	-1.686628	BL
88	109	CCV 200PPB	1	CCV	1	1	167864	202.391342	
89	0	CCB	1	U	1	1	-7	-1.694889	LO
B	0	Baseline	1	RB	1	1	0	-1.686628	BL

Cyanide, Total:Calibration 1: Peak 5-90

File name: C:\FLOW_4\C110316.RST
Date: 03-Nov-16
Operator: JML

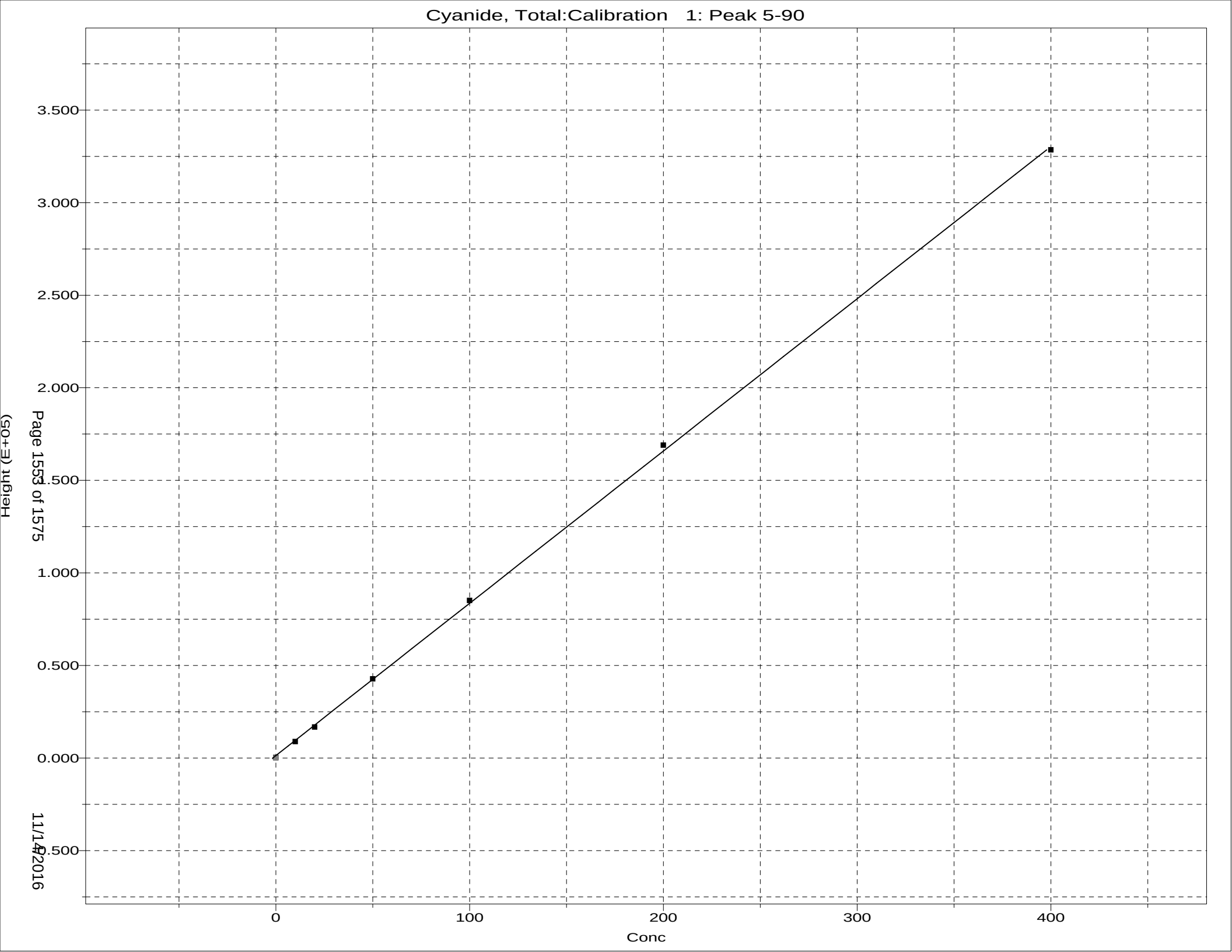
*	Name	Conc	Height
*	CAL 0.00 ppb	0.000000	274.847534
*	CAL 10.0 ppb	10.000000	8861.444336
*	CAL 20.0 ppb	20.000000	16779.593750
*	CAL 50.0 ppb	50.000000	42776.218750
*	CAL 100 ppb	100.000000	85076.234375
*	Cal 200 ppb	200.000000	168990.015625
*	Cal 400 ppb	400.000000	328540.593750

