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Date: JUN 30 2014
Refer To: EP2014-0264

John Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
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Subject: Submittal of the Results of 2013 Sediment Monitoring in the Water Canyon and Cañon de Valle Watershed

Dear Mr. Kieling:

Enclosed please find two hard copies with electronic files of the Results of 2013 Sediment Monitoring in the Water Canyon and Cañon de Valle Watershed.

This document was requested by the New Mexico Environment Department in its approval of Reconnaissance Survey Report for Post–Las Conchas Fire Flooding in Water Canyon/Cañon de Valle, dated October 11, 2012 (HWB-LANL-12-043). This submittal meets the requirement for 3 yr of post-fire monitoring. In its April 4, 2014, extension request (EP2014-0122), Los Alamos National Laboratory requested a 60-day extension to submit this report because of delays in field work caused by the September 2013 floods and the early November 2013 snow fall. Submission of this report meets the June 30, 2014, due date for this deliverable.

If you have any questions, please contact Steve Veenis at (505) 667-0013 (veenis@lanl.gov) or Woody Woodworth at (505) 665-5820 (lance.woodworth@nnsa.doe.gov).

Sincerely,

Jeff Mousseau, Associate Director
Environmental Programs
Los Alamos National Laboratory

Sincerely,

Peter Maggiore, Assistant Manager
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JM/PM/DM/SV:sm

Enclosures: Two hard copies with electronic files – Results of 2013 Sediment Monitoring in the Water Canyon and Cañon de Valle Watershed (LA-UR-14-24617)

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LA-UR-14-24617
June 2014
EP2014-0264

Results of 2013 Sediment Monitoring in the Water Canyon and Cañon de Valle Watershed

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Prepared by the Environmental Programs Directorate

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EP2014-0264

Results of 2013 Sediment Monitoring in the Water Canyon and Cañon de Valle Watershed

June 2014

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1.0 INTRODUCTION

This report presents the results obtained from geomorphic characterization and sediment samples collected in Water Canyon and Cañon de Valle in 2013. Together, these drainage systems and their tributaries comprise the Water Canyon and Cañon de Valle watershed. Water Canyon and Cañon de Valle are the largest drainages within the watershed and are the only canyons in the watershed that head on the flanks of the Sierra de los Valles rather than on the Pajarito Plateau. Cañon de Valle is tributary to Water Canyon; therefore, the Water Canyon watershed refers to Water Canyon, Cañon de Valle, and their tributaries. These field activities satisfy a requirement within the New Mexico Environment Department's (NMED's) notice of approval, dated October 11, 2012 (NMED 2012, 521359), of the Reconnaissance Survey Report for Post–Las Conchas Fire Flooding in Water Canyon and Cañon de Valle (LANL 2012, 223032) and fulfills recommendations for sampling of 2013 monsoon sediment deposits contained in the "Results of 2012 Sediment Monitoring in the Water Canyon and Cañon de Valle Watershed" (LANL 2013, 241083) which, in turn, fulfilled the NMED's notice of disapproval for the investigation report (IR) for Water Canyon/Cañon de Valle, dated February 14, 2012 (NMED 2012, 211217). The approval of the reconnaissance survey accepted Los Alamos National Laboratory's (the Laboratory's) recommendation for continued post–monsoon season sediment sampling to assess possible impacts from additional flooding on the potential for erosion and downcanyon transport of contaminants (NMED 2012, 521359). In lieu of a Phase II investigation report, the approval of the reconnaissance survey also included a requirement to provide the results of annual sampling in a report to NMED by April 30, 2013, and April 30, 2014. Because of the lapse in appropriations in fall 2013 and the subsequent gradual restarting of approved activities at the Laboratory, most of the fall 2013 field season was lost. Therefore, samples of 2013 sediment deposits could not be collected until March and April 2014, after the ground had thawed following winter 2013–2014. In response to a request from the Laboratory, NMED granted an extension from the annual sampling report to June 30, 2014 (LANL 2014, 255417). This report satisfies that requirement for sampling conducted in 2013.

In June and July 2011, the Las Conchas fire burned the headwaters of Cañon de Valle and Water Canyon west of NM 501 (Figure 1.0-1). Approximately 16.9 km^2 of the Water Canyon and Cañon de Valle watershed was within the burn perimeter, comprising 34% of the watershed. Within that burn perimeter, 46% was classed as high- or moderate-severity burn, and 54% was identified as low-severity burn or unburned (LANL 2011, 206488). The upper Cañon de Valle watershed was burned more intensely than the upper Water Canyon watershed. Sixty percent of the Cañon de Valle watershed was classified as high- or moderate-severity burn, whereas only 36% of the upper Water Canyon watershed was severely burned (LANL 2011, 206488). Floods in September 2013 impacted both canyons, causing localized scouring in parts of the canyons and sediment deposition in other areas. Smaller floods in July and August 2013 resulted in minor scouring and/or minor sediment deposition. This report focuses on the effect of floods, primarily the September 2013 floods, on the geomorphology and sediment chemistry following the 2013 monsoon season.

1.1 Background

Previous sediment investigations, including geomorphic mapping, associated geomorphic characterization, and sediment sampling, were conducted in 25 investigation reaches in 2010 and 2011 using the methods described in the Water Canyon/Cañon de Valle IR (LANL 2011, 207069). Fourteen of the 25 investigation reaches are located below areas of the Water Canyon/Cañon de Valle watershed that burned during the Las Conchas fire. These data represent a baseline from which post–Las Conchas flood effects can be evaluated.

Field activities were conducted in the summer and fall of 2011 and in the summer of 2012 in the 14 reaches located downstream of the area that burned during the Las Conchas fire to evaluate post–Las Conchas fire effects from 2011 monsoon season flood events on the Water Canyon/Cañon de Valle watershed. The effects of the first year of post–Las Conchas floods were documented in the "Reconnaissance Survey Report for Post–Las Conchas Fire Flooding in Water Canyon and Cañon de Valle" (LANL 2012, 223032).

Nine of the reaches located downstream of the area that burned during the Las Conchas fire were revisited in the fall of 2012 and winter of 2013 to evaluate post–Las Conchas fire effects from 2012 monsoon season flood events. Fine-grained sediment samples were collected from eight of these reaches. One reach (WA-5) was visited during a field reconnaissance but was not sampled because fine sediment of significant thickness (0.5 to 1 cm thick or more) was absent in the reach in 2013. The effects of the second year of post–Las Conchas floods were documented in the "Results of 2012 Sediment Monitoring in the Water Canyon and Cañon de Valle Watershed" (LANL 2013, 241083).

Ten of the reaches located downstream of the area that burned during the Las Conchas fire (including the nine visited in fall 2012–winter 2013) were revisited in the fall of 2013 and spring of 2014 to evaluate post–Las Conchas fire effects from 2013 monsoon season flood events. Sediment samples were collected from all 10 of these reaches. One reach (CDV-3) not visited in fall 2012and winter 2013 was revisited fall 2013 and spring 2014.

2.0 FIELD ACTIVITIES

2.1 Samples Collected and Analyses Performed

Field activities completed in the spring 2014 included collecting post–Las Conchas fire sediment samples from seven of the original investigation reaches, plus two upstream baseline reaches above the Laboratory boundary and one reach downstream of the original investigation reaches, just above the confluence with the Rio Grande. Sampling followed the methods used for the 2011 post-flood sediment sampling campaign (LANL 2012, 223032). Figure 1.0-1 shows the 2011, 2012, and 2013 sampling locations in the Water Canyon and Cañon de Valle watershed. Table 2.1-1 presents the requested analytical suites for each sample collected from Water Canyon and Cañon de Valle in 2013. The majority of samples collected were fine-grained sediment; however, a subset of coarse-grained samples was also collected to characterize coarse-facies deposits (Tables 2.1-1 and 2.1-2). The fine-grained sediment samples did not contain the predominance of ash noted in the previous 2 yr of sampling.

Analytical results for the sediment samples from the Water Canyon watershed are included as Appendix A (on CD). Tables 2.1-3 and 2.1-4 present the 2013 sampling results above sediment background values (BVs) (LANL 1998, 059730) for inorganic chemicals and detected results for organic chemicals within the Water Canyon and Cañon de Valle watershed, respectively. Relevant historical data are also presented to compare post-fire data with the historical range of concentrations of key chemicals of potential concern (COPCs) (see section 3.3 below).

2.2 Geomorphic Cross-Section Surveying

A series of cross-sections was established and surveyed within the investigation reaches in 2010 and 2011 (LANL 2011, 207069; LANL 2012, 223032). In fall 2013 and spring 2014, 10 cross-sections were surveyed to document erosion or deposition and to depict the geomorphic context of 2013 sediment samples (Figures 2.2-1 to 2.2-10). Geomorphic characterization followed the methods used for the 2011 post-flood sediment sampling campaign (LANL 2012, 223032). Cross-sections were surveyed using a hand level, tape measure, and stadia rod. Post-2013 monsoon season cross-sections are compared with

pre-2013 monsoon season cross-sections to determine erosion and deposition from post-fire flood events at discrete locations within the sediment investigation reaches (Figures 2.2-1 to 2.2-10). Previously completed cross-sections were reoccupied using rebar installed at the starting and ending points of all cross-sections surveyed during the prior field investigations. Post–Las Conchas erosion was determined based on the comparison between the post-2013 monsoon season surveyed profile and pre-2013 monsoon season profile and pre-2011 geomorphic mapping (LANL 2011, 207069). Where deposition occurred on the cross-sections as a result of 2013 monsoon floods, potholes were dug to characterize the 2013 sediments as coarse or fine facies.

3.0 RESULTS

3.1 Post-Fire Surface Flow Changes

Data on stream discharge after wildfires indicate peak discharge can increase up to several orders of magnitude relative to pre-fire conditions and that the largest post-fire floods typically occur within the first 3 yr after a fire. The time period in which runoff remains elevated varies between watersheds and between fires as a function of burn severity, the rate and nature of watershed recovery, and the occurrence of high-intensity rainfall events. An analysis of annual maximum discharges from 1994 to 2009 for gages in watersheds affected by the May 2000 Cerro Grande fire indicated that peak annual discharge increased up to several orders of magnitude relative to pre-fire conditions (LANL 2012, 223032). At these gages, peak discharges returned to at or near pre-fire conditions after 1 to 7 yr, although some elevated discharges were not entirely related to hydrologic changes caused by the Cerro Grande fire (e.g., Pueblo Canyon where townsite-generated runoff is a factor). Excluding Pueblo Canyon, flows commonly remained elevated for up to 3 yr, indicating watersheds affected by the June 2011 Las Conchas fire could experience significantly greater flows through 2013.

Supporting information on the effects of wildfires on the hydrology of streams on the Pajarito Plateau is provided by studies of Frijoles and Capulin Canyons in Bandelier National Monument after the June 1977 La Mesa fire and the April 1996 Dome fire (Veenhuis 2002, 082605). After these fires, peak flows increased to about 160 times the maximum recorded before the fire. By the third year, maximum annual peak flows had decreased to about 3 to 5 times the pre-fire maximums as the watersheds recovered. The frequency of larger stream flows also increased after the La Mesa and Dome fires, remaining elevated for the first 3 yr. The data from Frijoles and Capulin Canyons support the inference that significantly altered hydrologic conditions could persist through 2013 in watersheds affected by the Las Conchas fire.

Maximum discharge in Water Canyon after the Cerro Grande fire was estimated at 840 cubic feet per second (cfs) measured at gaging station E252 above NM 501 and decreased downstream to 274 cfs at gaging station E265 below NM 4 (LANL 2012, 223032). Maximum discharge in Cañon de Valle was estimated at 740 cfs, measured at gaging station E253 above NM 501 (LANL 2012, 223032). A larger discharge flood event occurred on August 21, 2011, following the Las Conchas fire. Total precipitation for the August 21 event was 2.52 in., with a maximum 30-min intensity of 1.55 in. recorded at gaging station E257. The E252, E253, and E265 stream gages were destroyed during this flood event; however, peak-flow estimates were made using the area-slope method, based on cross-sections measured between high-water lines and the stream gradient. Flow estimates for the August 21, 2011, flood event ranged from 1450 cfs for Cañon de Valle above NM 501 to 1500–1600 cfs for Water Canyon above NM 501. Combined discharge in Water Canyon below NM 4, downstream of the confluence of Cañon de Valle and Water Canyon, was estimated at approximately 2400 cfs (LANL 2013, 241083). For comparison, maximum discharge at the gaging stations above NM 501 for the time period from 2003 to 2009, after the first 3 yr of post-Cerro Grande runoff but before the Las Conchas fire, was 6.4 cfs at E252 and 8.5 cfs at E253 (LANL 2012, 223032).

The maximum 2012 flood discharge, recorded on July 11, 2012, at the reconstructed stream gages, was much lower than the 2011 maximum discharge: 135 cfs at gaging station E253 for Cañon de Valle above NM 501 and 118 cfs at gaging station E252 for Water Canyon above NM 501 (LANL 2013, 241083). Combined discharge in Water Canyon below NM 4, downstream of the confluence of Cañon de Valle and Water Canyon was 250 cfs at gaging station E265 during the July 11 event (LANL 2013, 241083). Total precipitation for the July 11 event was 1.89 in., with a maximum 30-min intensity of 1.77 in. recorded at gaging station E253 (LANL 2013, 241083).

The maximum 2013 flood discharge, recorded on September 13, 2013, was less than the 2011 maximum discharge but greater than the 2012 maximum discharge: 309 cfs at gaging station E253 for Cañon de Valle above NM 501 and 429 cfs at gaging station E252 for Water Canyon above NM 501 (Table 3.1-1). Combined discharge in Water Canyon below NM 4, downstream of the confluence of Cañon de Valle and Water Canyon was 400 cfs at gaging station E265 during the September 13 event (Table 3.1-1). Unlike the previous runoff events in the previous 2 yr, which were in response to a single-day, high-intensity storm event, the September 13 event followed several days of unusually heavy precipitation. Total precipitation from September 9 to 14 at rain gage RG-265 was 8.1 in., with a maximum daily total of 3.1 in. on September 12 and 1.3 in. on September 13 (Table 3.1-1). Although the maximum 2013 discharge is less than the maximum 2011 discharge, it was nearly 2 orders of magnitude higher than the maximum discharge observed in nonfire-affected years (during or within 3 yr of major fires).

3.2 Geomorphic Evaluation

Cross-sections from reaches sampled after the 2013 monsoon season (exclusive of baseline reaches and reaches WA-5, located downstream of NM4 and WA-6, upstream of the Water Canyon-Rio Grande confluence) depicting areas of erosion, sediment deposition, or minor bank erosion and deposition on adjacent floodplain surfaces are shown in Figures 2.2-1 to 2.2-10 and are described below. Figure 3.2-1 shows an example of sediment deposition in CDV-3 in an area scoured by the August 21, 2011, flood. Figure 3.2-2 shows a 2013 gravel bar deposited on a former f1 floodplain surface in reach CDV-2E.

Cross-sections were surveyed at or near sampling locations in reaches CDV-1C, CDV-2E, CDV-3, CDV-4, WA-3, and WA-4. All cross-sections reoccupied previous cross-section locations. These cross-sections provide a transect of the Cañon de Valle/Water Canyon drainages from below NM 501 to the Laboratory boundary above NM 4. The cross-section located farthest upstream in the Cañon de Valle/ Water Canyon drainage, in reach CDV-1C, shows deposition of coarse-grained 2013 sediments in the active channel and deposition of thin, fine-grained sediment deposits on the former f1 surface (Figure 2.2-1). This area experienced erosion within the active channel, scouring of a 2011 gravel bar and minor fine-grained sediment deposition in 2012. The cross-sections in reach CDV-2E show deposition of 2013 coarse-gravel bars on lower geomorphic surfaces, less extensive fine-grained sediment deposition primarily on higher geomorphic surfaces, and minor erosion associated with channel scouring (Figures 2.2-2 and 2.2-3). This area also experienced deposition on post-1942 geomorphic surfaces and on a former pre-1943 fluvial terrace surface, along with minor erosion of pre-1943 alluvium and post-1942 sediment deposits in 2011 and/or 2013 floods. Reach CDV-3 experienced extensive erosion during 2011 monsoonal floods (LANL 2012, 223032). CDV-3 cross-sections from November 2013 show additional erosion, primarily of pre-1943 alluvium associated with channel scouring and widening (Figures 2.2-4 through 2.2-6), Some relatively minor deposition also occurred at cross sections in reach CDV-3, primarily consisting of coarse sediment deposits within the main or side channel, and secondarily consisting of fine-gradient sediment deposits on higher post-1942 geomorphic surfaces (Figures 2.2-5 and 2.2-6). The reach CDV-4 cross-section shows erosion of post-1942 channel (c2) and flood plain (f1) deposits and deposition of coarse-grained 2013 sediment deposits on an f1 surface and within the active channel (Figure 2.2-7). In 2012, this area did not experience erosion, with the exception of localized scouring

outside the active channel, and had thin, fine sediment deposition on flood plain surfaces (Figure 2.2-7). The reach WA-3 cross-section shows deposition across most of the section, with 30–40 cm of mostly coarse 2013 sediment within a broad channel area that has buried the post-1942, pre–Las Conchas deposits and adjacent pre-1943 alluvium (Figure 2.2-8). Some minor erosion of pre-1943 alluvium and post–Las Conchas sediment deposits has also occurred. This pattern of deposition across most of the cross-section and minor erosion was also observed following the 2012 monsoon season (Figure 2.2-8). The deposition along the cross-section in reach WA-3 is likely the result of its location above a prominent log jam noted in the post-2011 monsoon investigation (LANL 2012, 223032). The reach WA-4 cross-sections show erosion of post-1942 channel (c1, c2) and floodplain (f1) deposits and erosion of pre-1943 alluvium across large areas of each cross section (Figures 2.2-9 and 2.2-10). A coarse-grained 2013 gravel bar was deposited where former f1 deposits were scoured and fine-grained sediments were deposited on former f1 and Qt surfaces at the downstream cross-section (Figure 2.2-10). These observations are in contrast to only minor changes observed at this location from the 2012 floods (Figure 2.2-10).

The overall trend observed in the cross-sections surveyed following the 2013 monsoon season is of more extensive erosion than observed following 2012 monsoon flood events and greater coarse-grained sediment deposition than observed during the previous 2 yr of post-Las Conchas monsoon season flooding. Upstream reaches (CDV-1C, CDV-2E, and CDV-3) experienced more extensive erosion of pre-1943 alluvium along with deposition of coarse-grained gravel bars (CDV-2E). Downstream reaches, including CDV-4 and WA-4, experienced more extensive erosion of post-1942 channel and floodplain deposits, along with erosion of pre-1942 alluvium and deposition of mostly coarse-grained 2013 sediment deposits. These conditions would result in downstream transport of sediment from both pre-1942 alluvium and from post-1942 geomorphic units with either low concentrations of key constituents (c1, c2), or higher concentrations (c3, f1). The greater proportion of sediment is from a combination of pre-1942 alluvium and from post-1942 c1 and c2 geomorphic units. A slightly different trend of erosion of coarse-grained c1 and c2 units and preservation of fine-grained f1 units was observed in the post-2011 monsoon/pre-2012 monsoon investigation (LANL 2012, 223032). Localized conditions, such as the log jam in reach WA-3, can result in localized aggradation of fine- and coarse-grained sediment deposits (LANL 2013, 241083).

3.3 Post-Fire Sediment Contaminant Evaluation

Barium, RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine), and polychlorinated biphenyls (PCBs) have been identified as key COPCs in Water Canyon and Cañon de Valle (LANL 2011, 207069). Data from post–Las Conchas fire sediment samples collected in Water Canyon and Cañon de Valle (Table 2.1-1) are used to evaluate the sources of these COPCs in post-fire flood deposits. Samples collected in the spring of 2014 include deposits from the 2013 monsoon season flood events. The spring of 2014 sample results are compared with samples from the 2012 and 2011 monsoon season flood events (LANL 2013, 241083; LANL 2012, 223032) and pre-2011 samples collected for the investigation report (LANL 2011, 207069).

Barium is elevated above the sediment BV (127 mg/kg) in 2011 post–Las Conchas fire baseline sediment samples (reaches CDV-0 and WA-0 above NM 501; Figure 3.3-1) as a result of elevated barium in Las Conchas fire ash. Barium concentrations in 2013 baseline samples are below the sediment BV in all four samples collected (three fine-grained samples and one coarse-grained sample), none of which contain ash (Table 2.1-3). Barium concentrations in post-fire sediment samples increase in reaches below the Technical Area 16 (TA-16) 260 Outfall (reach CDV-2E) associated with the partial remobilization of contaminated sediment deposits and decreases downstream (Figure 3.3-1). The variation in 2013 barium concentrations (and concentrations of most other COPCs, described below) in individual reaches exhibits an inverse relationship to particle size (finer-grained samples correspond to higher barium concentrations in predominantly ash-free 2013 sediment). This trend is shown most clearly in reaches CDV-4 and WA-3,

where samples with a median particle size of coarse silt, in both reaches, have a barium concentration greater than 700 mg/kg, whereas samples with a median particle size of medium to coarse sand have a barium concentration between 108 (which is below the sediment BV for barium) and 203 mg/kg (Figure 3.3-1, Tables 2.1-2 and 2.1-3, and Appendix A). Ash was generally absent from 2013 samples; therefore, the relationship of ash in samples corresponding to higher barium concentration noted in previous year's samples (LANL 2011, 207069; LANL 2013, 241083) was not a significant factor in 2013. The 2013 barium concentrations are well within the concentration distribution documented in the Water Canyon/Cañon de Valle IR (LANL 2011, 207069; Figure 3.3-2). Below NM 4 (reaches WA-5 and WA-6), barium concentrations in 2013 sediment samples are below the barium BV (Figure 3.3-1). Therefore, barium from Laboratory sources is indistinguishable from barium background concentrations in these downstream reaches.

PCB congeners from sediment or water samples can be grouped together into 10 homologs, based on the number of chlorine atoms on the biphenyl rings, which allows visual comparison of similarities or differences between samples or groups of samples (Reneau et al. 2007, 102886). Figure 3.3-3 shows average homolog percentages in each of the sediment samples from Water Canyon and Cañon de Valle collected in 2011, 2012, and 2013. The 2013 PCB congener data are consistent with the 2011, 2012, and previous sediment data, indicating several PCB sources with at least two sources in the Cañon de Valle watershed (one possibly below the 260 Outfall above reach CDV-2E and another above reach CDV-1C) and at least one other source in the Water Canyon watershed above the confluence with Cañon de Valle (LANL 2011, 207069; LANL 2012, 223032; LANL 2013, 241083).

Total PCB concentrations are low (less than 0.004 mg/kg) in the sediment samples collected upstream of NM 501 in 2011 (reaches WA-0 and CDV-0) (Figure 3.3-4 and Table 2.1-4), reflecting baseline conditions and regional atmospheric sources. PCB concentrations increase downstream from Laboratory sources, with maximum values in single samples ranging between 0.0152 mg/kg and 0.0253 mg/kg in reaches CDV-2E, CDV-3, and WA-3 (Figure 3.3-4 and Table 2.1-4). Unlike other COPCs, total PCB concentrations are not clearly inversely related to particle size, and the highest total PCB concentration obtained (0.0253 mg/kg from CAWA-14-49271 in WA-3) was from a sample with a median particle size of coarse sand (Tables 2.1-2 and 2.1-4). Downstream of reach WA-3, the total PCB concentration decreases to less than 0.0006 mg/kg in reach WA-5 and less than 0.0002 mg/kg in reach WA-6, near the Rio Grande (Figure 3.3-4). The 2011, 2012, and 2013 total PCB concentrations are at the very low end of the concentration distribution documented in the Water Canyon/Cañon de Valle IR (LANL 2011, 207069; Figure 3.3-5), and are similar to or below baseline conditions measured in WA-0 and CDV-0 (LANL 2012, 223032).

Low concentrations of RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine) were detected in 2013 post-monsoon samples in reaches CDV-2E and CDV-3 (Table 2.1-4). Samples from all other reaches were below the method detection limit for RDX. Low concentrations of HMX (octahydro-1,3,5,7-tetranitro-1,3,5,7 tetrazocine) were detected in reaches CDV-2E, CDV-3, CDV-4, and WA-3 (Table 2.1-4). Low concentrations of TATB (triaminotrinitrobenzene) were detected in reaches CDV-2E, CDV-4, WA-3, and WA-4 (Table 2.1-4). RDX, HMX, and TATB were detected in 2013 post-monsoon sediments in more reaches were detected in 2011 or 2012 post-monsoon sediments, indicating greater redistribution of these contaminants by 2013 floods than had occurred in 2011 or 2012 (LANL 2012, 223032; LANL 2013, 241083). However, measured concentrations of RDX, HMX, and TATB in 2013 post-monsoon deposits were at the low end of the concentration distribution reported in the Water Canyon/Cañon de Valle IR (LANL 2011, 207069; Figures 3.3-6, 3.3-7, and 3.3-8, respectively).

4.0 SUMMARY

The maximum 2013 flood discharge was greater than the maximum 2012 discharge and less than the maximum 2011 discharge but was approximately 2 orders of magnitude higher than the maximum discharge observed in non-fire-affected years (during or within 3 yr of major fires). Floods during the 2013 monsoon season resulted in more extensive erosion than observed following 2012 monsoon flood events and greater coarse-grained sediment deposition than observed during the previous 2 yr of post–Las Conchas monsoon season flooding. Upstream reaches experienced extensive erosion of pre-1943 alluvium along with deposition of coarse-grained gravel bars. Downstream reaches experienced extensive erosion of post-1942 channel and floodplain deposits, along with erosion of pre-1942 alluvium and deposition of mostly coarse-grained 2013 sediment deposits. These conditions would result in downstream transport of sediment from both pre-1942 alluvium and from post-1942 geomorphic units. The greater proportion of transported sediment is from a combination of pre-1942 alluvium and from post-1942 c1 and c2 geomorphic units, resulting in downstream transport of sediment from geomorphic units with typically lower concentrations of key COPCs.

RDX, HMX, and TATB were detected in 2013 post-monsoon sediments in more reaches than had detections in 2011 or 2012 post-monsoon sediments, indicating greater redistribution of these contaminants by 2013 floods than had occurred in 2011 or 2012. Barium, high explosives (HMX, TATB), and PCB concentrations in post–Las Conchas sediment deposits show decreasing concentrations downstream from Laboratory source areas and are well within the concentration distribution documented in the Water Canyon/Cañon de Valle investigation report (LANL 2011, 207069).

5.0 RECOMMENDATIONS

The Water Canyon and Cañon de Valle watershed was subjected to significant burn impacts to headwater areas of Water Canyon and Cañon de Valle west of the Laboratory. Two large flood events damaged structures in August 2011, several significant flood events occurred from July to October 2012, and another large flood event occurred in September 2013. The resulting flood deposits, while more broadly distributed, show very low concentrations of the key COPCs, consistent with or less than pre-fire concentrations and substantially less than residential and recreational soil screening levels (SSLs) (LANL 2012, 228733; NMED 2012, 219971). Because the concentrations of key COPCs remain well below screening levels, even after the most recent post-fire flood, there is no indication of the need for mitigation actions to reduce sediment transport during future floods.

Both the sediment and storm water data from Cañon de Valle and Water Canyon yield a conceptual site model in which COPCs such as barium and PCBs are mobilized from non-Laboratory-affected burn areas above the Laboratory property and locally from affected areas within the Laboratory. COPCs from these two source areas likely mix, and for most key constituents, Laboratory contributions are indistinguishable from contributions derived from fire-affected areas. Depositional areas yield concentrations substantially lower in key COPCs, such as barium, than in reaches evaluated for risk before the 2011 fires. Thus, potential risks in depositional reaches are much lower than for reaches evaluated in the investigation report (LANL 2011, 207069).

This third year monitoring report fulfills NMED's requirement under the Phase II work plan to characterize the post-flood contaminant distribution based on three consecutive years of post-monsoon sediment sampling and geomorphic characterization of the Cañon de Valle and Water Canyon watershed. Based on the results presented above, the Laboratory does not recommend any additional post-fire characterization of the Cañon de Valle and Water Canyon watershed but recommends continued

sampling of key reaches (e.g. CDV-2E, CDV-4, WA-4, and WA-6) under the annual Surveillance Sampling program.

6.0 REFERENCES

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the EP Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

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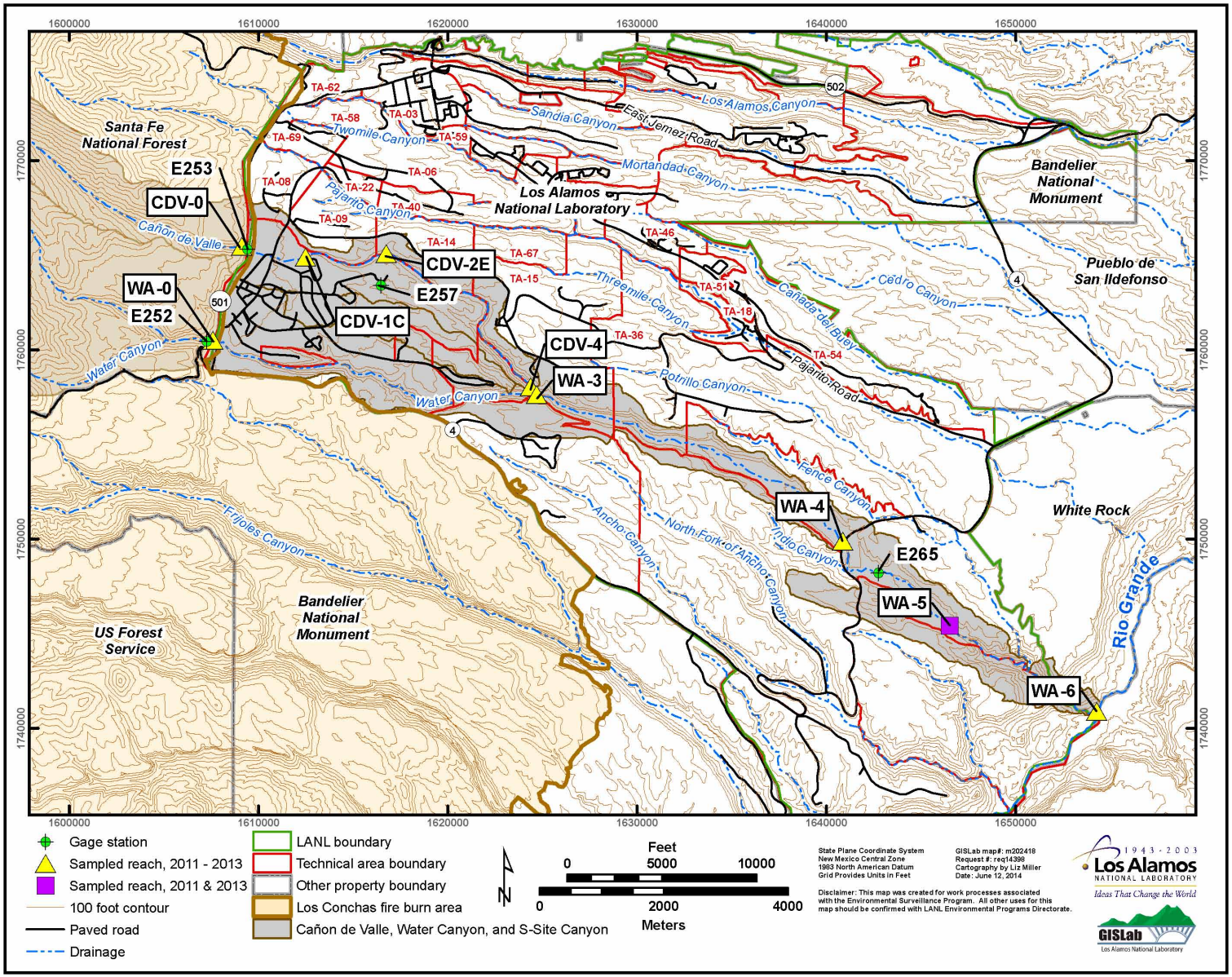


Figure 1.0-1 Sediment sampling locations in the Water Canyon and Cañon de Valle watershed in 2011–2013

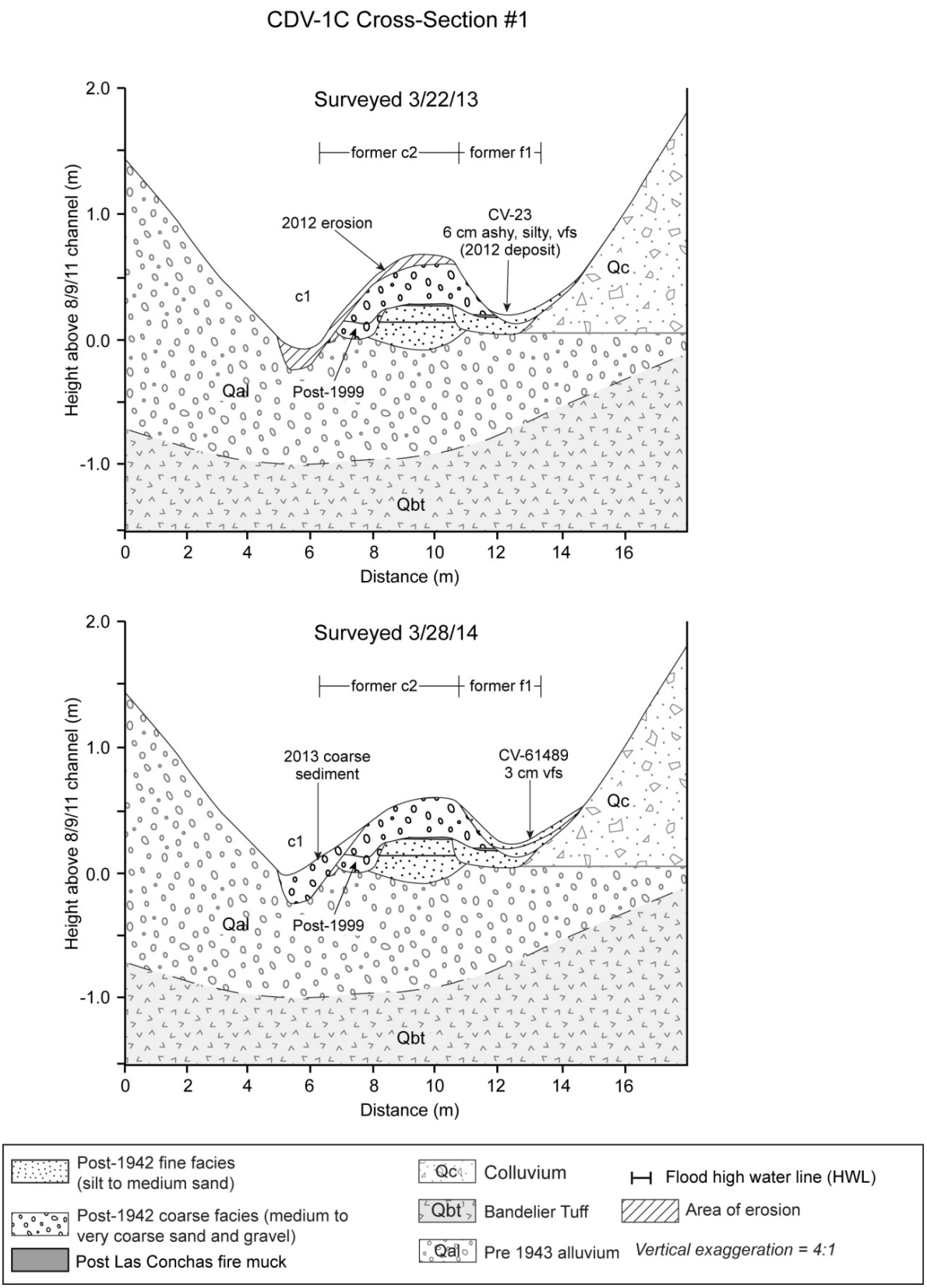


Figure 2.2-1 Geomorphic cross-sections showing 2012 and 2013 erosion and deposition in reach CDV-1C

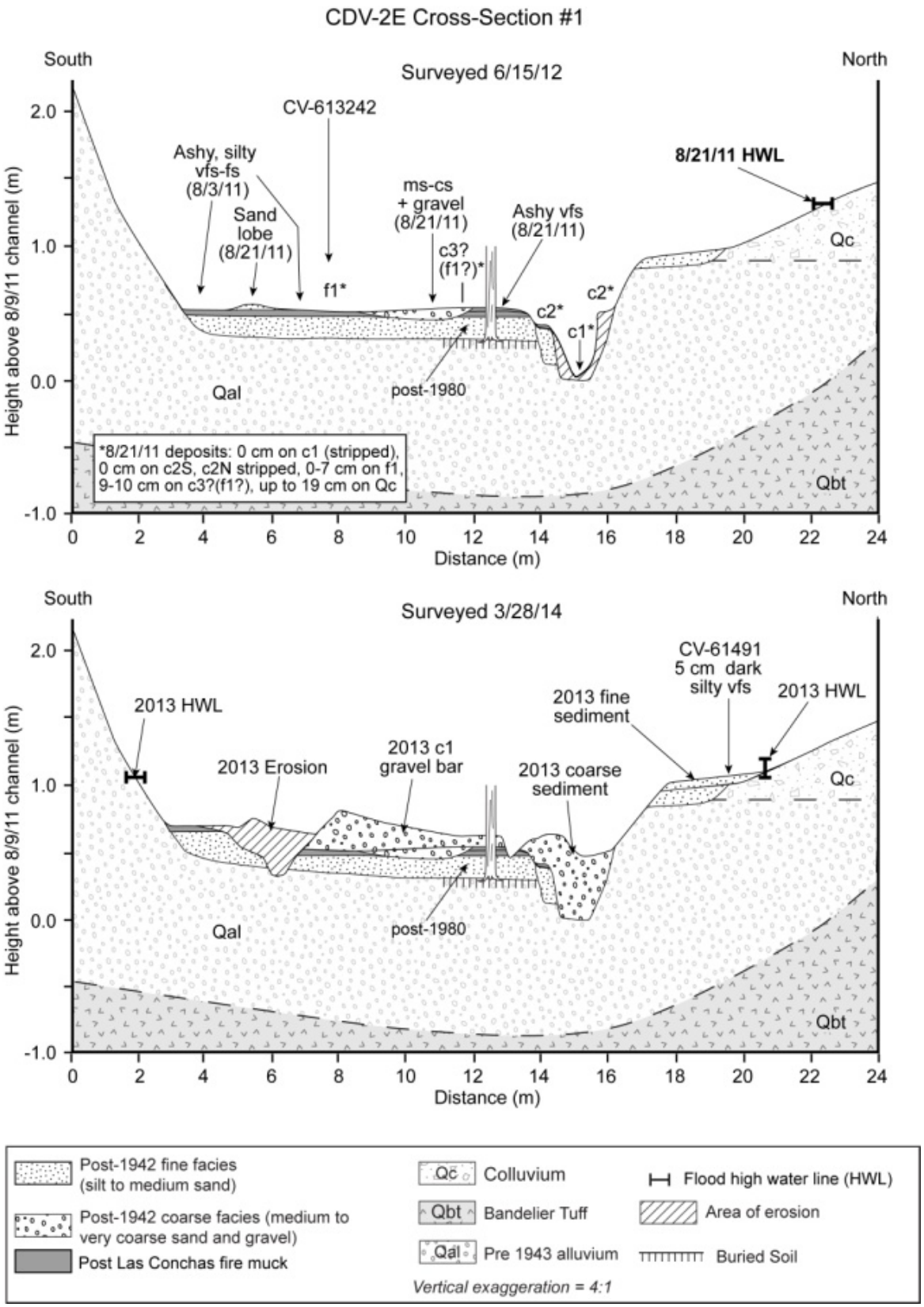


Figure 2.2-2 Geomorphic cross-sections showing 2011 and 2013 erosion and deposition in reach CDV-2E at CDV-2E cross-section #1, upstream part of reach