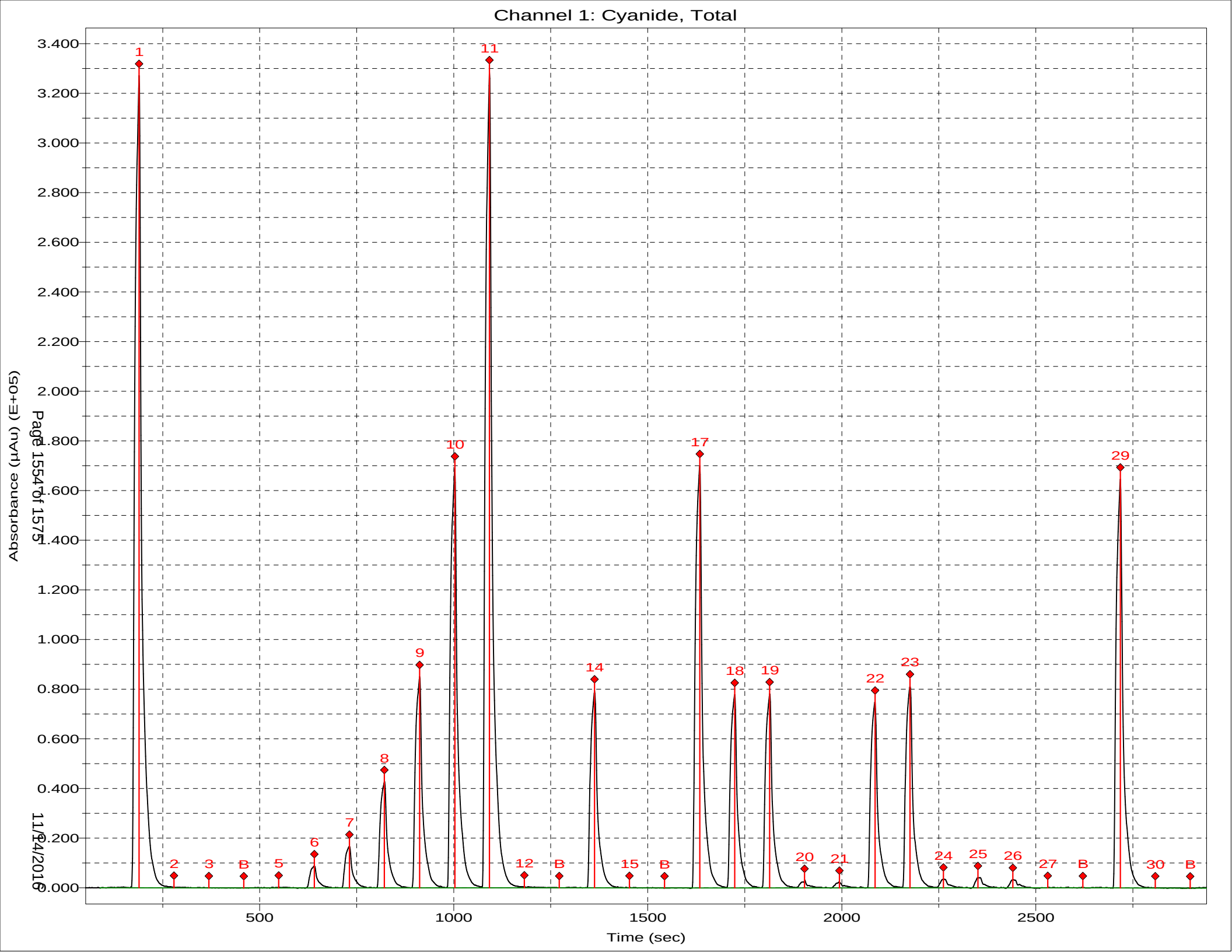
Calib Coef:
y=bx+a
a: (intercept) 1.3873e+03
b: 8.2255e+02

Corr Coef: 0.999894

Carryover: 0.0661%

No Drift Peaks


Cyanide, Total:Calibration 1: Peak 5-90
Height (E+05)
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
100
200
300
400
Conc


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
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3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
500
1000
1500
2000
2500
1
2
3
B
5
6
7
8
9
10
11
12
B
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27
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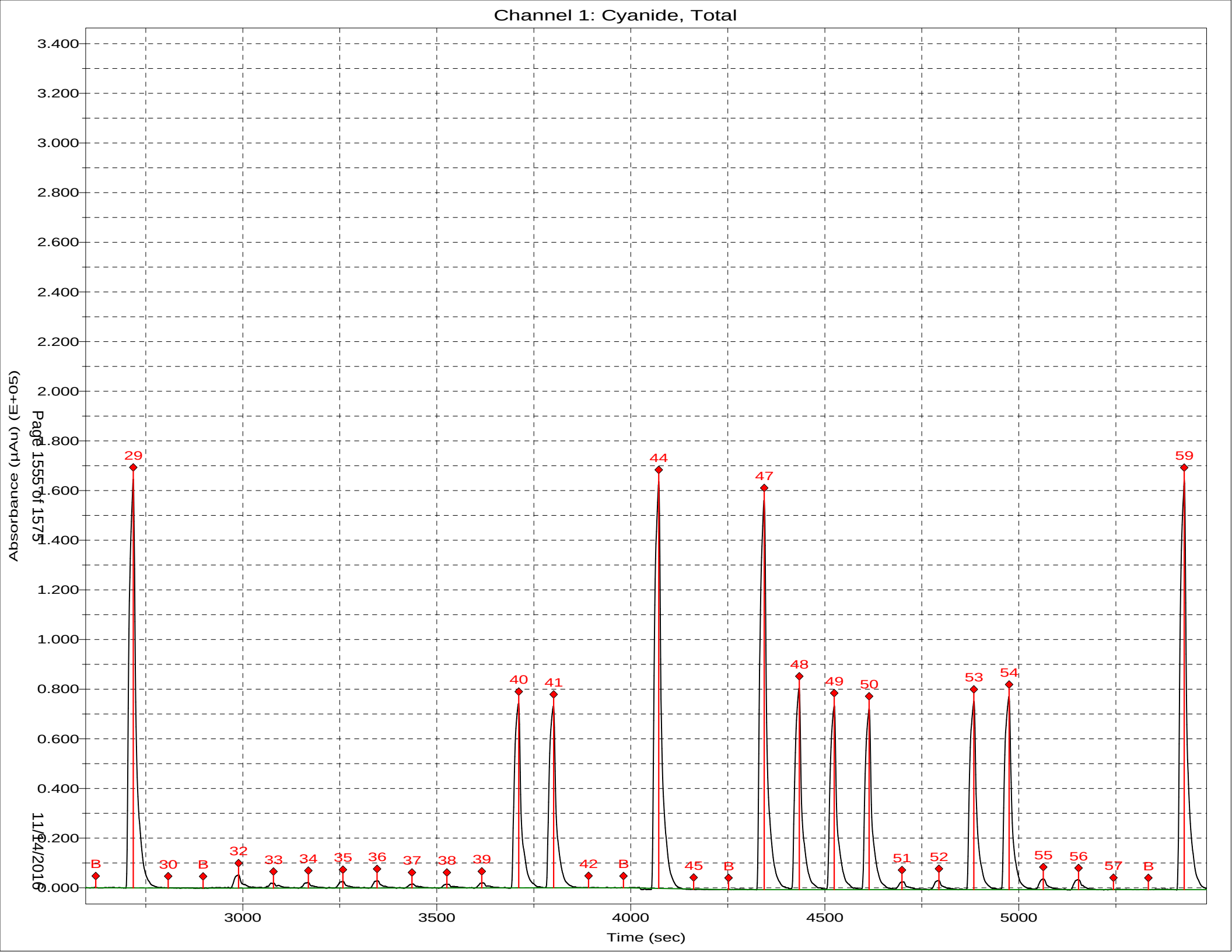
29
30
B