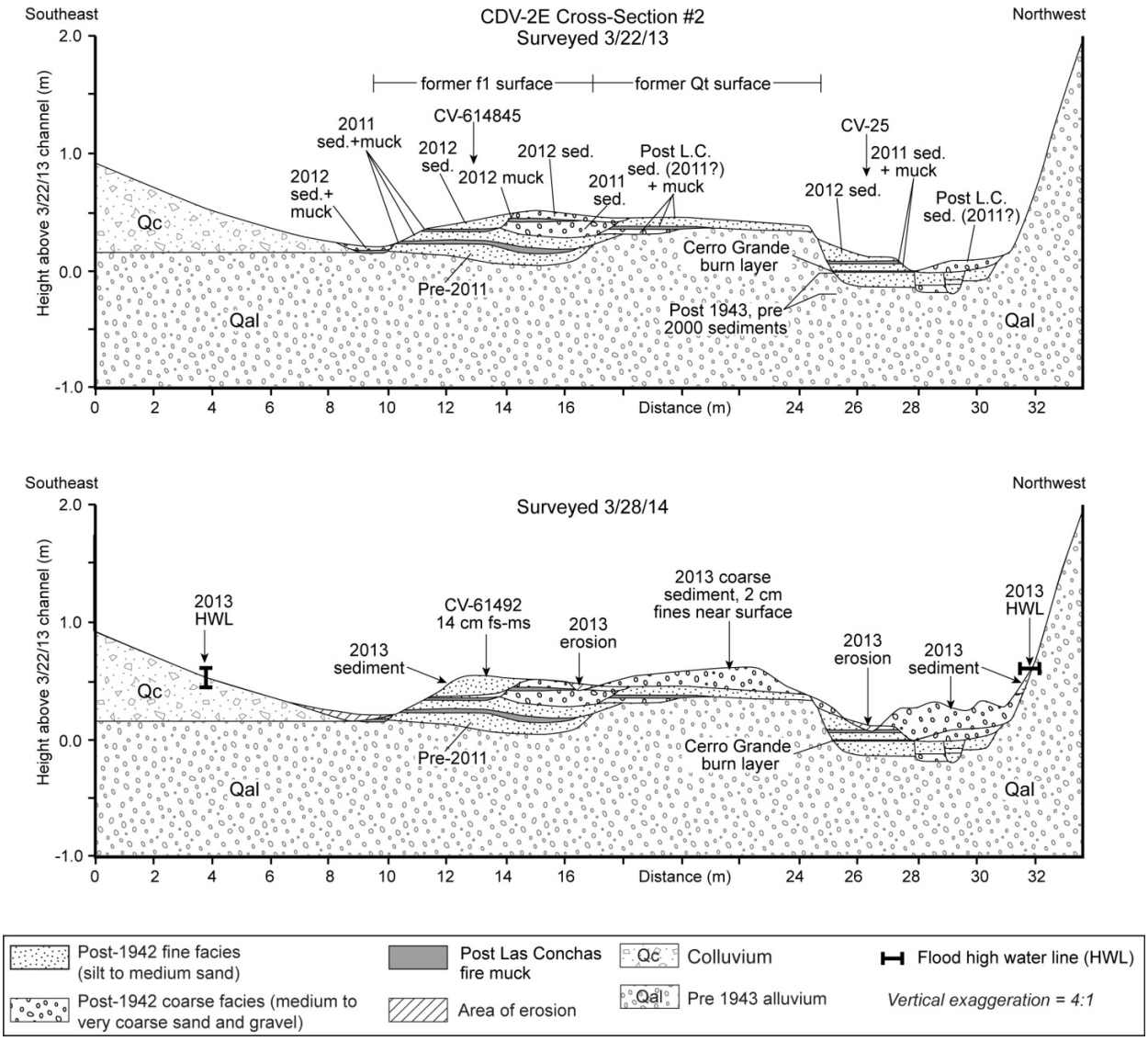


Figure 2.2-3 Geomorphic cross-sections showing 2012 and 2013 erosion and deposition in reach CDV-2E at CDV-2E cross-section #2, downstream part of reach

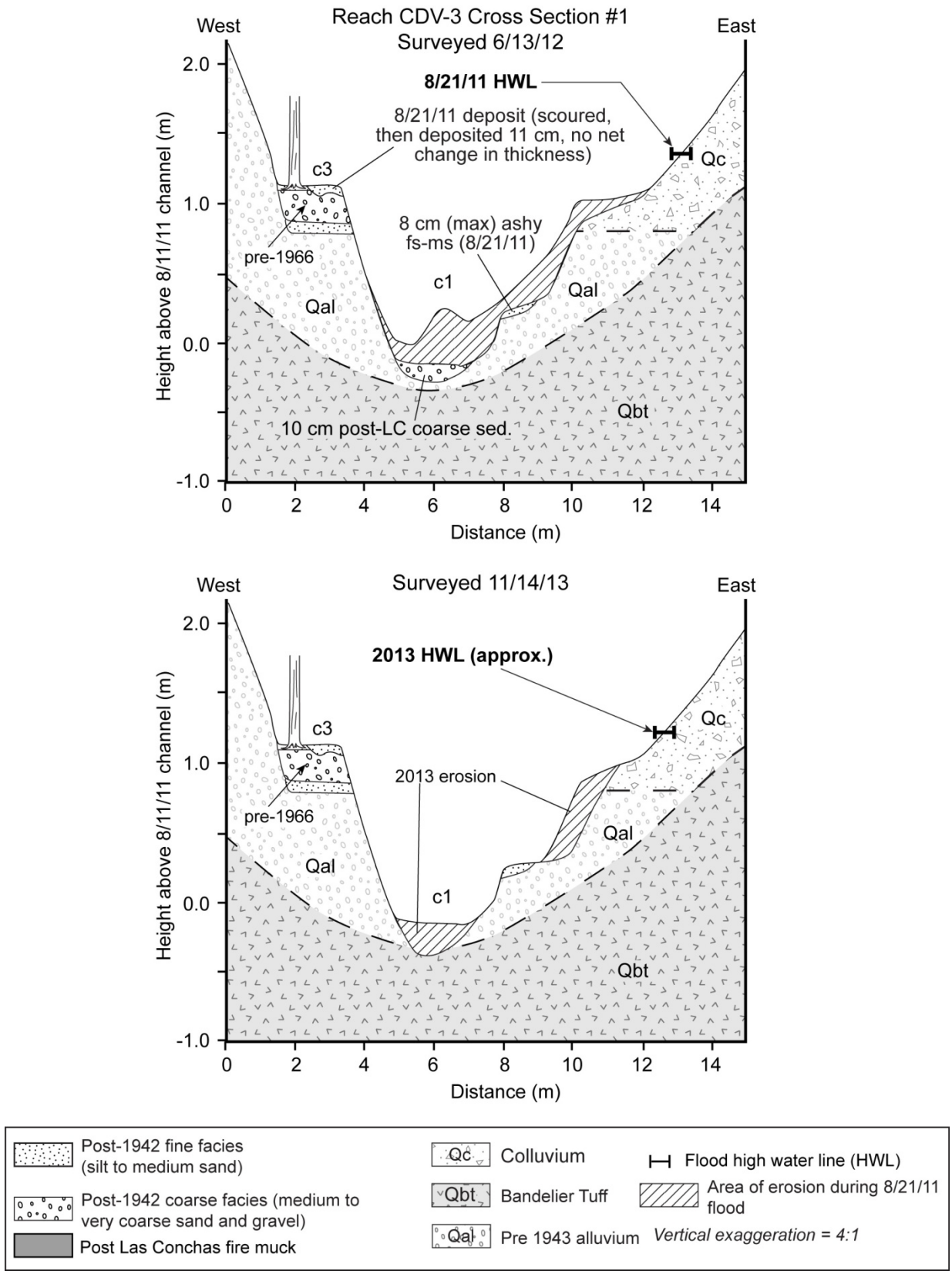


Figure 2.2-4 Geomorphic cross-sections showing 2011 and 2013 erosion and deposition in reach CDV-3 at CDV3 cross-section #1, upstream part of reach

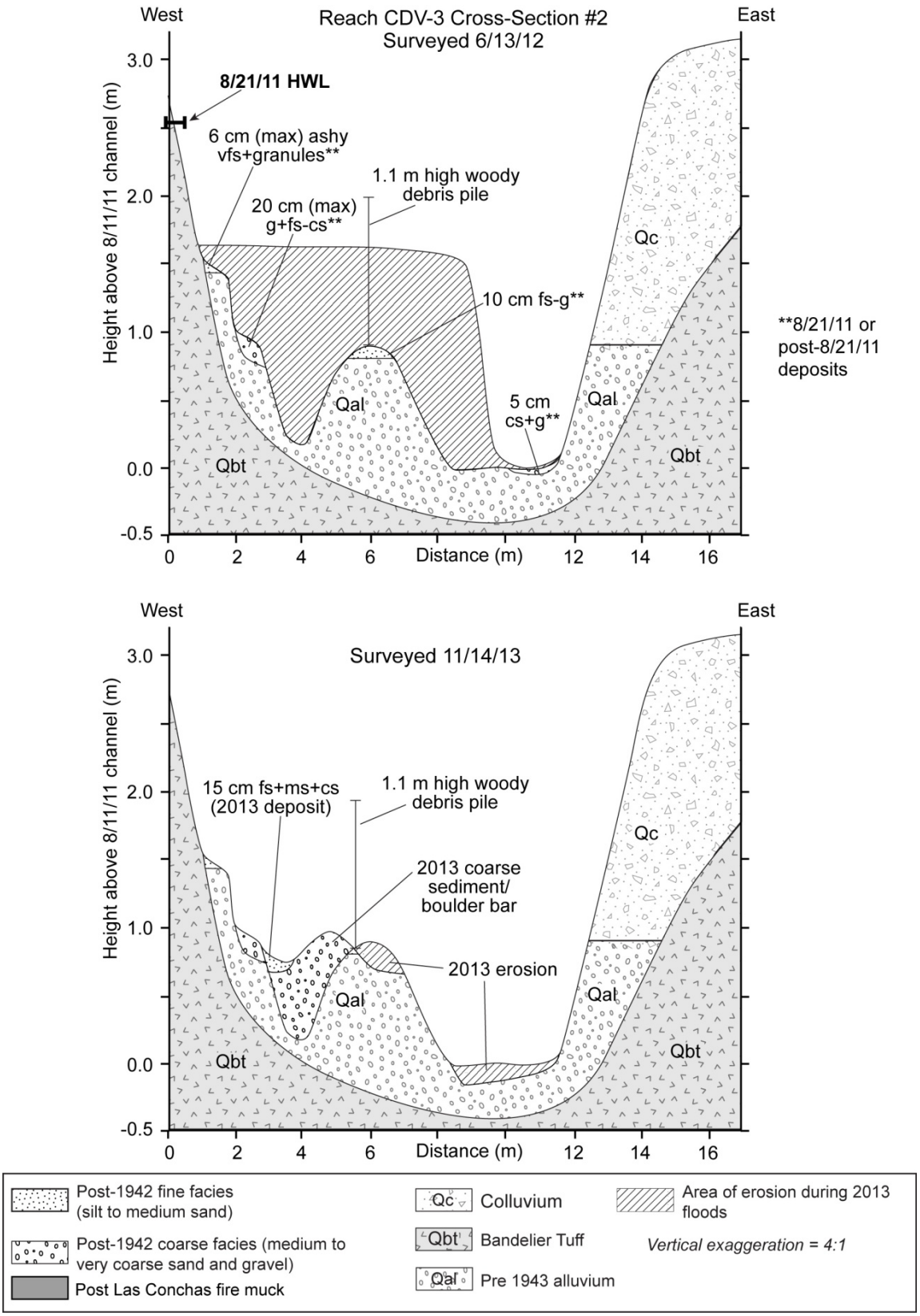
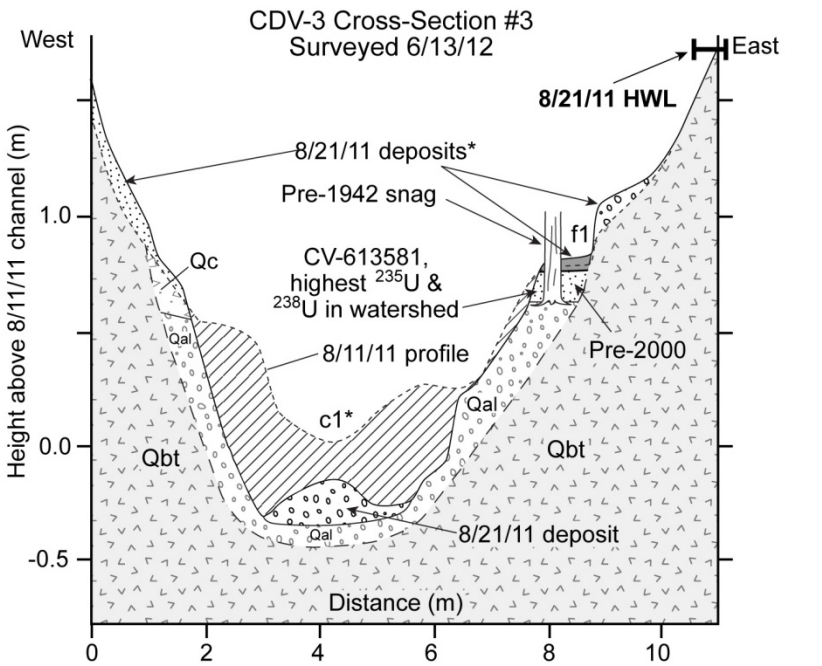
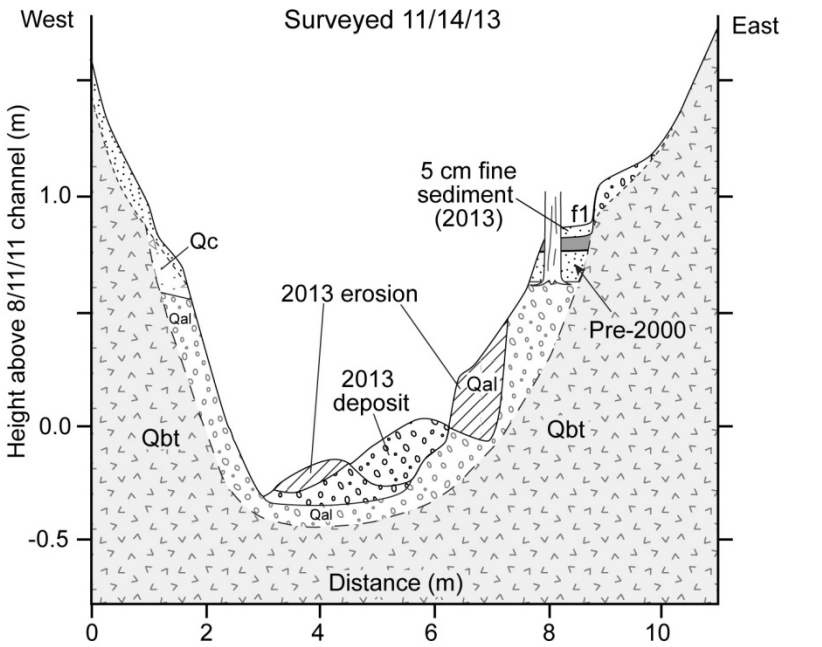


Figure 2.2-5 Geomorphic cross-sections showing 2011 and 2013 erosion and deposition in reach CDV-3 at CDV3 cross-section #2, upstream part of reach



*8/21/11 sediment thickness: 7-8 cm on Qbt/Qc, c1 scoured then 17 cm new coarse sediment deposited, 6 cm ashy vfs on f1



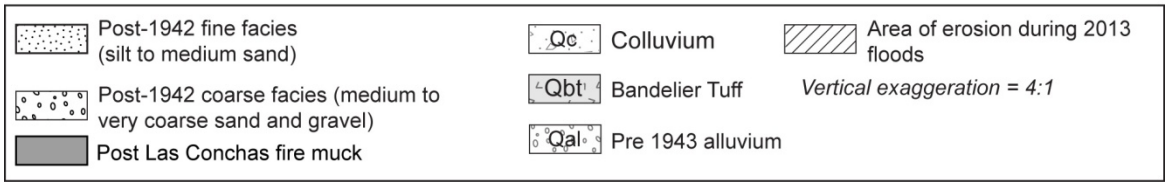


Figure 2.2-6 Geomorphic cross-sections showing 2011 and 2013 erosion and deposition in reach CDV-3 at CDV3 cross-section #3, downstream part of reach

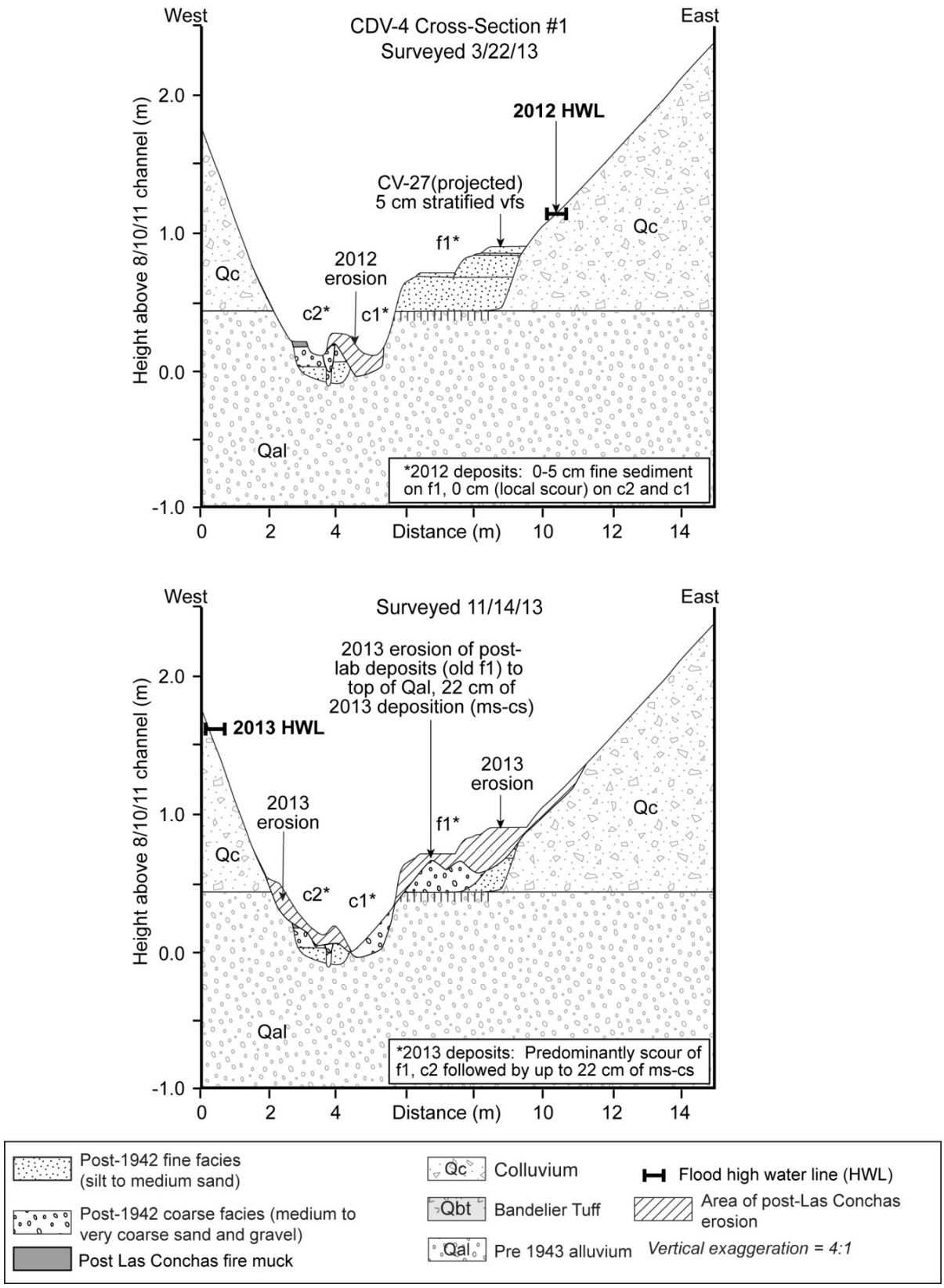


Figure 2.2-7 Geomorphic cross-sections showing 2012 and 2013 erosion and deposition in reach CDV-4

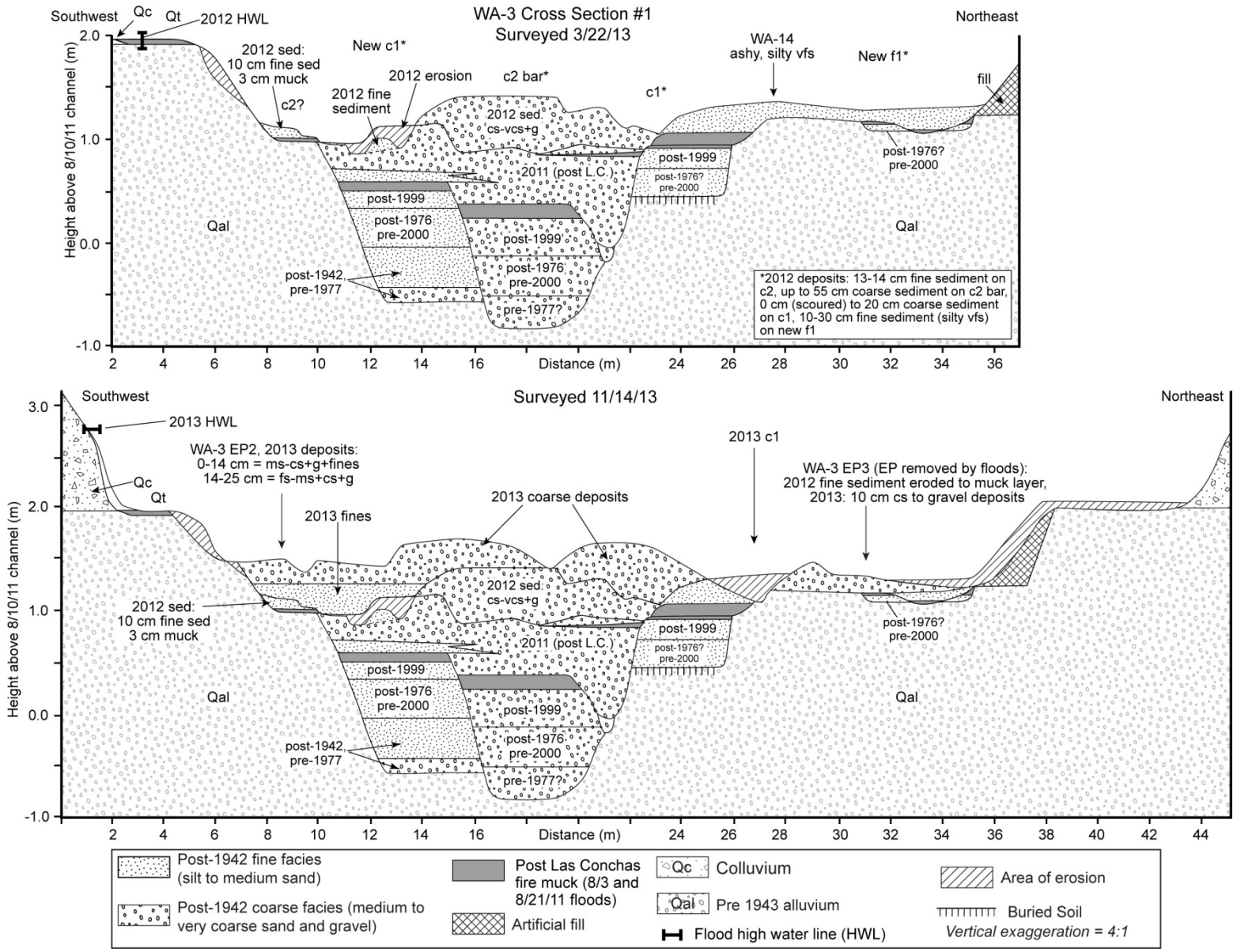


Figure 2.2-8 Geomorphic cross-sections showing 2012 and 2013 erosion and deposition in reach WA-3

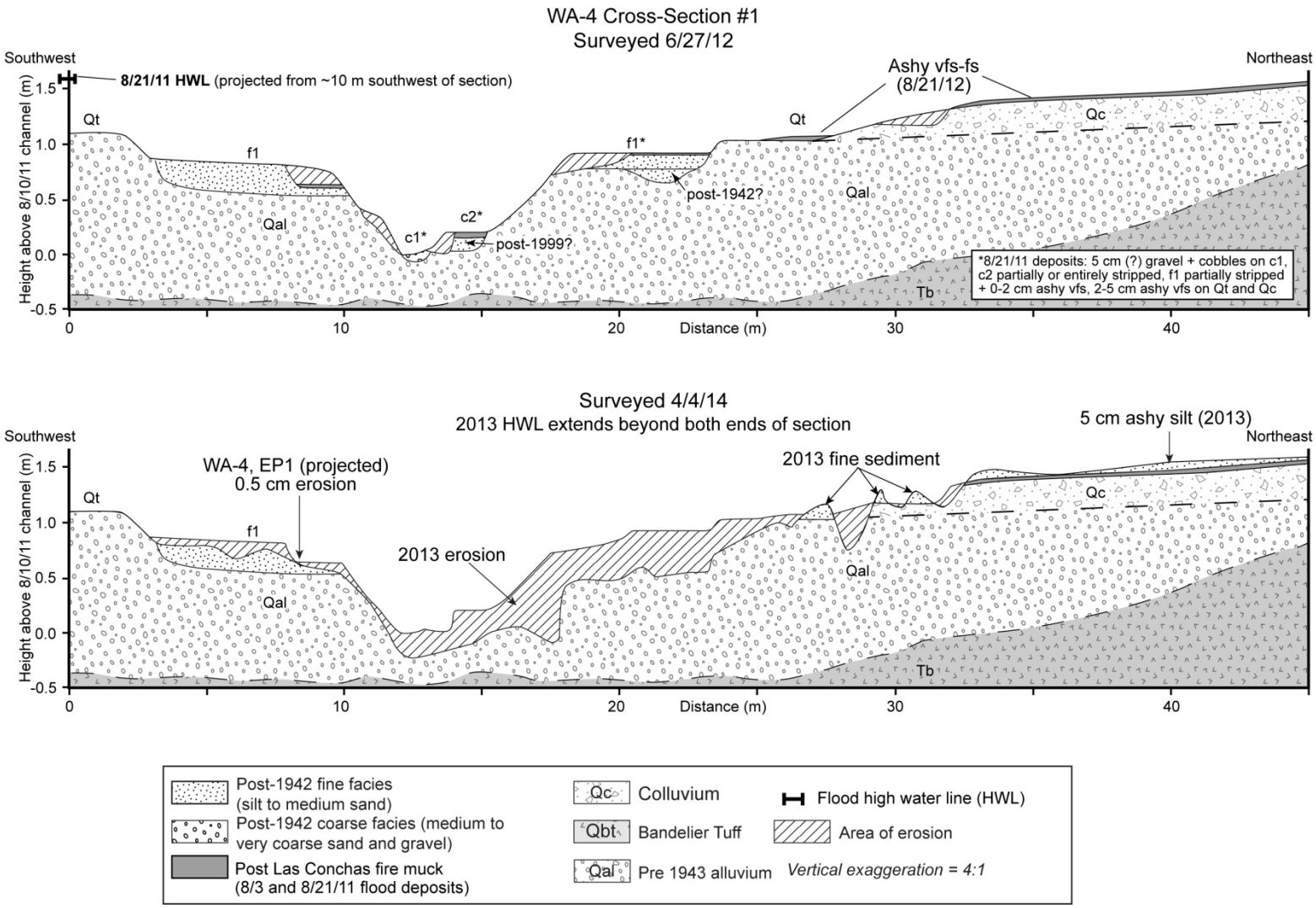


Figure 2.2-9 Geomorphic cross-sections showing 2011 and 2013 erosion and deposition in reach WA-3 at WA-4 cross-section #1, upstream part of reach

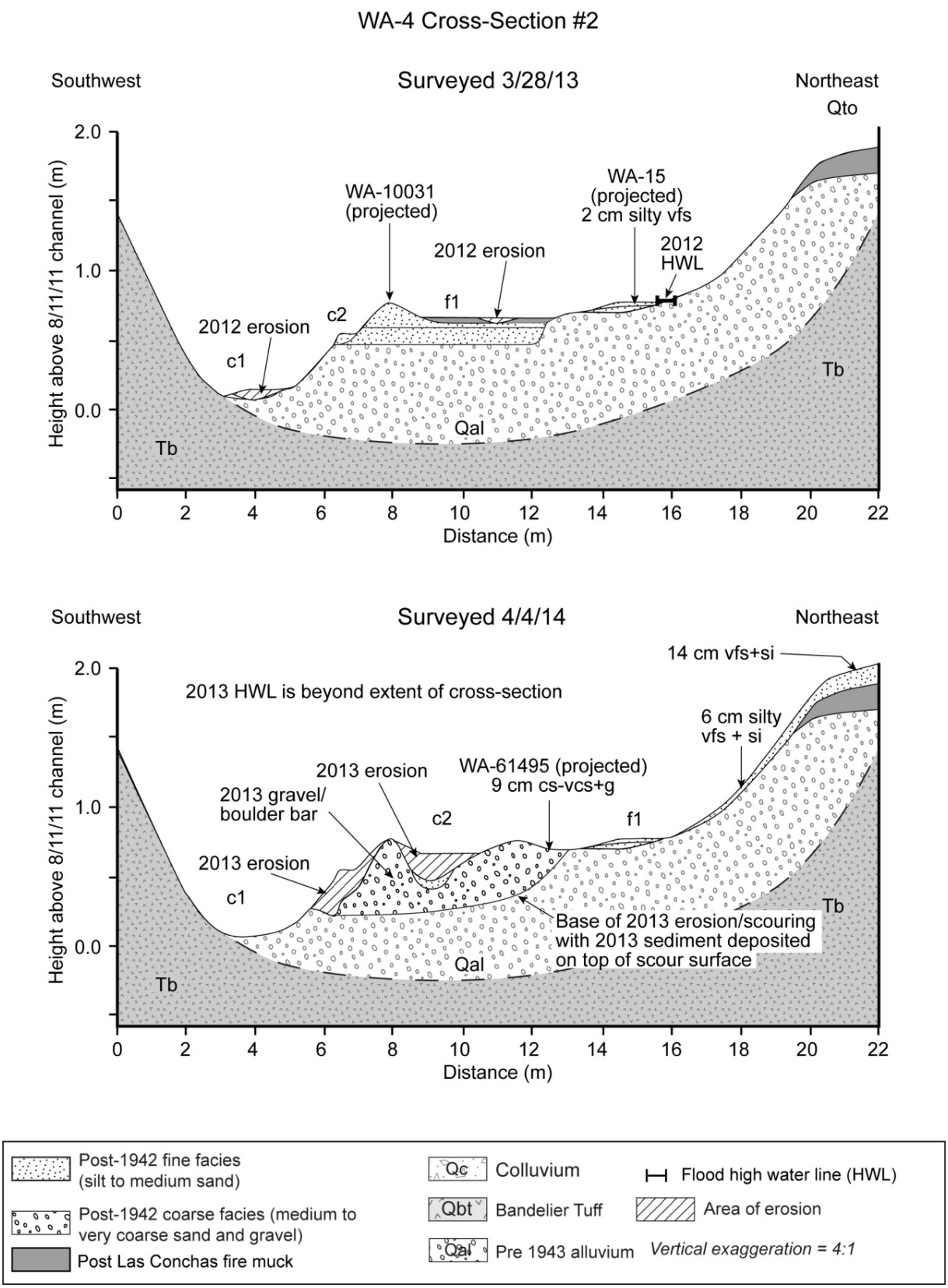
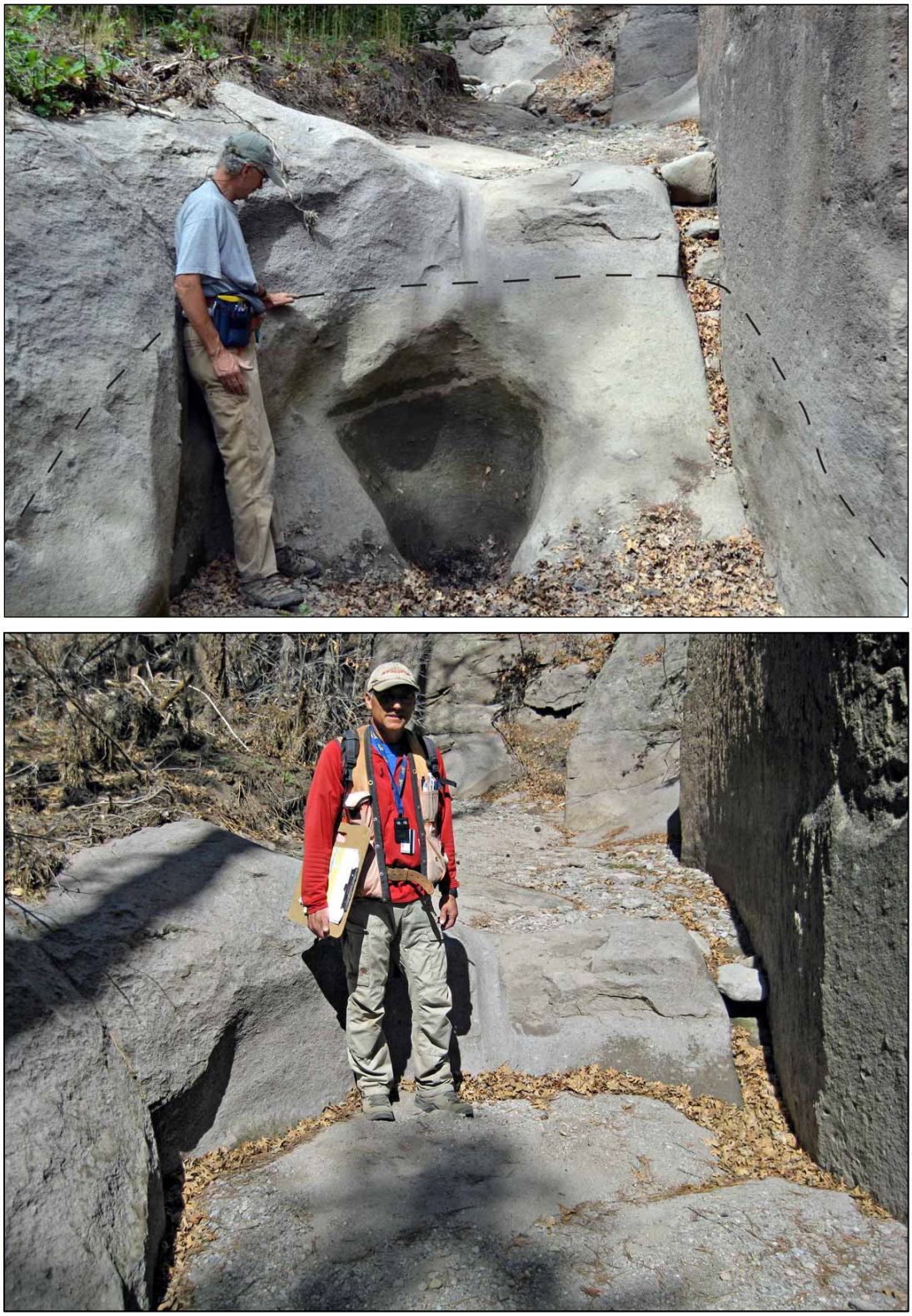


Figure 2.2-10 Geomorphic cross-sections showing 2012 and 2013 erosion and deposition in reach WA-3 at WA-4 cross-section #2, downstream part of reach



Note: Dashed line and coloration change on bedrock surface in upper photograph shows pre-flood sediment thickness.