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
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3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
3000
3500
4000
4500
5000
B
29
30
B
32
33
34
35
36
37
38
39
40
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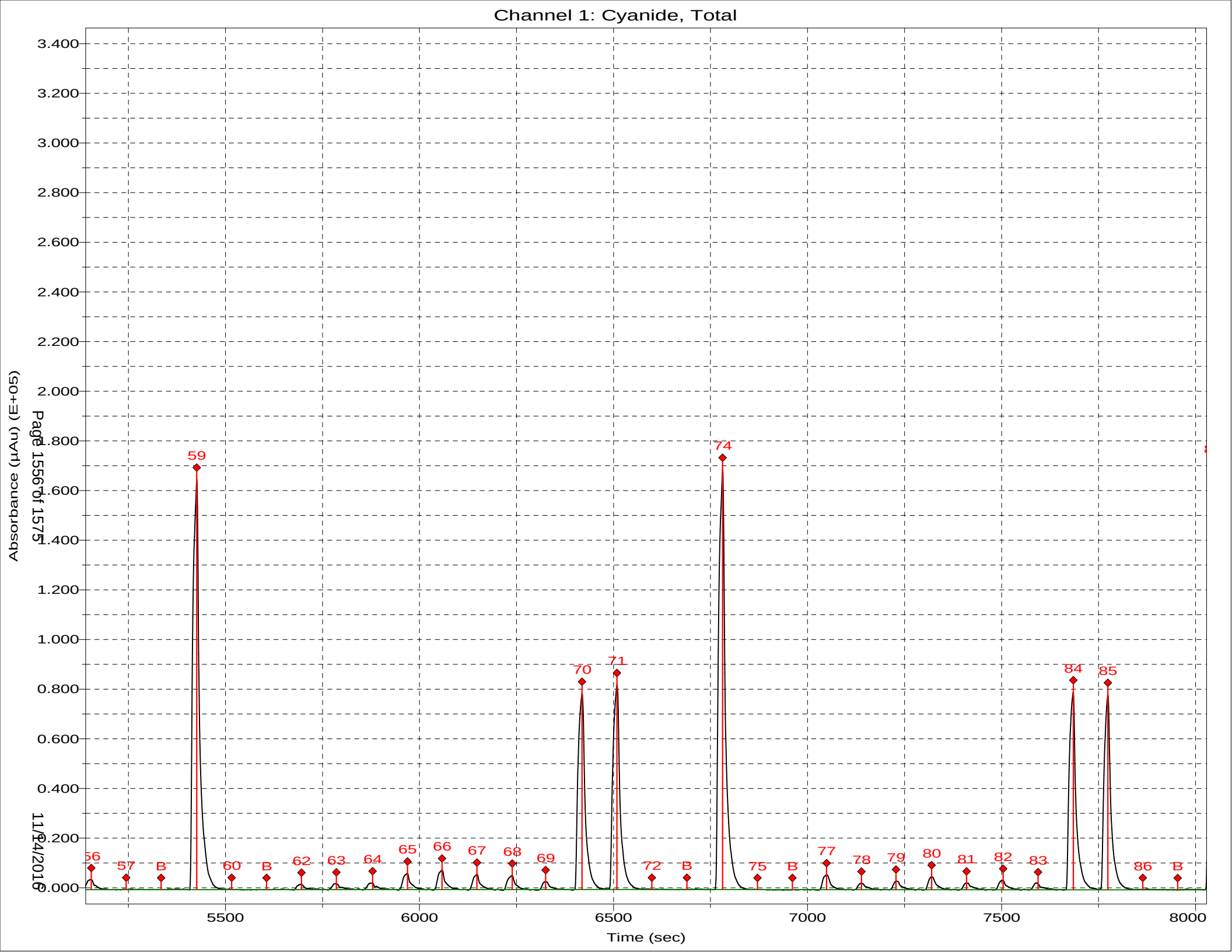
57
B
59