Figure 3.2-1 Repeat photographs of former c1 surface in reach CDV-3: (a) scoured to bedrock by August 21, 2011 (b) aggraded to approximate pre-August 21, 2011, surface as of November 2013

Figure 3.2-2 March 2014 photograph of 2013 gravel bar deposited on a former f1 floodplain surface in reach CDV-2E

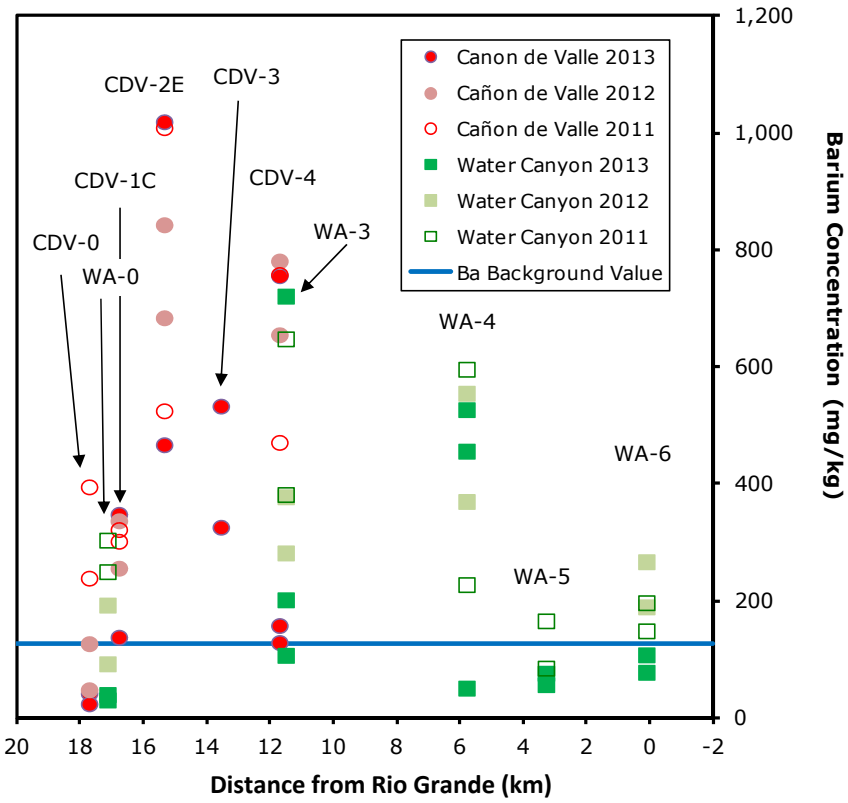
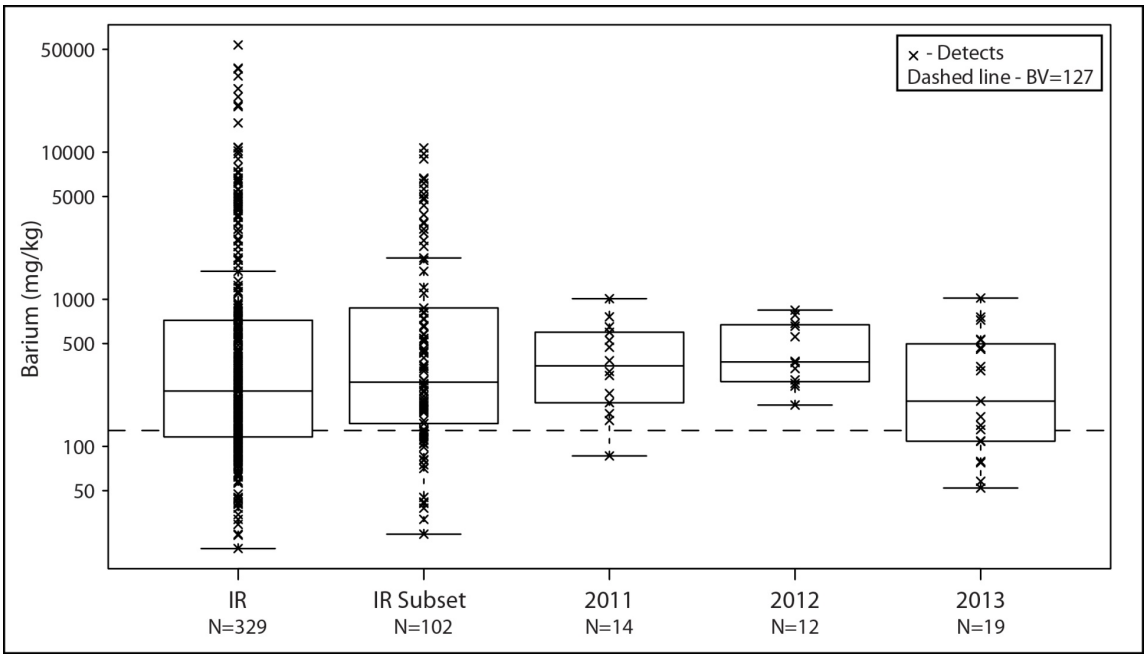
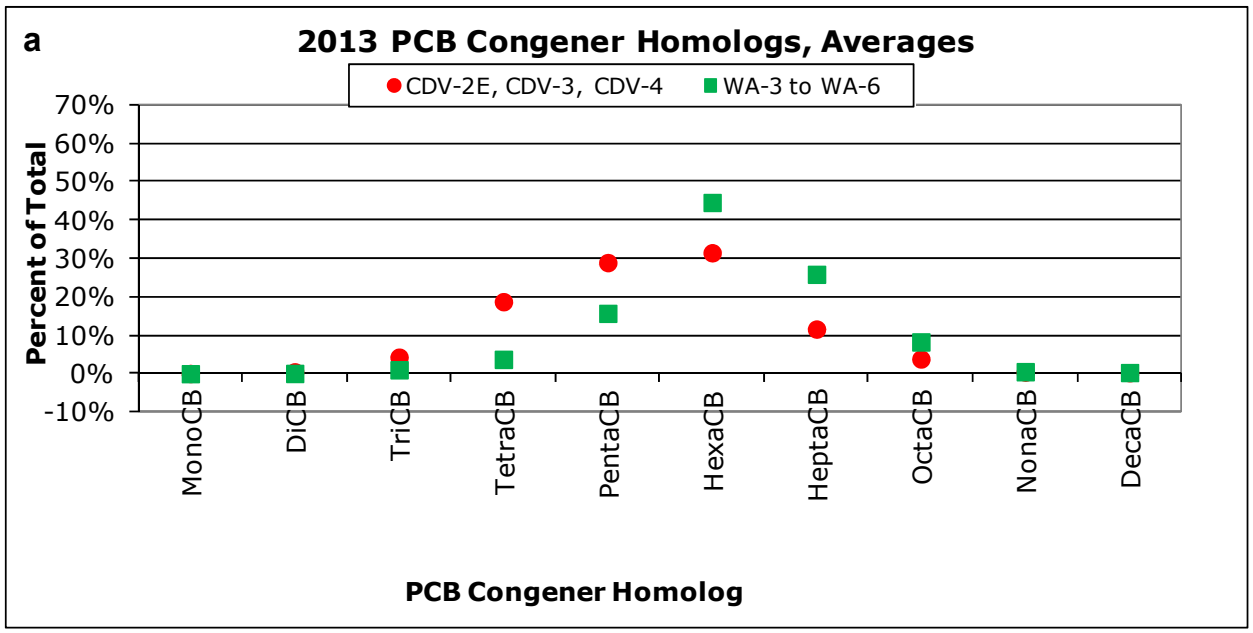


Figure 3.3-1 Post-fire barium concentrations as a function of distance from Rio Grande



Notes: Dashed line is the barium sediment BV. The box plots include the 25th percentile, the median, and the 75th percentile. The 10th and 90th percentiles are shown as lines above and below the boxes.

Figure 3.3-2 Barium concentrations in the Water Canyon and Cañon de Valle IR, a subset of those IR data, including only the reaches sampled in subsequent years, 2013, 2012, and 2011 sediment samples



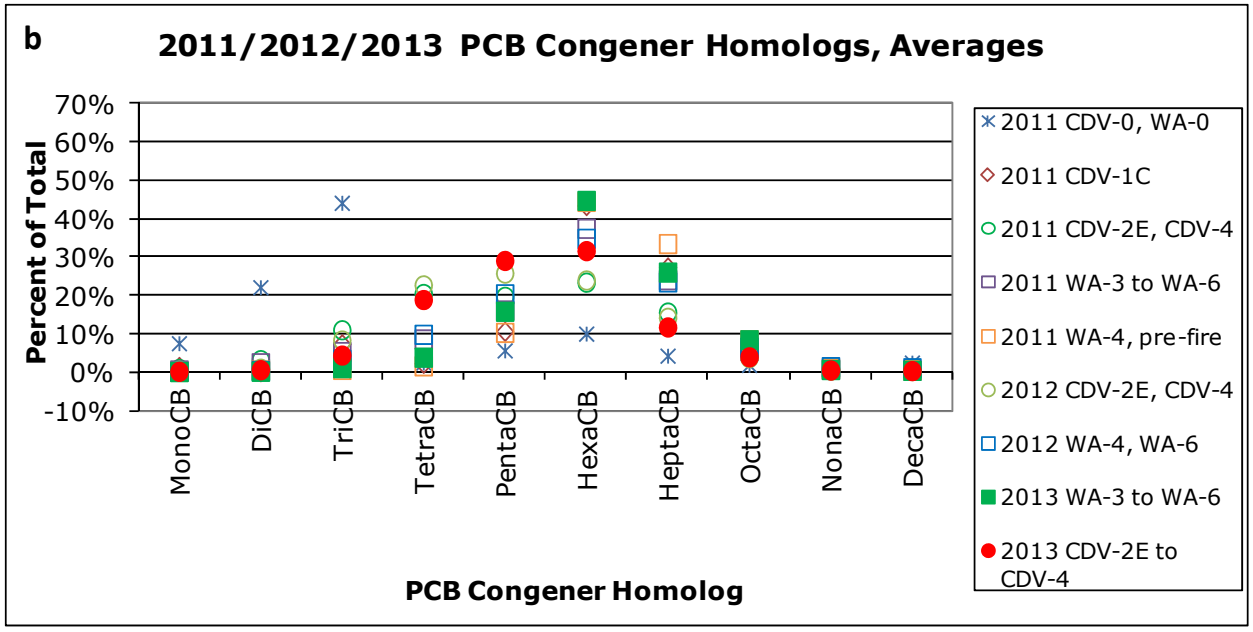


Figure 3.3-3 **Plots of PCB congener homologs averages in (a) 2013 samples collected downstream from solid waste management units and areas of concern in the Water Canyon and Cañon de Valle watershed; and (b) 2011, 2012, and 2013 samples collected downstream from sites in the Water Canyon and Cañon de Valle watershed**

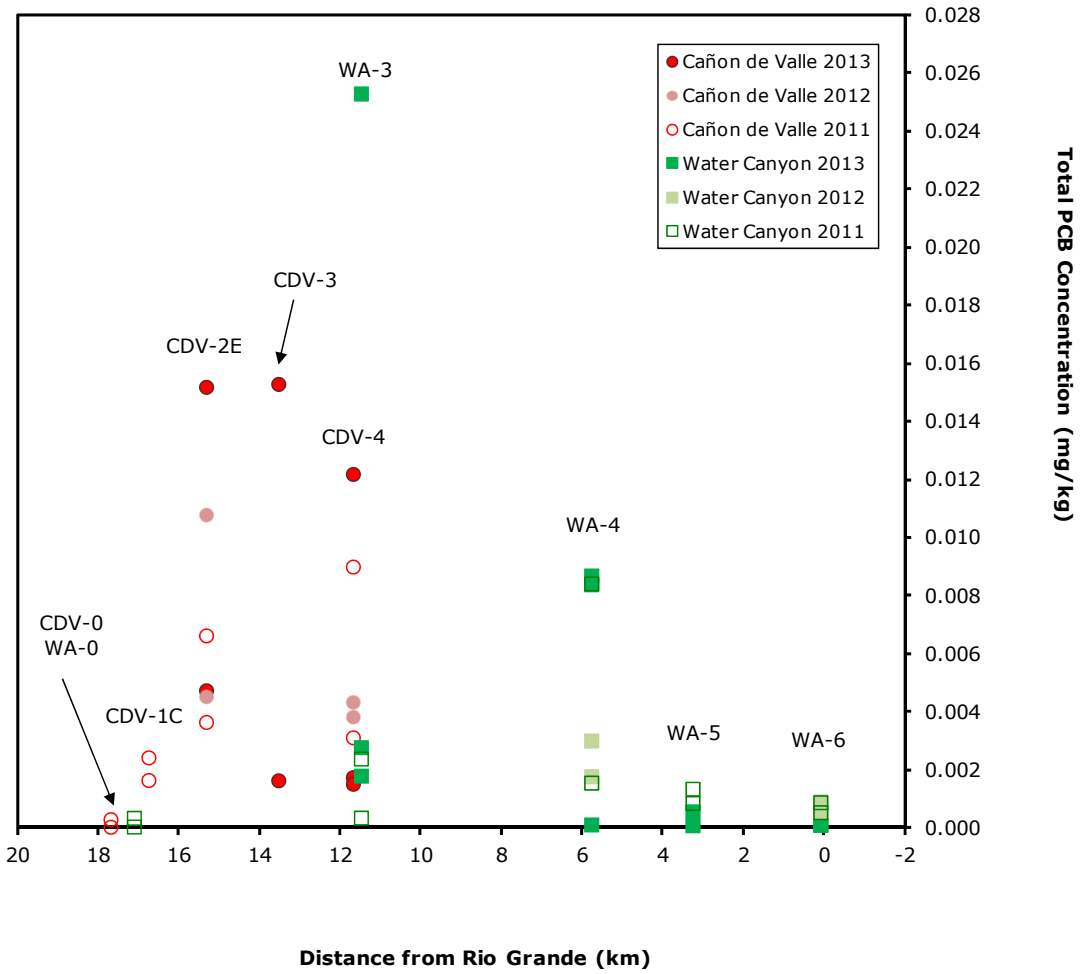
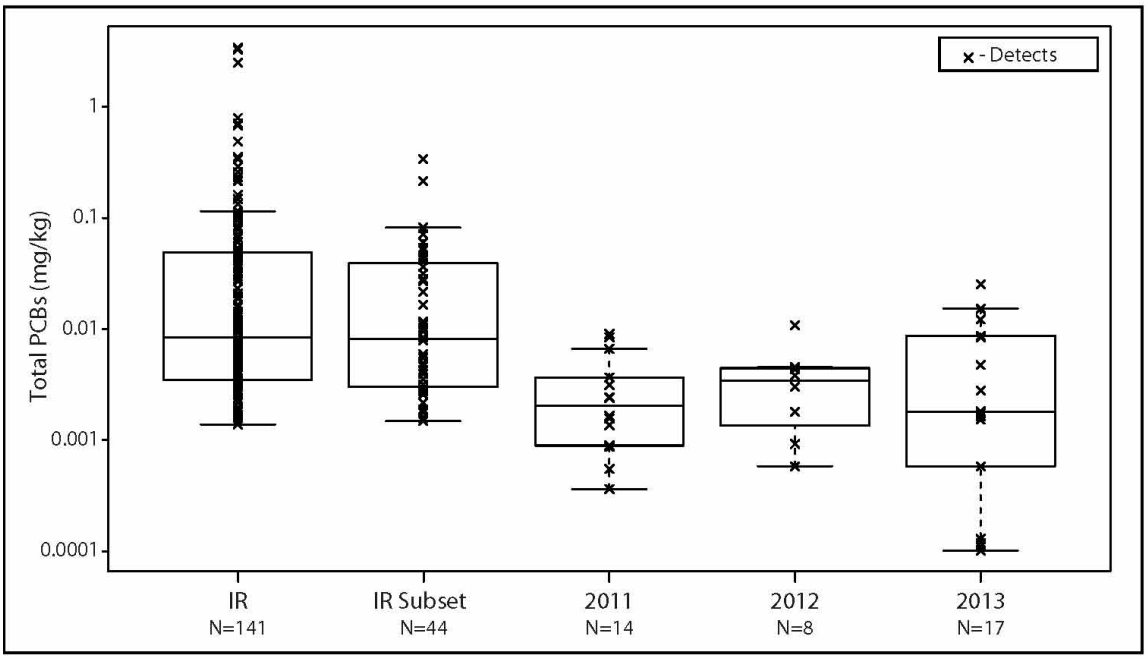
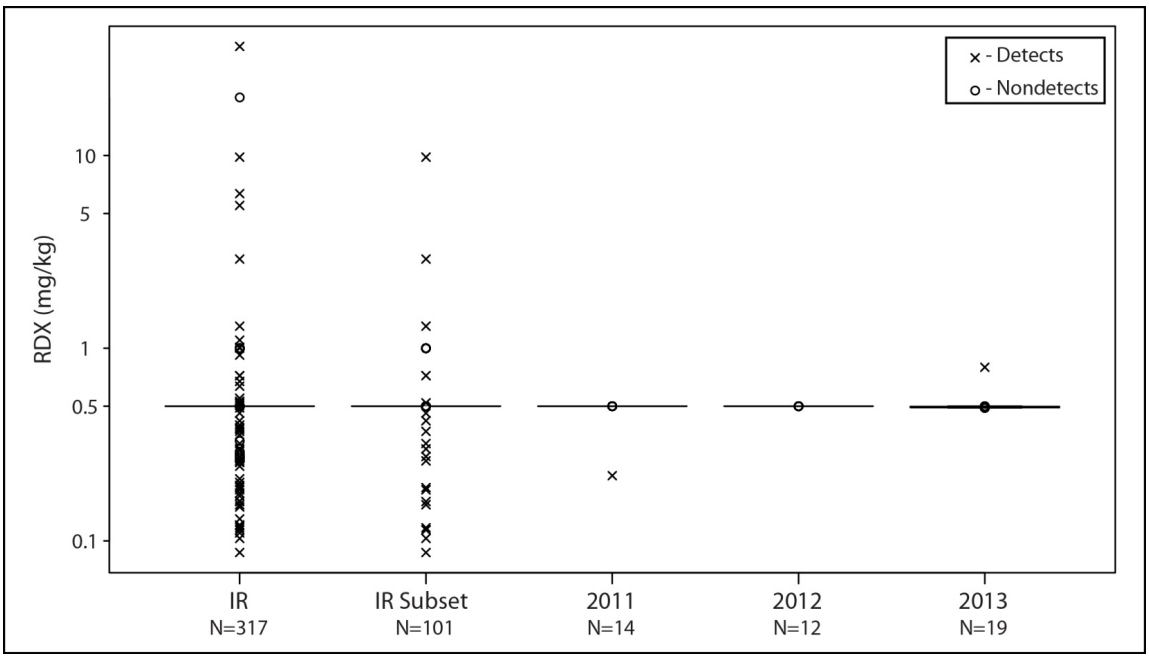


Figure 3.3-4 Post-fire total PCB concentrations as a function of distance from the Rio Grande



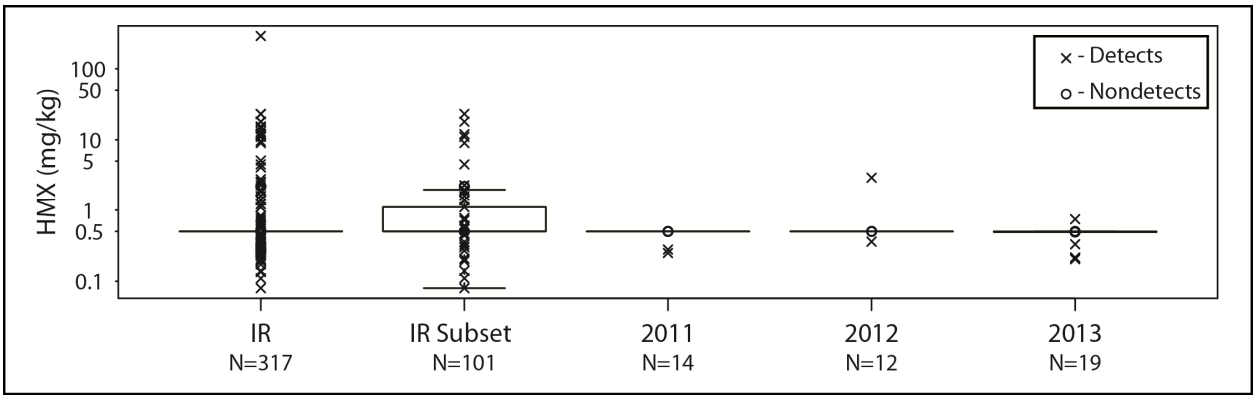
Notes: The box plots include the 25th percentile, the median, and the 75th percentile. The 10th and 90th percentiles are shown as lines above and below the boxes.

Figure 3.3-5 Total PCB concentrations in the Water Canyon and Cañon de Valle investigation report (Aroclor method), a subset of those IR data including only the reaches sampled in subsequent years (Aroclor method), 2013, 2012, and 2011 sediment samples



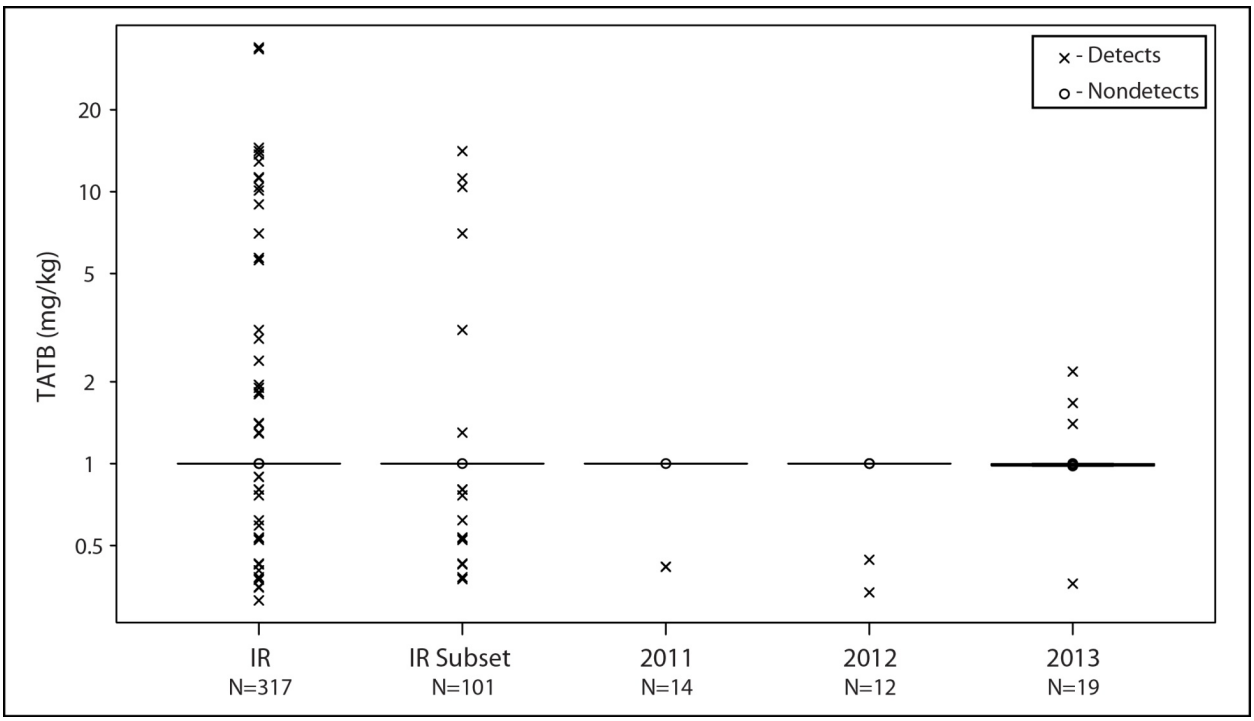
Notes: The box plots include the 25th percentile, the median, and the 75th percentile. The 10th and 90th percentiles are shown as lines above and below the boxes. Some of these data groups have a very compressed range and the box plots and lines overlap and appear to be a single thick line.

Figure 3.3-6 RDX concentrations in the Water Canyon and Cañon de Valle investigation report, a subset of those IR data including only the reaches sampled in subsequent years, 2013, 2012, and 2011 sediment samples



Notes: The box plots include the 25th percentile, the median, and the 75th percentile. The 10th and 90th percentiles are shown as lines above and below the boxes. Some of these data groups have a very compressed range and the box plots and lines overlap and appear to be a single thick line.

Figure 3.3-7 HMX concentrations in the Water Canyon and Cañon de Valle investigation report, a subset of those IR data including only the reaches sampled in subsequent years, 2013, 2012, and 2011 sediment samples



Notes: The box plots include the 25th percentile, the median, and the 75th percentile. The 10th and 90th percentiles are shown as lines above and below the boxes. Some of these data groups have a very compressed range and the box plots and lines overlap and appear to be a single thick line.

Figure 3.3-8 TATB concentrations in the Water Canyon and Cañon de Valle IR, a subset of those IR data, including only the reaches sampled in subsequent years, 2013, 2012, and 2011 sediment samples

Table 2.1-1
Summary of Sediment Samples Collected from the Water Canyon and Cañon de Valle Watershed and Analyses Requested in 2013

Sample ID	Reach	Location ID	Geomorphic Unit	Depth (cm)	Media	Sediment Facies	Explosive Compounds	Target Analyte List Metals	PCB Congeners (EPA Method 1668A)	Particle Size
CACV-14-49240	CDV-0	CV-61487	f1	0–5	Sediment	coarse	X[a]	X	—[b]	X
CACV-14-49241	CDV-0	CV-61488	f1	0–6	Sediment	coarse	X	X	—	X
CACV-14-49242	CDV-1C	CV-61489	f1	0–3	Sediment	fine	X	X	—	X
CACV-14-49243	CDV-1C	CV-61490	c1	0–10	Sediment	coarse	X	X	—	X
CACV-14-49256	CDV-2E	CV-61491	f1	0–5	Sediment	fine	X	X	X	X
CACV-14-49257	CDV-2E	CV-61492	c2	0–14	Sediment	fine	X	X	X	X
CACV-14-49258	CDV-3	CV-61493	c3	0–15	Sediment	coarse	X	X	X	X
CACV-14-49259	CDV-3	CV-61494	f2	0–20	Sediment	coarse	X	X	X	X
CACV-14-49260	CDV-4	CV-61485	f1	0–22	Sediment	coarse	X	X	X	X
CACV-14-49261	CDV-4	CV-61486	f1	0–8	Sediment	fine	X	X	X	X
CACV-14-49262	CDV-4	CV-61486	f1	8–31	Sediment	coarse	X	X	X	X
CAWA-14-49265	WA-0	WA-61492	c1b	0–10	Sediment	coarse	X	X	—	X
CAWA-14-49266	WA-0	WA-61493	c1	0–10	Sediment	coarse	X	X	—	X
CAWA-14-49297	WA-3	WA-61489	c3	0–55	Sediment	coarse	X	X	X	X
CAWA-14-49298	WA-3	WA-61490	Qt/f1	0–10	Sediment	fine	X	X	X	X
CAWA-14-49271	WA-3	WA-61491	Qt/f1	0–6	Sediment	fine	X	X	X	X
CAWA-14-49272	WA-4	WA-61494	f1	0–4	Sediment	fine	X	X	X	X
CAWA-14-49273	WA-4	WA-61495	f1	0–9	Sediment	coarse	X	X	X	X
CAWA-14-49274	WA-4	WA-61496	f1	0–2	Sediment	fine	X	X	X	X
CAWA-14-49275	WA-5	WA-61497	f1	0–8	Sediment	fine	X	X	X	X
CAWA-14-49276	WA-5	WA-61498	c1b	0–8	Sediment	fine	X	X	X	X
CAWA-14-49277	WA-6	WA-61499	f1	0–7	Sediment	fine	X	X	X	X
CAWA-14-49278	WA-6	WA-61499	f1	7–17	Sediment	fine	X	X	X	X

[a] X = Analysis requested.
[b] — = Analysis not requested.

Table 2.1-2
Particle-Size Data from 2013 Water Canyon and Cañon de Valle Watershed Sediment Samples

Sample ID	Reach	Location ID	Depth (cm)	Geomorphic Unit	Gravel; > 2 mm (weight %)[a]	Very Coarse Sand; 2.0–1.0 mm (weight %)	Coarse Sand; 1.0–0.5 mm (weight %)	Medium Sand; 0.5–0.25 mm (weight %)	Fine Sand; 0.25–0.125 mm (weight %)	Very Fine Sand; 0.125–0.0625 mm (weight %)	Coarse Silt; 62.5-15 µm (weight %)	Fine Silt; 15-2 µm (weight %)	Clay; <2 µm (weight %)	Median Particle Size Class[b]	% Silt + Clay
CACV-14-49240	CDV-0	CV-61487	0–5	f1	4.50	8.38	24.24	31.84	16.55	7.58	6.89	2.15	2.43	ms	11.47
CACV-14-49241	CDV-0	CV-61488	0–6	f1	0.77	6.61	36.07	37.25	11.76	3.08	1.92	0.69	2.45	ms	5.06
CACV-14-49242	CDV-1C	CV-61489	0–3	f1	0.64	0.76	9.50	23.93	15.62	9.26	16.99	10.68	13.30	vfs	40.97
CACV-14-49243	CDV-1C	CV-61490	0–10	c1	3.17	10.81	41.49	27.17	6.08	1.83	3.43	3.61	5.68	cs	12.72
CACV-14-49256	CDV-2E	CV-61491	0–5	f1	0.36	0.57	5.67	16.49	19.99	16.90	24.98	7.37	8.16	vfs	40.52
CACV-14-49257	CDV-2E	CV-61492	0–14	c2	3.47	8.92	31.84	36.71	10.24	2.86	3.24	2.31	3.91	ms	9.46
CACV-14-49258	CDV-3	CV-61493	0–15	c3	5.59	15.98	35.54	30.40	9.42	2.24	2.02	1.47	2.90	cs	6.39
CACV-14-49259	CDV-3	CV-61494	0–20	f2	2.29	7.14	27.29	34.91	13.22	4.51	4.78	3.06	5.08	ms	12.92
CACV-14-49260	CDV-4	CV-61485	0–22	f1	11.18	20.25	43.88	22.98	6.13	1.42	1.92	1.05	2.32	cs	5.30
CACV-14-49261	CDV-4	CV-61486	0–8	f1	0.07	2.69	3.89	5.14	10.70	17.53	40.77	12.40	6.70	csi	59.87
CACV-14-49262	CDV-4	CV-61486	8–31	f1	20.46	34.22	36.09	16.08	5.75	1.91	2.29	1.72	1.91	cs	5.91
CAWA-14-49265	WA-0	WA-61492	0–10	c1b	0.14	1.88	20.78	42.32	20.06	5.80	4.58	2.31	2.02	ms	8.91
CAWA-14-49266	WA-0	WA-61493	0–10	c1	27.69	25.92	26.15	19.31	12.18	6.08	5.92	1.79	2.53	cs	10.24
CAWA-14-49271	WA-3	WA-61491	0–6	Qt/f1	0.13	0.09	0.97	6.39	12.64	17.92	42.13	9.48	10.40	csi	62.00
CAWA-14-49297	WA-3	WA-61489	0–55	c3	6.04	25.98	43.25	18.92	3.71	1.31	2.56	1.91	2.15	cs	6.62
CAWA-14-49298	WA-3	WA-61490	0–10	Qt/f1	0.02	0.21	6.39	43.87	24.69	10.59	7.96	2.61	3.62	ms	14.19
CAWA-14-49272	WA-4	WA-61494	0–4	f1	3.79	5.65	3.96	6.45	7.87	16.54	36.18	11.76	11.43	csi	59.37
CAWA-14-49273	WA-4	WA-61495	0–9	f1	4.96	30.26	45.21	13.51	2.82	2.09	0.77	1.14	3.79	cs	5.69
CAWA-14-49274	WA-4	WA-61496	0–2	f1	0.49	0.06	0.37	0.53	2.03	15.48	56.16	14.29	11.12	csi	81.57
CAWA-14-49275	WA-5	WA-61497	0–8	f1	0.14	1.10	6.77	22.89	29.37	19.34	13.86	2.45	4.19	fs	20.49
CAWA-14-49276	WA-5	WA-61498	0–8	c1b	0.47	3.63	18.21	35.86	22.65	8.85	5.85	1.42	3.47	ms	10.74
CAWA-14-49277	WA-6	WA-61499	0–7	f1	0.91	1.52	7.54	19.39	24.01	20.89	16.96	3.33	6.28	fs	26.57
CAWA-14-49278	WA-6	WA-61499	7–17	f1	0.26	2.26	24.54	38.15	15.81	6.63	5.84	2.19	4.52	ms	12.55

[a] Gravel weight % calculated before sieving and is not included in weight % of sieved sand/silt/clay fractions.

[b] cs = Coarse sand; ms = medium sand; fs = fine sand; vfs = very fine sand; csi = coarse silt.

Table 2.1-3
Inorganic Chemicals above Sediment BVs in 2013 Water Canyon and Cañon de Valle Watershed Sediment Samples

Sample ID	Reach	Location ID	Depth (cm)	Media	Antimony	Barium	Cadmium	Calcium	Cobalt	Copper	Iron	Manganese	Nickel	Selenium	Silver
Sediment BV[a]					**0.83**	**127**	**0.4**	**4420**	**4.73**	**11.2**	**13800**	**543**	**9.38**	**0.3**	**1**
Recreational SSL[b]					**248**	**124000**	**465**	**na[c]**	**186**	**24800**	**433000**	**14800**	**12400**	**3100**	**3100**
Residential SSL[d]					**31.3**	**15600**	**70.3**	**na**	**23[e]**	**3130**	**54800**	**1860**	**1560**	**391**	**391**
CACV-14-49240	CDV-0	CV-61487	0–5	Sediment	0.97 (U)	—[f]	0.485 (U)	—	—	—	—	—	—	0.871 (U)	—
CACV-14-49241	CDV-0	CV-61488	0–6	Sediment	0.905 (U)	—	0.453 (U)	—	—	—	16100	—	—	0.962 (U)	—
CACV-14-49242	CDV-1C	CV-61489	0–3	Sediment	1.11 (U)	349	—	—	—	32.5	—	—	83.2	1.03 (U)	36.3
CACV-14-49243	CDV-1C	CV-61490	0–10	Sediment	1.03 (U)	139	0.516 (U)	—	—	11.9	—	—	46.8	0.937 (U)	5.02
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	1.17 (U)	1020	—	—	—	13	—	—	10.8	1.12 (U)	2.35
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	1.01 (U)	468	0.505 (U)	—	—	—	—	—	—	1.02 (U)	—
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	1.01 (U)	327	0.505 (U)	—	—	—	—	—	—	0.924 (U)	—
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	0.937 (U)	534	0.469 (U)	—	—	—	—	—	—	1.03 (U)	—
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	0.994 (U)	130 (J+)	—	—	—	27.2 (J—)	—	—	—	1.03 (U)	—
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	—	757	—	—	—	—	—	—	—	1.37 (U)	1.27
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	1.01 (U)	159	0.503 (U)	—	—	—	—	—	—	1.02 (U)	—
CAWA-14-49265	WA-0	WA-61492	0–10	Sediment	1.01 (U)	—	0.505 (U)	—	—	—	—	—	—	0.956 (U)	—
CAWA-14-49266	WA-0	WA-61493	0–10	Sediment	1.02 (U)	—	0.511 (U)	—	—	—	—	—	—	1.03 (U)	—
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	1.04 (U)	—	0.522 (U)	—	—	—	—	—	—	1.09 (U)	—
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	1.07 (U)	203	—	—	—	—	—	—	—	1.09 (U)	—
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	1.65 (U)	722	—	—	—	12.8	—	549	—	1.68 (U)	1.03
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	1.24 (U)	457	0.622 (U)	4890	—	—	—	571	—	1.11 (U)	—
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	0.929 (U)	—	0.465 (U)	—	—	—	—	—	—	0.967 (U)	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	1.01 (U)	528	0.503 (U)	—	—	—	—	—	—	0.926 (U)	1.22
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	1.04 (U)	—	—	—	—	—	—	—	—	0.965 (U)	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	1 (U)	—	—	—	—	—	—	—	—	0.926 (U)	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	1.04 (U)	—	0.522 (U)	—	5.79 (J)	—	—	—	—	1 (U)	—
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	1.03 (U)	—	0.514 (U)	—	—	—	—	—	—	1.04 (U)	—

Notes: Units are mg/kg. U = The analyte was analyzed for but not detected. J = The analyte was positively identified, and the associated numerical value is estimated to be more uncertain than would normally be expected for that analysis. J- = The analyte was positively identified, and the result is likely to be biased low.

[a] BVs from LANL (1998, 059730).

[b] SSLs from LANL (2012, 228733).

[c] na = Not available.

[d] SSLs from NMED (2012, 219971).

[e] SSL from U.S. Environmental Protection Agency (EPA) regional tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[f] — = Not detected or not detected above BV.

Table 2.1-4
Organic Chemicals Detected in 2013 Water Canyon and Cañon de Valle Watershed Sediment Samples