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Time (sec)
5500
6000
6500
7000
7500
8000
56
57
B
59
60
B
62
63
64
65
66
67
68
69
70
71
72
B
74
75
B
77
78
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80
81
82
83
84
85
86
B
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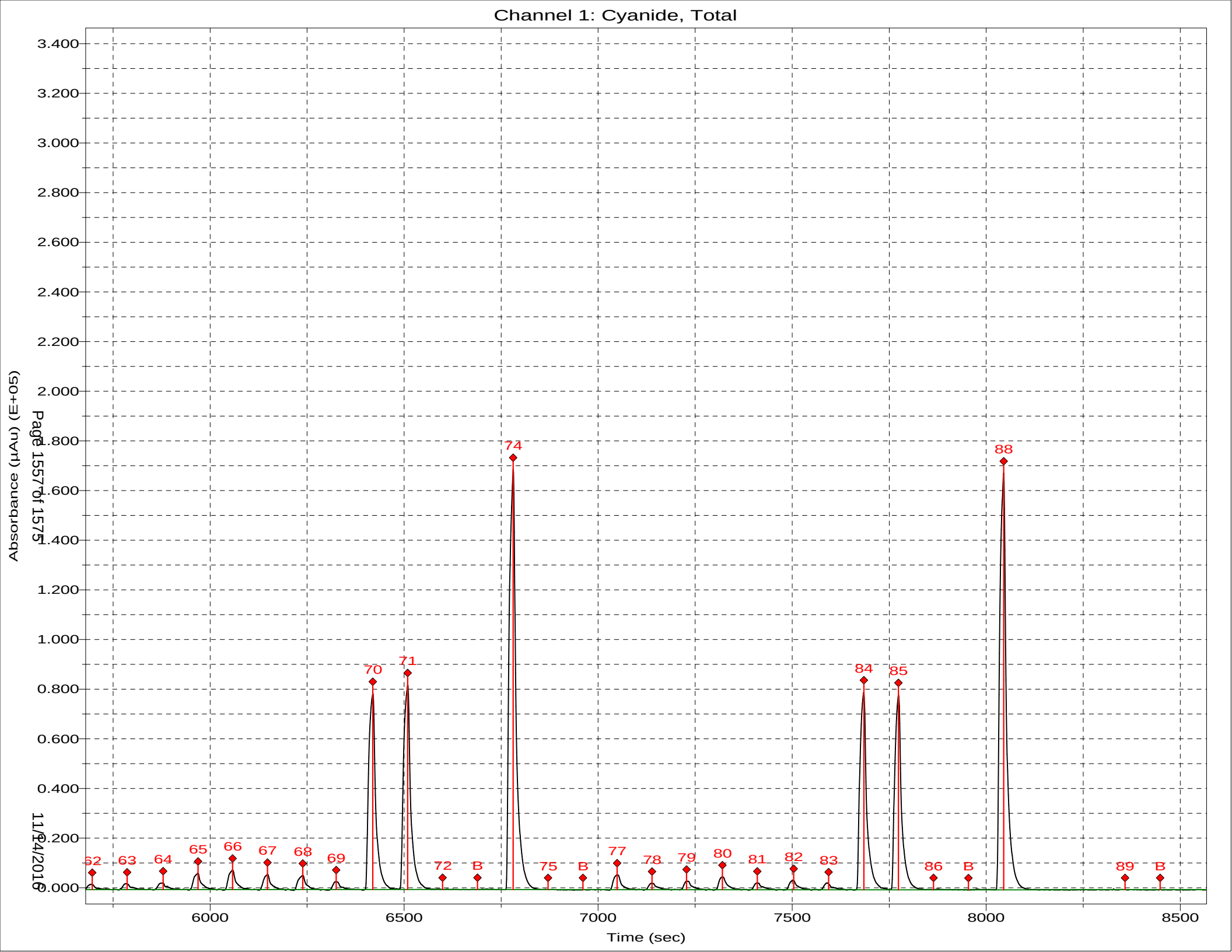
Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
6000
6500
7000
7500
8000
8500
62
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72
B
74
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B
77
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86
B
88
89
B
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Sulfide by Titration

Analyst:	NJF	SOP Information:	
Date:	10/24/2016	Number:	WC-0042
Titration Solutions		**Calibration Information**	
Solution 1:	Iodine	Source/Ver-Lot#:	CAL
TALS ID	Iod_00162	Prep Date:	10/8/2016
Normality:	0.025	Made By:	njf
Solution 2:	sodium thiosulfate	Concentration:	1000
TALS ID	Na thio__00104	Expiration Date:	12/8/2016
Normality:	0.025		
	Starch Indicator		
TALS ID	Startch Ind_00036		

	CAL Volume	Buret Start	Buret End	mL Iodine	Final mL	Conc mg/L
CAL	5	0.00	7.60	20	7.60	992.000
CAL	5	7.60	15.00	20	7.40	1008.000

Dispenser for Zinc Acetate Solution

DATE	ANALYST INITIALS	BALANCE ID	DENSITY OF Zinc Acetate (g/mL)	PIPETTE ID	VOLUME DISPENSED (mL)	WEIGHT 1 (g)	WEIGHT 2 (g)	WEIGHT 3 (g)	MEAN VOLUME DELIVERED (mL)	PERCENT DEVIATION	RELATIVE STANDARD DEVIATION	PASSES CRITERIA?	MEANS OF DOCUMENTATION	COMMENTS
10/26/16	NJF	na	1.74	5000 EE	na	na	na	na	#DIV/0!	#DIV/0!	#VALUE!	#DIV/0!	na	see WC daily pipette verification

Dispenser for Formalin

DATE	ANALYST INITIALS	BALANCE ID	DENSITY OF Formalin (g/mL)	PIPETTE ID	VOLUME DISPENSED (mL)	WEIGHT 1 (g)	WEIGHT 2 (g)	WEIGHT 3 (g)	MEAN VOLUME DELIVERED (mL)	PERCENT DEVIATION	RELATIVE STANDARD DEVIATION	PASSES CRITERIA?	MEANS OF DOCUMENTATION	COMMENTS
10/26/16	NJF	na	0.8153	na	na	na	na	na	#DIV/0!	#DIV/0!	#VALUE!	#DIV/0!		see WC daily pipette verification

na

TALS Raw Data Report

Job Number: 280-22881-1
LIMS Batch: 348390
Equipment: NoEquip

Laboratory: TestAmerica Denver

RS# 1 Lab ID: **LCS 280-348387/1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		21.675 mg/L	mg/L				
Sulfide		20.4 mg/L	mg/L	102	50 106		

RS# 2 Lab ID: **MB 280-348387/2-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 10 Lab ID: **280-89939-T-5-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 11 Lab ID: **280-89939-B-5-A MS** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		14.45 mg/L	mg/L				
Sulfide		13.6 mg/L	mg/L	68	50 106		

RS# 12 Lab ID: **280-89939-K-5-A MSD** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		13.175 mg/L	mg/L				
Sulfide		12.4 mg/L	mg/L	62	50 106	9	20

RS# 13 Lab ID: **320-22881-J-1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.85 mg/L	0.85 J mg/L				
Sulfide		0.8 mg/L	0.80 J mg/L				

TALS Raw Data Report

Job Number: 280-89741-1
LIMS Batch: 348390
Equipment: NoEquip

Laboratory: TestAmerica Denver

RS# 1 Lab ID: **LCS 280-348387/1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		21.675 mg/L	mg/L				
Sulfide		20.4 mg/L	mg/L	102	50 106		

RS# 2 Lab ID: **MB 280-348387/2-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 3 Lab ID: **280-89741-D-1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		-0.425 mg/L	2.0 U mg/L				
Sulfide		-0.4 mg/L	1.9 U mg/L				

RS# 4 Lab ID: **280-89741-D-3-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 5 Lab ID: **280-89741-D-4-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 6 Lab ID: **280-89741-D-5-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 7 Lab ID: **280-89741-D-6-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 8 Lab ID: **280-89741-D-7-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.425 mg/L	2.0 U mg/L				
Sulfide		0.4 mg/L	1.9 U mg/L				

RS# 9 Lab ID: **280-89741-D-9-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		-0.425 mg/L	2.0 U mg/L				
Sulfide		-0.4 mg/L	1.9 U mg/L				

RS# 10 Lab ID: **280-89939-T-5-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 11 Lab ID: **280-89939-B-5-A MS** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Sulfide as H2S		14.45 mg/L	mg/L					
Sulfide		13.6 mg/L	mg/L	68	50	106		

RS# 12 Lab ID: **280-89939-K-5-A MSD** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Sulfide as H2S		13.175 mg/L	mg/L					
Sulfide		12.4 mg/L	mg/L	62	50	106	9	20

TALS Raw Data Report

Job Number: 280-89749-1
LIMS Batch: 348390
Equipment: NoEquip

Laboratory: TestAmerica Denver

RS# 1 Lab ID: **LCS 280-348387/1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		21.675 mg/L	mg/L				
Sulfide		20.4 mg/L	mg/L	102	50 106		

RS# 2 Lab ID: **MB 280-348387/2-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	mg/L				
Sulfide		0 mg/L	mg/L				

RS# 10 Lab ID: **280-89939-T-5-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	mg/L				
Sulfide		0 mg/L	mg/L				

RS# 11 Lab ID: **280-89939-B-5-A MS** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		14.45 mg/L	mg/L				
Sulfide		13.6 mg/L	mg/L	68	50 106		

RS# 12 Lab ID: **280-89939-K-5-A MSD** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		13.175 mg/L	mg/L				
Sulfide		12.4 mg/L	mg/L	62	50 106	9	20

RS# 15 Lab ID: **280-89749-H-1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.85 mg/L	0.85 J mg/L				
Sulfide		0.8 mg/L	0.80 J mg/L				

TALS Raw Data Report

Job Number: 280-89786-1
LIMS Batch: 348390
Equipment: NoEquip

Laboratory: TestAmerica Denver

RS# 1 Lab ID: **LCS 280-348387/1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		21.675 mg/L	mg/L				
Sulfide		20.4 mg/L	mg/L	102	50 106		

RS# 2 Lab ID: **MB 280-348387/2-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 10 Lab ID: **280-89939-T-5-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 11 Lab ID: **280-89939-B-5-A MS** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		14.45 mg/L	mg/L				
Sulfide		13.6 mg/L	mg/L	68	50 106		