Sample ID	Reach	Location ID	Depth (cm)	Media	HMX	PCB-1	PCB-103	PCB-105	PCB-107	PCB-108/PCB-124	PCB-11	PCB-110/PCB-115	PCB-114	PCB-118	PCB-12/PCB-13	PCB-120	PCB-122	PCB-123
Recreational SSLs[a]					**31000**	**na[b]**	**na**	**4.88**	**na**	**na**	**na**	**na**	**4.88**	**4.88**	**na**	**na**	**na**	**4.88**
Residential SSLs[c]					**3910**	**na**	**na**	**1.14**	**na**	**na**	**na**	**na**	**1.14**	**1.14**	**na**	**na**	**na**	**1.14**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	0.744	1.19e-006 (J)	1.9e-006 (J)	0.000214	2.69E-05	1.65E-05	3.86e-006 (J)	0.000522	9.52E-06	0.000364	7.28e-006 (J)	—[d]	—	9.46E-06
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	0.204 (J)	—	7.64e-007 (J)	9.74E-05	1.13E-05	7.02E-06	—	0.000252	3.70E-06	0.00015	2.42e-006 (J)	—	—	4.01E-06
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	—	—	—	2.93E-05	3.77e-006 (J)	2.85e-006 (J)	—	0.00011	7.95e-007 (J)	5.21E-05	—	—	—	1.27e-006 (J)
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	0.33 (J)	—	3.85e-006 (J)	0.000144	2.36E-05	2.26E-05	1.42e-005 (J)	0.00143	3.77e-006 (J)	0.000327	5.64E-05	—	—	1.08E-05
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	—	—	—	1.73E-05	3.04e-006 (J)	3.06e-006 (J)	4.56e-006 (J)	0.000148	—	4.31E-05	—	—	—	1.13e-006 (J)
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	0.214 (J)	4.85e-006 (J)	1.81e-006 (J)	0.0002	2.87E-05	1.92E-05	2.63e-005 (J)	0.000676	8.12E-06	0.000348	3.15E-05	—	—	9.40E-06
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	—	—	—	2.02E-05	2.78e-006 (J)	2.32e-006 (J)	—	9.48E-05	—	4.17E-05	—	—	—	9.19e-007 (J)
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	—	—	—	2.76E-05	3.44e-006 (J)	2.85e-006 (J)	2.52e-006 (J)	8.81E-05	7.84e-007 (J)	5.38E-05	—	—	—	9.54e-007 (J)
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	—	—	—	2.84E-05	3.98E-06	3.34e-006 (J)	2.59e-006 (J)	0.000148	6.98e-007 (J)	6.17E-05	1.16e-006 (J)	—	—	1.12e-006 (J)
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	0.214 (J)	5.42E-06	3.95e-006 (J)	0.000262	4.56E-05	3.92E-05	6.22e-006 (J)	0.00151	9.53E-06	0.000641	5.77e-006 (J)	1.35e-006 (J)	3.47e-006 (J)	1.39E-05
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	—	—	6.78e-007 (J)	5.60E-05	8.80E-06	6.69E-06	2.44e-006 (J)	0.000286	1.92E-06	0.000138	2.85e-006 (J)	—	—	2.58E-06
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	—	—	—	—	—	—	2.83e-006 (J)	—	—	—	—	—	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	—	—	—	5.71E-05	8.09E-06	5.83E-06	2.61e-006 (J)	0.000242	1.44e-006 (J)	0.000131	2.61e-006 (J)	—	—	2.49E-06
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	—	—	2.33E-06	—	—	—	3.86E-06	—	2.92e-006 (J)	—	—	—	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	—	—	—	—	—	—	4.92E-06	—	1.93e-006 (J)	—	—	—	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	—	—	—	3.48E-06	—	—	2.54e-006 (J)	1.86E-05	—	7.82E-06	—	—	—	—
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	—	—	—	—	—	2.4e-006 (J)	3.54e-006 (J)	—	—	—	—	—	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-126	PCB-128/PCB-166	PCB-129/PCB-138/PCB-163	PCB-130	PCB-131	PCB-132	PCB-133	PCB-134	PCB-135/PCB-151	PCB-136	PCB-137	PCB-139/PCB-140	PCB-141	PCB-144
Recreational SSLs[a]					**0.00146**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Residential SSLs[c]					**0.000341**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	2.10E-06	7.08E-05	0.000778	2.83E-05	5.21E-06	0.00021	6.35E-06	2.33E-05	0.000246	7.23E-05	1.33E-05	4.74E-06	0.000171	3.00E-05
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	7.67e-007 (J)	2.44E-05	0.000216	9.71E-06	1.66e-006 (J)	5.89E-05	1.63e-006 (J)	9.93E-06	6.78E-05	2.16E-05	7.01E-06	2.09e-006 (J)	3.78E-05	7.79E-06
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	—	1.82E-05	0.000126	6.30E-06	1.09e-006 (J)	3.67E-05	8.64e-007 (J)	5.52E-06	3.31E-05	1.12E-05	4.68E-06	-	2.00E-05	3.91E-06
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	—	0.000268	0.00169	0.0001	2.10E-05	0.000553	1.69E-05	8.18E-05	0.000391	0.00016	9.47E-05	2.57E-05	0.000254	4.92E-05
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	—	2.92E-05	0.000192	1.10E-05	2.28E-06	6.45E-05	1.86e-006 (J)	7.51E-06	4.88E-05	1.64E-05	8.71E-06	2.86e-006 (J)	2.90E-05	6.39E-06
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	2.55E-06	9.65E-05	0.000679	3.66E-05	7.25E-06	0.000208	6.28E-06	2.48E-05	0.000187	5.52E-05	2.91E-05	8.32E-06	0.000115	2.25E-05
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	—	2.99E-05	0.000182	1.02E-05	1.44e-006 (J)	4.81E-05	1.51e-006 (J)	6.32E-06	3.91E-05	1.09E-05	7.91E-06	1.9e-006 (J)	2.63E-05	5.12E-06
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	—	2.74E-05	0.000228	1.12E-05	1.75e-006 (J)	5.90E-05	2.07E-06	5.71E-06	5.35E-05	1.44E-05	8.00E-06	1.93e-006 (J)	3.66E-05	6.26E-06
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	—	3.42E-05	0.000303	1.41E-05	2.49E-06	8.80E-05	2.75E-06	8.81E-06	8.75E-05	2.51E-05	8.84E-06	2.54e-006 (J)	5.33E-05	9.95E-06
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	5.15E-06	0.000328	0.00271	0.000133	2.49E-05	0.000814	2.64E-05	0.000111	0.000778	0.000231	9.44E-05	2.61E-05	0.000492	9.13E-05
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	2.03E-06	6.34E-05	0.000747	2.98E-05	4.37E-06	0.000215	8.06E-06	2.57E-05	0.000304	7.52E-05	1.26E-05	4.04E-06	0.000168	2.92E-05
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	—	1.77E-05	—	—	3.31E-06	—	—	4.85E-06	1.14e-006 (J)	—	—	3.14e-006 (J)	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	1.5e-006 (J)	6.05E-05	0.000732	2.68E-05	4.34E-06	0.000211	7.34E-06	2.40E-05	0.0003	7.75E-05	1.09E-05	3.53e-006 (J)	0.000172	2.93E-05
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	1.54e-006 (J)	1.60E-05	—	—	2.39E-06	—	—	2.77e-006 (J)	8.11e-007 (J)	—	—	1.52e-006 (J)	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	1.58e-006 (J)	1.78E-05	—	—	3.18E-06	—	—	3.93E-06	1.1e-006 (J)	—	—	2.27e-006 (J)	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	—	6.11E-06	6.91E-05	2.57E-06	—	1.59E-05	—	1.36e-006 (J)	1.81E-05	4.30E-06	—	—	1.12E-05	1.75e-006 (J)
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	1.4e-006 (J)	1.43E-05	—	—	2.46E-06	—	—	3.12e-006 (J)	7.42e-007 (J)	—	—	1.7e-006 (J)	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-146	PCB-147/PCB-149	PCB-15	PCB-152	PCB-153/PCB-168	PCB-154	PCB-155	PCB-156/PCB-157	PCB-158	PCB-159	PCB-16	PCB-162	PCB-164	PCB-167
Recreational SSLs[a]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**4.88**
Residential SSLs[c]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**1.14**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	8.71E-05	0.000527	1.97E-05	—	0.000698	2.16E-06	1.64e-006 (J)	7.09E-05	6.33E-05	—	1.63E-05	—	5.24E-05	2.54E-05
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	2.31E-05	0.000159	1.16e-005 (J)	—	0.000179	9.04e-007 (J)	7.9e-007 (J)	1.98E-05	1.74E-05	—	1.53E-05	—	1.29E-05	7.19E-06
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	1.30E-05	8.22E-05	2.89e-006 (J)	—	9.35E-05	—	—	1.12E-05	1.04E-05	9.45e-007 (J)	1.97e-006 (J)	—	8.47E-06	4.77E-06
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	0.000185	0.00102	4.78e-005 (J)	—	0.00109	7.93e-006 (J)	—	0.000112	0.00014	8.97e-006 (J)	8.17e-006 (J)	5.23e-006 (J)	0.000109	6.73E-05
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	2.02E-05	0.000125	—	—	0.000132	8.1e-007 (J)	—	1.26E-05	1.58E-05	—	—	—	1.32E-05	7.10E-06
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	7.25E-05	0.000457	4.20E-05	—	0.000509	2.91E-06	2.51E-06	5.74E-05	5.58E-05	—	3.82E-05	1.71e-006 (J)	4.50E-05	2.40E-05
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	1.81E-05	0.000103	—	—	0.000118	—	—	2.44E-05	1.60E-05	—	—	—	1.30E-05	9.97E-06
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	2.54E-05	0.00014	—	—	0.000176	—	—	1.82E-05	1.73E-05	—	1.09e-006 (J)	—	1.47E-05	8.22E-06
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	3.49E-05	0.000219	2.45e-006 (J)	—	0.000242	8.52e-007 (J)	—	2.01E-05	2.21E-05	—	—	—	2.07E-05	1.07E-05
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	0.000324	0.002	9.35e-006 (J)	6.86e-007 (J)	0.00216	9.08E-06	2.09E-06	0.000218	0.000217	—	8.01E-06	5.58E-06	0.000184	0.000105
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	0.0001	0.000634	2.8e-006 (J)	—	0.000731	1.82e-006 (J)	—	6.03E-05	5.11E-05	—	1.89e-006 (J)	—	5.44E-05	2.97E-05
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	2.03E-06	1.14E-05	—	—	1.68E-05	—	—	—	9.15e-007 (J)	—	—	—	1.12e-006 (J)	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	9.49E-05	0.000629	3.09e-006 (J)	—	0.000705	2.03E-06	2.81E-05	5.88E-05	5.00E-05	—	1.64e-006 (J)	—	5.36E-05	2.73E-05
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	1.61e-006 (J)	8.75E-06	—	—	1.29E-05	—	—	—	8.42e-007 (J)	—	—	—	9.87e-007 (J)	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	1.67e-006 (J)	1.04E-05	—	—	1.42E-05	—	—	—	1.09e-006 (J)	—	—	—	9.78e-007 (J)	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	7.96E-06	4.77E-05	—	—	5.94E-05	—	—	4.18E-06	4.43E-06	—	—	—	4.48E-06	2.29E-06
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	1.46e-006 (J)	9.10E-06	—	—	1.15E-05	—	—	—	8.82e-007 (J)	—	—	—	9.34e-007 (J)	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-169	PCB-17	PCB-170	PCB-171/PCB-173	PCB-172	PCB-174	PCB-175	PCB-176	PCB-177	PCB-178	PCB-179	PCB-18/PCB-30	PCB-180/PCB-193	PCB-181
Recreational SSLs[a]					**0.00488**	**na**	**1.46**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Residential SSLs[c]					**0.00114**	**na**	**0.341**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	—	2.70E-05	0.000386	0.000111	6.95E-05	0.000481	1.36E-05	3.88E-05	0.000251	7.66E-05	0.000147	6.12E-05	—	—
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	—	1.83E-05	5.81E-05	1.73E-05	1.03E-05	7.61E-05	2.33E-06	7.47E-06	3.95E-05	1.42E-05	2.81E-05	3.92E-05	—	—
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	—	2.68e-006 (J)	3.13E-05	8.79E-06	5.09E-06	3.57E-05	1e-006 (J)	3.41E-06	1.93E-05	6.16E-06	1.28E-05	5.12E-06	—	—
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	—	1.18e-005 (J)	0.000269	7.78E-05	4.19E-05	0.000261	8.86e-006 (J)	2.58E-05	0.000146	4.22E-05	8.34E-05	2.31E-05	—	—
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	—	—	3.54E-05	9.69E-06	5.55E-06	3.08E-05	—	2.88E-06	1.93E-05	5.64E-06	1.09E-05	2.01e-006 (J)	—	—
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	—	4.10E-05	0.000162	4.20E-05	2.69E-05	0.000176	4.85E-06	1.51E-05	9.68E-05	3.18E-05	6.25E-05	9.78E-05	—	—
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	—	9.37e-007 (J)	5.61E-05	1.32E-05	7.95E-06	4.14E-05	1.14e-006 (J)	3.43E-06	2.41E-05	6.84E-06	1.20E-05	2.28e-006 (J)	—	—
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	—	1.23e-006 (J)	5.97E-05	1.55E-05	9.68E-06	5.83E-05	1.7e-006 (J)	4.95E-06	3.53E-05	1.11E-05	2.01E-05	2.63e-006 (J)	—	—
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	—	1.18e-006 (J)	0.0001	2.46E-05	1.60E-05	9.90E-05	2.67E-06	8.10E-06	5.60E-05	1.68E-05	3.20E-05	2.65e-006 (J)	—	—
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	2.99E-06	1.06E-05	0.000807	0.000209	0.000132	0.0008	2.31E-05	6.79E-05	0.000469	0.000149	0.000283	2.32E-05	—	4.50E-06
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	—	2.47e-006 (J)	0.00035	7.44E-05	5.50E-05	0.000309	7.55E-06	2.71E-05	0.000177	5.63E-05	0.000115	6.34E-06	0.000793	—
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	—	6.09E-06	1.31e-006 (J)	—	6.20E-06	—	—	3.43E-06	—	2.35E-06	—	1.45E-05	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	—	2.33e-006 (J)	0.000391	8.39E-05	5.68E-05	0.000341	8.31E-06	2.94E-05	0.000196	5.63E-05	0.000124	4.98E-06	0.000837	—
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	—	4.94E-06	—	—	5.32E-06	—	—	3.27E-06	—	1.61e-006 (J)	—	—	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	—	5.86E-06	—	—	6.26E-06	—	—	3.61E-06	—	1.96E-06	—	—	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	—	—	2.82E-05	6.56E-06	4.46E-06	2.69E-05	—	2.02E-06	1.70E-05	5.34E-06	8.57E-06	—	—	—
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	—	6.12E-06	1.36e-006 (J)	—	5.94E-06	—	—	3.78E-06	—	1.99E-06	—	—	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-182	PCB-183/PCB-185	PCB-184	PCB-187	PCB-189	PCB-19	PCB-190	PCB-191	PCB-194	PCB-195	PCB-196	PCB-197/PCB-200	PCB-198/PCB-199	PCB-2
Recreational SSLs[a]					**na**	**na**	**na**	**na**	**4.88**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Residential SSLs[c]					**na**	**na**	**na**	**na**	**1.14**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	—	0.000296	—	0.00055	1.08E-05	3.60E-06	8.07E-05	1.36E-05	0.000169	8.56E-05	0.000107	3.85E-05	0.000251	—
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	—	4.82E-05	—	9.93E-05	2.06E-06	7.10E-06	1.22E-05	1.89e-006 (J)	3.33E-05	1.25E-05	1.56E-05	5.91E-06	3.98E-05	—
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	—	2.12E-05	—	4.08E-05	1.11e-006 (J)	—	6.50E-06	9.41e-007 (J)	2.09E-05	7.32E-06	8.58E-06	2.75e-006 (J)	2.05E-05	—
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	—	0.000159	—	0.000281	1.08E-05	—	5.22E-05	9.25e-006 (J)	9.59E-05	3.92E-05	4.23E-05	1.39e-005 (J)	0.000101	1.00E-05
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	—	1.27E-05	—	3.79E-05	1.2e-006 (J)	—	7.15E-06	1.12e-006 (J)	1.37E-05	5.61E-06	5.67E-06	1.69e-006 (J)	1.45E-05	—
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	—	8.42E-05	—	0.000219	5.11E-06	9.27E-06	3.44E-05	4.94E-06	8.41E-05	3.32E-05	3.45E-05	1.18E-05	8.97E-05	9.27E-06
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	—	2.24E-05	—	4.64E-05	2.18E-06	—	1.09E-05	1.67e-006 (J)	2.12E-05	7.81E-06	7.98E-06	2.36e-006 (J)	1.87E-05	—
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	—	2.70E-05	—	7.16E-05	2.00E-06	—	1.26E-05	1.88e-006 (J)	2.65E-05	1.12E-05	1.18E-05	—	2.87E-05	—
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	—	4.74E-05	—	0.000115	3.08E-06	—	2.04E-05	3.09E-06	4.26E-05	1.77E-05	1.88E-05	—	4.47E-05	—
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	1.26e-006 (J)	0.000442	—	0.000943	2.65E-05	3.44E-06	0.00017	2.54E-05	0.000318	0.000133	0.000142	—	0.000347	2.33E-06
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	—	0.000162	—	0.00037	1.20E-05	—	7.68E-05	1.01E-05	0.000183	7.51E-05	7.04E-05	2.01E-05	0.000172	—
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	3.17e-006 (J)	—	7.33E-06	—	—	1.17e-006 (J)	—	3.37E-06	1.28e-006 (J)	1.27e-006 (J)	—	3.46e-006 (J)	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	—	0.000183	3.50E-06	0.000401	1.30E-05	—	8.52E-05	1.12E-05	0.000245	0.00011	0.0001	2.61E-05	0.000237	—
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	2.51e-006 (J)	—	6.87E-06	—	—	9.82e-007 (J)	—	3.23E-06	1.16e-006 (J)	1.2e-006 (J)	—	3.55e-006 (J)	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	3.19e-006 (J)	—	7.68E-06	—	—	1.16e-006 (J)	—	2.98E-06	1.08e-006 (J)	1.14e-006 (J)	—	3.16e-006 (J)	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	—	1.24E-05	—	3.36E-05	8.97e-007 (J)	—	5.91E-06	7.78e-007 (J)	1.33E-05	5.89E-06	5.33E-06	1.46e-006 (J)	1.44E-05	—
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	2.73e-006 (J)	—	7.83E-06	—	—	1.19e-006 (J)	—	3.42E-06	1.3e-006 (J)	1.26e-006 (J)	—	3.8e-006 (J)	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-20/PCB-28	PCB-201	PCB-202	PCB-203	PCB-205	PCB-206	PCB-207	PCB-208	PCB-209	PCB-21/PCB-33	PCB-22	PCB-25	PCB-26/PCB-29	PCB-27
Recreational SSLs[a]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Residential SSLs[c]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	0.000223	2.89E-05	4.15E-05	0.000145	7.90E-06	4.25E-05	7.06E-06	1.13E-05	1.45e-005 (J)	5.69E-05	5.25E-05	5.67E-06	1.60E-05	6.08E-06
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	8.21E-05	4.16E-06	7.32E-06	2.33E-05	1.66e-006 (J)	1.13E-05	1.4e-006 (J)	2.72E-06	7.68E-06	2.73E-05	2.31E-05	3.26E-06	7.17E-06	3.94E-06
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	1.74e-005 (J)	1.76e-006 (J)	3.52E-06	1.27E-05	9.81e-007 (J)	9.67E-06	8.51e-007 (J)	2.70E-06	9.33E-06	6.41e-006 (J)	5.72E-06	7.35e-007 (J)	1.73e-006 (J)	—
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	7.61e-005 (J)	9.97E-06	1.99E-05	6.23E-05	4.94e-006 (J)	3.03E-05	3.62e-006 (J)	8.34e-006 (J)	1.97E-05	3.28e-005 (J)	2.43E-05	8.18e-006 (J)	1.51e-005 (J)	—
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	5.45e-006 (J)	1.03e-006 (J)	2.34E-06	8.80E-06	—	4.44E-06	—	—	3.50E-06	1.91e-006 (J)	9.8e-007 (J)	—	—	—
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	0.000288	7.87E-06	1.70E-05	5.52E-05	3.86E-06	2.93E-05	3.20E-06	7.97E-06	2.79E-05	8.37E-05	7.22E-05	9.88E-06	2.32E-05	7.31E-06
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	6.08e-006 (J)	1.5e-006 (J)	2.98E-06	1.23E-05	8.48e-007 (J)	6.06E-06	—	1.39e-006 (J)	5.53E-06	1.87e-006 (J)	1.1e-006 (J)	—	—	—
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	7.67e-006 (J)	2.32E-06	4.54E-06	1.78E-05	1.24e-006 (J)	6.18E-06	6.67e-007 (J)	1.21e-006 (J)	2.78E-06	3.73e-006 (J)	1.73e-006 (J)	—	—	—
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	1.03e-005 (J)	3.56E-06	6.78E-06	2.69E-05	2.02E-06	1.03E-05	9.8e-007 (J)	2.28E-06	5.81E-06	3.74e-006 (J)	2.4e-006 (J)	—	—	—
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	5.82E-05	2.84E-05	5.48E-05	0.000206	1.50E-05	6.47E-05	7.44E-06	1.42E-05	2.72E-05	2.01E-05	1.77E-05	2.31E-06	5.95E-06	1.74e-006 (J)
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	1.44e-005 (J)	1.17E-05	3.08E-05	0.000102	8.20E-06	3.61E-05	3.56E-06	7.68E-06	1.52E-05	4.89e-006 (J)	4.78E-06	—	1.4e-006 (J)	—
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	—	—	1.99E-06	—	—	—	—	—	—	—	—	—	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	1.64e-005 (J)	1.62E-05	3.40E-05	0.000143	9.22E-06	4.29E-05	4.51E-06	8.92E-06	1.76E-05	5.27e-006 (J)	4.85E-06	—	1.53e-006 (J)	—
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	—	—	1.96E-06	—	2.56E-06	—	—	2.18E-06	—	—	—	—	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	—	—	1.78e-006 (J)	—	—	—	—	—	—	—	—	—	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	2.25e-006 (J)	9.36e-007 (J)	2.06E-06	8.27E-06	—	3.38E-06	—	7.88e-007 (J)	2.02E-06	—	—	—	—	—
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	—	—	2.20E-06	—	—	—	—	—	—	—	—	—	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-3	PCB-31	PCB-32	PCB-34	PCB-35	PCB-36	PCB-37	PCB-38	PCB-39	PCB-4	PCB-40/PCB-71	PCB-41	PCB-42	PCB-43
Recreational SSLs[a]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Residential SSLs[c]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	2.58E-06	0.000189	2.82E-05	—	5.55E-06	—	0.000112	1.92E-05	2.67e-006 (J)	4.20E-06	0.000226	3.61E-05	0.000147	1.26E-05
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	1.66e-006 (J)	6.68E-05	1.55E-05	—	1.58e-006 (J)	—	3.87E-05	1.89e-006 (J)	—	3.57e-006 (J)	7.90E-05	1.13E-05	5.10E-05	4.83E-06
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	—	1.43E-05	1.64e-006 (J)	—	—	—	9.3e-006 (J)	—	—	—	1.18E-05	1.45e-006 (J)	7.95E-06	—
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	1.51E-05	6.35E-05	7.07e-006 (J)	—	1.35e-005 (J)	—	4.07e-005 (J)	—	3.48e-006 (J)	—	3.63E-05	—	2.52E-05	—
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	—	4.48e-006 (J)	—	—	—	—	2.53e-006 (J)	—	—	—	6.08E-06	—	3.80E-06	—
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	1.42E-05	0.000229	3.25E-05	8.98e-007 (J)	1.55E-05	1.96e-006 (J)	8.31E-05	2.32E-05	4.25E-06	1.04E-05	0.000183	2.23E-05	0.000111	1.37E-05
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	—	5e-006 (J)	—	—	—	—	3.22e-006 (J)	1.02e-006 (J)	—	—	4.62E-06	—	2.62E-06	—
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	—	6.62e-006 (J)	—	—	—	—	3.25e-006 (J)	7.34e-007 (J)	—	—	3.29e-006 (J)	—	2.17E-06	—
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	—	8.8e-006 (J)	9.29e-007 (J)	—	1.01e-006 (J)	—	8.25e-006 (J)	1.44e-006 (J)	—	—	5.82E-06	—	4.14E-06	—
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	4.12E-06	5.38E-05	8.06E-06	—	1.64e-006 (J)	—	2.41E-05	1.62E-05	—	4.18E-06	5.12E-05	4.71E-06	3.19E-05	3.65e-006 (J)
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	1.81e-006 (J)	1.41E-05	1.75e-006 (J)	—	—	—	6.52e-006 (J)	1.10E-05	—	—	1.26E-05	1.87e-006 (J)	9.91E-06	—
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	1.76e-006 (J)	1.36E-05	1.74e-006 (J)	—	—	—	8.31e-006 (J)	7.59E-06	—	—	1.17E-05	2.78E-06	9.17E-06	—
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	7.61e-007 (J)	—	—	—	—	—	6.21e-007 (J)	—	—	—	—	—	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	—	2.25e-006 (J)	—	—	—	—	—	9.4e-007 (J)	—	—	—	—	—	—
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	6.52e-007 (J)	—	—	—	—	—	1.85e-006 (J)	—	—	—	—	—	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-44/PCB-47/PCB-65	PCB-45/PCB-51	PCB-46	PCB-48	PCB-49/PCB-69	PCB-50/PCB-53	PCB-52	PCB-55	PCB-56	PCB-58	PCB-59/PCB-62/PCB-75	PCB-6	PCB-60	PCB-61/PCB-70/PCB-74/PCB-76
Recreational SSLs[a]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Residential SSLs[c]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	0.000572	—	1.44E-05	7.95E-05	0.000335	4.79E-05	0.000578	4.38E-06	0.000337	—	2.90E-05	2.14E-06	0.00014	0.00108
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	0.000193	2.69E-05	7.82E-06	2.71E-05	0.000117	2.19E-05	0.000206	—	0.000114	—	9.20E-06	1.25e-006 (J)	4.79E-05	0.000312
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	3.35E-05	2.76e-006 (J)	8.42e-007 (J)	3.76E-06	2.16E-05	2.7e-006 (J)	3.70E-05	—	2.28E-05	—	—	—	9.43E-06	6.89E-05
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	0.00011	1.3e-005 (J)	4.26e-006 (J)	1.37E-05	7.26E-05	1.51e-005 (J)	0.000159	—	6.89E-05	—	—	—	2.95E-05	0.000235
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	1.82E-05	1.85e-006 (J)	—	1.11e-006 (J)	1.06E-05	1.9e-006 (J)	2.56E-05	—	8.05E-06	—	—	—	2.76e-006 (J)	2.80E-05
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	0.000459	4.06E-05	1.32E-05	7.27E-05	0.000282	3.39E-05	0.000473	3.91E-06	0.000234	1.56e-006 (J)	2.16E-05	8.95E-06	0.000105	0.000754
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	1.36E-05	—	—	1.06e-006 (J)	8.38E-06	—	1.69E-05	—	8.04E-06	—	—	—	3.2e-006 (J)	2.77E-05
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	9.63E-06	—	—	7.21e-007 (J)	6.39E-06	—	1.28E-05	—	6.17E-06	—	—	—	2.45e-006 (J)	2.10E-05
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	1.77E-05	1.71e-006 (J)	—	1.33e-006 (J)	1.16E-05	2.1e-006 (J)	2.53E-05	—	1.32E-05	—	—	—	5.42E-06	5.06E-05
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	—	—	4.99E-06	1.60E-05	0.000115	1.58E-05	0.000346	—	8.82E-05	—	5.93E-06	1.51e-006 (J)	3.55E-05	0.0004
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	4.14E-05	3.51e-006 (J)	8.46e-007 (J)	4.53E-06	2.69E-05	3.78e-006 (J)	5.09E-05	—	2.32E-05	—	—	—	9.56E-06	7.90E-05
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	4.03E-05	2.66e-006 (J)	8.55e-007 (J)	3.95E-06	2.60E-05	2.7e-006 (J)	5.01E-05	-	2.47E-05	—	—	—	1.03E-05	8.14E-05
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	—	—	—	—	—	—	—	1.27e-006 (J)	—	—	—	—	4.86e-006 (J)
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	3.34e-006 (J)	—	—	—	1.76e-006 (J)	-	4.33E-06	-	1.85e-006 (J)	—	—	—	—	8.99E-06
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-63	PCB-64	PCB-66	PCB-67	PCB-68	PCB-7	PCB-72	PCB-73	PCB-77	PCB-78	PCB-79	PCB-8	PCB-81	PCB-82
Recreational SSLs[a]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**1.46**	**na**	**na**	**na**	**0.488**	**na**
Residential SSLs[c]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**0.341**	**na**	**na**	**na**	**0.114**	**na**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	1.35E-05	0.00022	0.000687	6.66E-06	1.39e-006 (J)	—	2.67e-006 (J)	5.78E-06	7.90E-05	—	5.13E-06	1.36e-005 (J)	2.96E-06	7.40E-05
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	4.62e-006 (J)	8.11E-05	0.000217	2.34E-06	—	—	8.46e-007 (J)	—	2.59E-05	—	2.39e-006 (J)	8.17e-006 (J)	7.15e-007 (J)	3.40E-05
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	8.65e-007 (J)	1.26E-05	4.44E-05	—	—	—	—	—	6.28E-06	—	6.59e-007 (J)	1.74e-006 (J)	—	1.07E-05
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	3.71e-006 (J)	4.05E-05	0.000133	—	—	—	—	—	2.71E-05	—	1.03e-005 (J)	1.32e-005 (J)	—	8.80E-05
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	—	5.23E-06	1.62E-05	—	—	—	—	—	2.28E-06	—	6.68e-007 (J)	—	—	9.28E-06
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	1.15E-05	0.000187	0.000444	5.66E-06	1.23e-006 (J)	1.53e-006 (J)	2.22e-006 (J)	—	4.71E-05	7.86e-007 (J)	6.92E-06	4.28E-05	2.17E-06	7.73E-05
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	—	4.94E-06	1.60E-05	—	—	—	—	—	3.03E-06	—	—	—	—	6.70E-06
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	—	3.34E-06	1.23E-05	—	—	—	—	—	2.02E-06	—	—	4.09e-006 (J)	—	5.98E-06
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	—	6.35E-06	2.83E-05	—	—	—	—	—	6.32E-06	—	8.52e-007 (J)	1.35e-006 (J)	—	9.32E-06
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	4.31e-006 (J)	6.33E-05	0.000164	2.21E-06	—	—	8.03e-007 (J)	—	2.37E-05	—	6.83E-06	8.12e-006 (J)	7.37e-007 (J)	0.000102
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	8.16e-007 (J)	1.44E-05	4.26E-05	—	—	—	—	—	8.05E-06	—	1.44e-006 (J)	1.24e-006 (J)	—	1.69E-05
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	8.95e-007 (J)	1.42E-05	4.83E-05	—	—	—	—	—	8.80E-06	—	1.17e-006 (J)	1.51e-006 (J)	—	1.48E-05
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	—	2.93e-006 (J)	—	—	—	—	—	1.13e-006 (J)	—	—	—	—	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	—	1.09e-006 (J)	3.81e-006 (J)	—	—	—	—	—	—	—	—	—	—	1.02e-006 (J)
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-83	PCB-84	PCB-85/PCB-116/PCB-117	PCB-86/87/97/109/119/125	PCB-88/PCB-91	PCB-89	PCB-9	PCB-90/PCB-101/PCB-113	PCB-92	PCB-93/PCB-100	PCB-94	PCB-95	PCB-96	PCB-98/PCB-102
Recreational SSLs[a]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Residential SSLs[c]					**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	2.80E-05	0.000114	0.000108	0.000366	6.61E-05	7.87E-06	—	0.000444	6.95E-05	3e-006 (J)	1.87e-006 (J)	0.000292	2.82E-06	1.65E-05
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	1.08E-05	5.22E-05	5.18E-05	0.000159	3.15E-05	3.49E-06	—	0.00019	3.02E-05	—	7.78e-007 (J)	0.000132	1.29e-006 (J)	6.85E-06
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	4.26E-06	2.00E-05	1.71E-05	5.19E-05	1.12E-05	—	—	7.66E-05	1.31E-05	—	—	6.09E-05	—	1.5e-006 (J)
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	4.96E-05	0.000303	0.000141	0.000475	0.000157	6.04e-006 (J)	—	0.000768	0.000182	—	3.45e-006 (J)	0.000969	4.43e-006 (J)	2.35E-05
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	4.83E-06	2.99E-05	1.55E-05	5.90E-05	1.53E-05	—	—	0.000102	2.07E-05	—	—	0.000102	—	1.88e-006 (J)
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	2.71E-05	0.000136	0.000121	0.000381	7.84E-05	6.64E-06	2.50E-06	0.000487	8.40E-05	3.16e-006 (J)	2.05E-06	0.000374	2.46E-06	1.54E-05
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	3.28E-06	1.68E-05	1.06E-05	3.46E-05	8.99E-06	—	—	5.50E-05	1.14E-05	—	—	5.63E-05	—	—
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	2.47E-06	1.27E-05	9.75E-06	3.49E-05	7.04E-06	—	—	5.90E-05	1.03E-05	—	—	4.84E-05	—	—
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	4.84E-06	2.57E-05	1.55E-05	5.20E-05	1.41E-05	—	—	9.96E-05	1.86E-05	—	—	9.74E-05	—	1.53e-006 (J)
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	5.18E-05	0.000256	0.000171	0.000645	0.000138	5.64E-06	—	0.00113	0.000213	—	2.47E-06	0.000935	3.27E-06	1.68E-05
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	8.69E-06	3.74E-05	2.95E-05	0.000113	2.18E-05	8.64e-007 (J)	—	0.000259	4.20E-05	—	—	0.000197	—	3.13e-006 (J)
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	—	—	—	—	—	—	—	3.86e-006 (J)	—	—	—	2.93e-006 (J)	—	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	8.17E-06	3.03E-05	2.81E-05	0.000104	1.86E-05	7.76e-007 (J)	-	0.000232	3.56E-05	—	—	0.000171	—	2.72e-006 (J)
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	—	—	—	—	—	—	—	3.55e-006 (J)	—	—	—	2.07e-006 (J)	—	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	—	—	—	—	—	—	—	5.3e-006 (J)	—	—	—	3.45e-006 (J)	—	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	—	2.27E-06	2.23e-006 (J)	7.71e-006 (J)	1.39e-006 (J)	—	—	1.58E-05	2.53E-06	—	—	1.13E-05	—	—
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	—	—	—	—	—	—	2.98e-006 (J)	—	—	—	1.84e-006 (J)	—	—