RS# 12 Lab ID: **280-89939-K-5-A MSD** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		13.175 mg/L	mg/L				
Sulfide		12.4 mg/L	mg/L	62	50 106	9	20

RS# 16 Lab ID: **280-89786-E-2-B** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.425 mg/L	2.0 U mg/L				
Sulfide		0.4 mg/L	1.9 U mg/L				

RS# 17 Lab ID: **280-89786-E-3-B** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 18 Lab ID: **280-89786-E-5-B** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 19 Lab ID: **280-89786-E-6-B** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	2.0 U mg/L				
Sulfide		0 mg/L	1.9 U mg/L				

RS# 20 Lab ID: **280-89786-G-7-B** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.425 mg/L	2.0 U mg/L				
Sulfide		0.4 mg/L	1.9 U mg/L				

TALS Raw Data Report

RS# 21 Lab ID: **280-89786-E-9-B** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.85 mg/L	0.85 J mg/L				
Sulfide		0.8 mg/L	0.80 J mg/L				

TALS Raw Data Report

Job Number: 280-89939-1
LIMS Batch: 348390
Equipment: NoEquip

Laboratory: TestAmerica Denver

RS# 1 Lab ID: **LCS 280-348387/1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		21.675 mg/L	mg/L				
Sulfide		20.4 mg/L	mg/L	102	50 106		

RS# 2 Lab ID: **MB 280-348387/2-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	0.84 U mg/L				
Sulfide		0 mg/L	0.79 U mg/L				

RS# 10 Lab ID: **280-89939-T-5-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	0.84 U mg/L				
Sulfide		0 mg/L	0.79 U mg/L				

RS# 11 Lab ID: **280-89939-B-5-A MS** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		14.45 mg/L	mg/L				
Sulfide		13.6 mg/L	mg/L	68	50 106		

RS# 12 Lab ID: **280-89939-K-5-A MSD** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		13.175 mg/L	mg/L				
Sulfide		12.4 mg/L	mg/L	62	50 106	9	20

RS# 14 Lab ID: **280-89939-B-25-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	0.84 U mg/L				
Sulfide		0 mg/L	0.79 U mg/L				

RS# 22 Lab ID: **280-89939-B-1-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.425 mg/L	0.84 U mg/L				
Sulfide		0.4 mg/L	0.79 U mg/L				

RS# 23 Lab ID: **280-89939-B-3-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.425 mg/L	0.84 U mg/L				
Sulfide		0.4 mg/L	0.79 U mg/L				

RS# 24 Lab ID: **280-89939-B-7-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.425 mg/L	0.84 U mg/L				
Sulfide		0.4 mg/L	0.79 U mg/L				

RS# 25 Lab ID: **280-89939-B-9-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.85 mg/L	0.85 J mg/L				
Sulfide		0.8 mg/L	0.80 J mg/L				

RS# 26 Lab ID: **280-89939-B-11-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.85 mg/L	0.85 J mg/L				
Sulfide		0.8 mg/L	0.80 J mg/L				

RS# 27 Lab ID: **280-89939-K-13-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		1.275 mg/L	1.3 J mg/L				
Sulfide		1.2 mg/L	mg/L				

RS# 28 Lab ID: **280-89939-B-13-A MS** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		14.025 mg/L	mg/L				
Sulfide		13.2 mg/L	mg/L	60	50 106		

RS# 29 Lab ID: **280-89939-T-13-A MSD** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		19.125 mg/L	mg/L				
Sulfide		18 mg/L	mg/L	84	50 106	31	20

RS# 30 Lab ID: **280-89939-B-15-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.425 mg/L	0.84 U mg/L				
Sulfide		0.4 mg/L	0.79 U mg/L				

RS# 31 Lab ID: **280-89939-B-17-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.425 mg/L	0.84 U mg/L				
Sulfide		0.4 mg/L	0.79 U mg/L				

RS# 32 Lab ID: **280-89939-B-19-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0.85 mg/L	0.85 J mg/L				
Sulfide		0.8 mg/L	0.80 J mg/L				

RS# 33 Lab ID: **MB 280-348387/33-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		0 mg/L	0.84 U mg/L				
Sulfide		0 mg/L	0.79 U mg/L				

RS# 34 Lab ID: **LCS 280-348387/34-A** Inj Date: 10/26/2016 5:18:00PM Dil: 1.0 Meth: 9034

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Sulfide as H2S		21.675 mg/L	mg/L				
Sulfide		20.4 mg/L	mg/L	102	50 106		

Titration Data Review Checklist

Prep: 348387

1000

LIMS Batch Number: 348390	Method (circle one):	QC Type (circle):
Analyst/1st Reviewer: NJF	2310B 2320B 2340C	(Standard) DoD QAPP Other
Date: 10/31/16	4500 S2 F 4500 SO3 B (9030B/9034)	
Matrix (circle): (Water) Solid	Automated or Manual (circle one)	Instrument ID (circle one if applicable): AT2 AT3

Review Items	Yes	No	2nd Rev	If No, why is data reportable?
A. Sample Storage and Pretreatment				
1. Is sample pH verified and documented prior to analysis? (if required)	✓		✓	
2. For samples requiring pH adjustment is the amount of acid/base used documented?		NA	✓	If no, list details:
3. Are samples analyzed within the required hold time?	✓		✓	NCM:
4. Pre-treatment reagents used to remove interferences are documented.		NA	✓	
B. Calibration / Instrument				
5. Was the normality of the titrant verified and found acceptable?	✓		✓	Comments:
6. For potentiometric titration, the pH meter is calibrated with 5 buffers bracketing range of samples and QC.		NA	✓	Comments:
7. Calibration standards are analyzed at the beginning and end of the analytical sequence and after every 10 sample analyses. (samples/dilutions/reanalyses).		NA	✓	Comments:
8. Calibrations standards (ICV/CCV) are within 90-110% recovery.		NA	✓	
C. Sample and Batch QC				
9. Blanks are analyzed at the beginning, end and after every 10 sample analyses in the sequence.		NA	✓	
10. Results of blank analyses (MB, ICB, CCB) are < ½ RL (<RL for alkalinity unless DoD)	✓		✓	□ No analyte > ½ RL in associated samples □ Sample results >10x blank
11. A standard from a second source (SRM, CRM, LCS) is included in the analytical sequence.		NA	✓	
12. The recovery of the 2nd source material falls within 90-110% or manufacturer's limits.		NA	✓	
13. Samples analyses are bracketing by acceptable CCV/CCBs.		NA	✓	□ No analyte > RL in associated samples □ Sample results >10x blank □ Sample results qualified
14. MS/MSD analyzed at required frequency and recoveries within limits. (If recoveries out of limits, verify not due to lab error) (Required for 2340C, 4500 S2 F, 9030B/9034)	✓		✓	□ Non-conformance (NCM) added □ Sample results >4X spike conc.
15. Duplicate analyzed at required frequency and RPD within limits. (Required for 2310B, 2320B, 4500 SO3 B)		NA	–	□ Non-conformance (NCM) added □ Sample results ND or <2X RL

Review Items	Yes	No	2nd Rev	If No, why is data reportable?
16. Are all MS/MSD RPDs <50%? Note: Excessive RPDs (>50%) require evaluation, correction or explanation.	/			□ Non-conformance (NCM) added
D. Raw Data & TALS Data Entry				
17. Raw Data				
a. Unused data is clearly identified with reason	/		/	
b. All crossed out data is initialed and dated	/		/	
c. Out of control QC is clearly identified	/		/	
d. Any data that has a qualifier is commented on with appropriate action taken	/		/	
e. The first page of the run includes the filename, instrument, and analyst initials/signature	/		/	
f. 100% of manual calculations are verified.	/			
18. TALS Samples Tab				
a. LIMS Sample IDs / Containers are correct	/		/	
b. Method and matrix are correct	/		/	
c. Date and time match raw data	/		/	
d. Dilutions are correct	/		/	
e. Correct suffix designated (where applicable)	/		/	
19. TALS Worksheet Tab is complete and correct	/		/	
20. TALS Reagent Tab is complete and correct	/		/	
21. TALS QC Links Tab is correct	/		/	
22. TALS Sample Results Tab				
a. All unused data are marked Rejected or Accepted	/		/	
b. All reported analytes are marked Primary or Secondary	/		/	
c. Data manually transcribed from benchsheet into TALS verified 100% including significant figures SM 4500 SO3 B).	/		/	
d. TALS Batch Information Screen documentation is complete	/		/	
e. TALS Status set to appropriate review level	/		/	
E. Final Report and NCMs (2nd level review only)				
f. Were all job/project requirements met?			/	
g. Results for samples and QC correct on final report?			/	
h. Are all necessary scanned documents in TALS?			/	
i. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?			/	

Comments: _____

_____

_____

2nd Reviewer: _____ **Review Date:** 10/27/16

TestAmerica
Denver
FLASH POINT
ASTM Method A
Revision 3 - February 2013

Analyst: JML

Date: 11/10/2016
Time: 9:30
SOP: DV-WC-0075 Rev. ___

BAROMETRIC PRESSURE : 24.9 in Hg / 632.46 mm Hg

CORRECTED $^0F=^0F+(0.06)*(760\ mm\ Hg - ACTUAL\ mm\ Hg)$

P-Xylene TRUE VALUE 81°F +/- 2°F

Sample ID	Container Plstc/Lkng		Matrix **	Particles >2mm		Stirred ?		Flash Point (°F)	
	Y *	N		Y +	N	Y	N	Initial	Corrected
P-XYLENE		X	Liquid		X	X		73	81
MB		X	Liquid		X	X		>160	>160
90250-1		X	Liquid		X	X		>160	>160
22881-1		X	Liquid		X	X		>160	>160
131355-1		X	Liquid		X	X		>160	>160
P-XYLENE		X	Liquid		X	X		75	83
MB		X	Liquid		X	X		>160	>160

* If "yes", anomalize as "Result(s) of sample(s)_____may be inaccurate - loss of volatiles may have occurred from improper storage and/or handling."

11/11/16

** ASTM Method A Matrix: Liquid or Thin Oil

COMMENTS:

Shipping and Receiving Documents

Laboratory Chain of Custody Record

HGL HydroGeoLogic, Inc. Exceeding Expectations

Date: 10/20/2016 Page 1 of 1 COC #: IDW- 02

Name: Jeff DeVaughn (HGL)
Address: 581 Boston Mills Road, Ste 600, Hudson, Ohio 44236
Phone Number: (330) 840-9449
Project Manager: Jeff DeVaughn
Project Name: JBER VI Study Sampling
Job/P.O. #:

Sampler (Signature) Candace White (Printed Name)

TestAmerica
880 Riverside Pkwy
West Sacramento, CA 95605

POC: Jill Kellmann
Phone: (916) 374-4402

Station	Field Sample ID	Depth	Date	Time	Matrix	Requested Parameters: VOCs (A/1,2)	SVOCs (B/1)	Pesticides (C/1)	Herbicides (D/1)	Metals (E/1,3)	pH (F)	Flash Point (G)	Sulfide (H/1,4)	Cyanide (I/1,5)	No. of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS
						WA	WA	WA	WA	WA	WA	WA	WA	WA		
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA	X									3	40 ml VOA Vial
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA		X								2	1 L Amber Glass
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA			X							2	1 L Amber Glass
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA				X						2	1 L Amber Glass
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA					X					1	250 mL Plastic
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA						X				1	250 mL Plastic
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA							X			1	500 mL Plastic
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA								X		1	500 mL Plastic
JBER-WW001	JBERWW001	N/A	10/20/2016	1040	WA									X	1	250 mL Amber Plastic

Total No. of Containers (this page): 14
Total (entire COC): 14

Relinquished by	Date	Time	Received by	Date	Time
Signature: Candace White	10/20/16	1153	Signature:	10/24/16	1155
Printed Name: Candace White			Printed Name: Andrew Pilch		
Company:			Company: TA-AK		
Relinquished by	Date	Time	Received by	Date	Time
Signature:	10/20/16	15:30	Signature:	10/21/16	0910
Printed Name: Andrew Pilch			Printed Name: Connor Edman		
Company: TA-AK			Company: TAWS		

NOTES

Analytical Method
A: SW-846 8260B
B: SW-846 8270D
C: SW-846 8081B
D: SW-846 8151A
E: SW-846 6020/7470A
F: SW-846 9040C
G: SW-846 1010B
H: SW-846 9034
I: SW-846 9012B

Matrix
WA: Water

Preservation
1: Cool ≤6 Deg C
2: HCL pH<2
3: HNO3 to pH<2
4: Zn Acetate and NaOH to pH≥9
5: NaOH to pH≥12 and 0.6g ascorbic acid

Total # of coolers: 1
FedEx airbill #(s):

SPECIAL INSTRUCTIONS:

320-22881 Chain of Custody

REPORT DATA TO:
HGL
Attn: J. DeVaughn
(330) 840-9449
jdevaughn@hgl.com

rec'd trip blanks on 10-21-16

Arc-T: 7.7°C
TAWS: 2.2°C

11/14/2016

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone (916) 373-5600 Fax (916) 372-1059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Smith, Micah	Carrier Tracking No(s):	COC No: 320-78376.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: micah.smith@testamericainc.com	State of Origin: Alaska	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): DoD ELAP - A2LA		Job #: 320-22881-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 11/2/2016			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: JBER Soil/Water	Project #: 32008677			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1010A	8151A_DOD5/8151A_AP Herbicide (Aqueous)	9012B_DOD5/9012B_Prep Cyanide, Total	9034/9030B	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
JBER-WW001 (320-22881-1)	10/20/16	10:40 Alaskan		Water			X	X	X	X	3	DOD Q5

Note: Since laboratory accreditations are subject to change. TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/21/16 1630	TAWS	[signature]	10-22-16 0840	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.3 2 R H 5 6.0 Transfer RP 10-22-16

Login Sample Receipt Checklist

Client: HydroGeoLogic Inc

Job Number: 320-22881-1

Login Number: 22881
List Number: 2
Creator: Hytrek, Cheryl

List Source: TestAmerica Sacramento

Question	Answer	Comment
Did cooler come with a shipping slip (air bill, etc.)?	True	
If YES, enter carrier name and airbill number.	True	ALASKA AIRLINES/2751839340
Were custody seals on outside of cooler?	True	
How many & where?	True	1-FRONT
Seal Date/Seal Name	True	
Were custody seals unbroken and intact at the date and time of arrival?	True	
Were samples screened for radioactivity using the Geiger counter?	N/A	
Were custody papers in a plastic bag & taped inside to the lid?	True	
Were custody papers filled out properly (ink, signed , etc.)?	True	
Were custody papers signed in the appropriate place?	True	
Was the project identifiable from the custody papers?	True	
If YES, enter project name.	True	JBER VI STUDY
Were temperature blanks used?	True	
Cooler Temperature(s)/Thermometer ID No.	True	2.2/AK THERMOMETER
Initials of designated person to acknowledge receipt of cooler.	True	SM
Describe type of packing in cooler	True	BUBBLE WRAP
Were all bottles sealed in separate plastic bags?	True	
Did all bottles arrive unbroken with labels in good condition?	True	
Were all bottle labels complete (ID, date, time, signature, preservative, etc.)?	True	
Did all bottle labels agree with custody papers?	False	REC'D TRIP BLANKS NOT ON COC
Were correct containers used for the tests indicated?	True	
Were samples preserved to correct pH, if applicable?	True	
Was a sufficient amount of sample sent for tests indicated?	True	
Were bubbles absent in the volatile organic analysis (VOA) samples?	True	
If NO, list VOA samples.	True	
Was the Project Manager called and status discussed?	True	
Who was called? By Whom?	True	

Login Sample Receipt Checklist

Client: HydroGeoLogic Inc

Job Number: 320-22881-1

Login Number: 22881
List Number: 3
Creator: Muniz, Ashley T

List Source: TestAmerica Denver
List Creation: 10/22/16 01:12 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	