Table 2.1-4 (continued)

Sample ID	Reach	Location ID	Depth (cm)	Media	PCB-99	RDX	TATB	Total PCB	Total decaCB	Total diCB	Total heptaCB	Total hexaCB	Total monoCB	Total nonaCB	Total octaCB	Total pentaCB	Total tetraCB	Total triCB	Trinitrotoluene[2,4,6-]
Recreational SSLs[a]					**na**	**425**	**16000[e]**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**310**
Residential SSLs[c]					**na**	**58.2**	**2200[e,f]**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**39.1**
CACV-14-49256	CDV-2E	CV-61491	0–5	Sediment	0.000248	0.796	2.18	0.0152	1.45E-05	5.08E-05	0.00253	0.00319	3.77E-06	6.08E-05	0.000874	0.00301	0.00467	0.000824	0.408 (J)
CACV-14-49257	CDV-2E	CV-61492	0–14	Sediment	0.000108	—	—	0.00475	7.68E-06	2.70E-05	0.000417	0.000888	1.66E-06	1.54E-05	0.000144	0.00134	0.00156	0.000351	—
CACV-14-49258	CDV-3	CV-61493	0–15	Sediment	3.70E-05	—	—	0.00165	9.33E-06	4.63E-06	0.000194	0.000492	—	1.32E-05	7.90E-05	0.000504	0.000289	6.71E-05	—
CACV-14-49259	CDV-3	CV-61494	0–20	Sediment	0.000324	0.154 (J)	—	0.0153	1.97E-05	0.000132	0.00147	0.00645	2.52E-05	4.23E-05	0.00039	0.00547	0.000998	0.000328	—
CACV-14-49260	CDV-4	CV-61485	0–22	Sediment	4.21E-05	—	—	0.00176	3.50E-06	—	0.00018	0.000747	—	4.44E-06	5.33E-05	0.000618	0.000132	1.74E-05	—
CACV-14-49261	CDV-4	CV-61486	0–8	Sediment	0.000262	—	1.4	0.0122	2.79E-05	0.000166	0.000966	0.0027	2.83E-05	4.04E-05	0.000337	0.00335	0.00353	0.00106	—
CACV-14-49262	CDV-4	CV-61486	8–31	Sediment	2.43E-05	—	—	0.00153	5.53E-06	—	0.00025	0.000674	—	7.45E-06	7.57E-05	0.000391	0.00011	2.15E-05	—
CAWA-14-49297	WA-3	WA-61489	0–55	Sediment	2.23E-05	—	—	0.00181	2.78E-06	4.09E-06	0.000331	0.000856	—	8.06E-06	0.000104	0.00039	8.23E-05	2.87E-05	—
CAWA-14-49298	WA-3	WA-61490	0–10	Sediment	3.79E-05	—	—	0.00279	5.81E-06	4.96E-06	0.000545	0.00121	—	1.36E-05	0.000163	0.000623	0.000181	4.07E-05	—
CAWA-14-49271	WA-3	WA-61491	0–6	Sediment	0.000427	—	1.67	0.0253	2.72E-05	2.89E-05	0.00455	0.0111	1.19E-05	8.64E-05	0.00124	0.00663	0.00139	0.000255	—
CAWA-14-49272	WA-4	WA-61494	0–4	Sediment	7.59E-05	—	0.362 (J)	0.0084	1.52E-05	6.89E-06	0.0026	0.00335	1.81E-06	4.73E-05	0.000673	0.00131	0.000335	6.96E-05	—
CAWA-14-49273	WA-4	WA-61495	0–9	Sediment	-	—	—	0.000129	—	—	4.56E-05	6.24E-05	—	—	1.14E-05	9.63E-06	—	—	—
CAWA-14-49274	WA-4	WA-61496	0–2	Sediment	6.90E-05	—	—	0.0087	1.76E-05	7.21E-06	0.00282	0.00331	1.76E-06	5.63E-05	0.000921	0.00116	0.00034	6.82E-05	—
CAWA-14-49275	WA-5	WA-61497	0–8	Sediment	1.49e-006 (J)	—	—	0.000119	2.18E-06	—	2.55E-05	5.01E-05	—	2.56E-06	1.11E-05	1.62E-05	1.02E-05	1.38E-06	—
CAWA-14-49276	WA-5	WA-61498	0–8	Sediment	1.73e-006 (J)	—	—	0.000115	—	—	2.97E-05	5.83E-05	—	—	1.01E-05	1.73E-05	—	—	—
CAWA-14-49277	WA-6	WA-61499	0–7	Sediment	5.15E-06	—	—	0.000581	2.02E-06	—	0.000153	0.000261	—	4.17E-06	5.17E-05	7.93E-05	2.52E-05	5.44E-06	—
CAWA-14-49278	WA-6	WA-61499	7–17	Sediment	—	—	—	0.000101	—	—	3.09E-05	4.75E-05	—	—	1.20E-05	8.36E-06	—	2.50E-06	—

Notes: Units are mg/kg. J = The analyte was positively identified, and the associated numerical value is estimated to be more uncertain than would normally be expected for that analysis.

[a] SSLs from LANL (2012, 228733).

[b] na = Not available.

[c] SSLs from NMED (2012, 219971).

[d] — = Not detected or not analyzed.

[e] SSL for 1,3,5-trinitrobenzene used as a surrogate based on structural similarity.

[f] SSL from EPA regional tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

Table 3.1-1
Estimated Flows at Surface Gaging Stations and Precipitation at Rain Gages during 2012 and 2013 Floods in the Water Canyon and Cañon de Valle Watershed

Date	E252[a]	E253[a]	E265[a]	Rain Gage RG-265[b]	Rain Gage RG-253[b]
Monsoon season maximum before 9/9/2013	183.3	17.2	0.3	1.0	0.7
9/9/2013	0.0	0.0	0.0	0.0	0.0
9/10/2013	0.0	6.4	0.0	1.5	—[c]
9/11/2013	0.0	0.0	0.0	0.0	—
9/12/2013	1.8	24.4	4.6	3.1	2.4
9/13/2013	429.3	308.7	400.0	1.3	2.6
9/14/2013	—	—	0.8	1.2	0.2
9/15/2013	—	—	0.0	0.0	0.0

[a] Maximum daily discharge values in cfs. Values either directly measured or estimated from high-water marks at individual stations.

[b] Daily total precipitation in inches.

[c] — = No data are available for E252 and E253 because these gaging stations were rendered inoperable following the September 13, 2013, flood event.

Appendix A

Analytical Data from 2013 Sediment Samples
from the Water Canyon and Cañon de Valle Watershed
(on CD included with this document)

General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-2961

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Metals(W)	NMED Explosives list	Tal Metals
CACV-14-49260	Mar 7 2014	10:10	SED	1			1
CACV-14-49263	Mar 7 2014	10:10	SED	1			1
CACV-14-49261	Mar 7 2014	10:30	SED	1			1
CACV-14-49262	Mar 7 2014	10:40	SED	1			1
CAWA-14-49297	Mar 7 2014	11:10	SED			1	1
CACV-14-49264	Mar 7 2014	12:20	W		1		
CAWA-14-49298	Mar 7 2014	11:50	SED			1	1
CAWA-14-49271	Mar 7 2014	11:25	SED	1			1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Murphy	3/10/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49260 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		10:10	MEDIA:		SED
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	Sem ~~ST~~	CV-614485	FIELD PREP:	NA	↓
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	↓
TOP DEPTH:		0 cm	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:		0.72/1.22 cm	EXCAVATED:		YES / (NO) / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse sediment

LOCATION COMMENTS: Reach CDV-4

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

Bkgd Rad
α: 26.2 dpm
β/γ: 1969 dpm

Gross **Alpha** 33 dpm

Gross **Beta/Gamma** 2060 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time**

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49261 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		10:30	MEDIA:		SED
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	Stem ~~SZ~~ Field	CV-614816	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.262 ft 8cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment

LOCATION COMMENTS: Reach CDV-4

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

Bkgd α: 26.2 dpm β/γ: 1969 dpm

Gross Alpha 56 dpm

Gross Beta/Gamma 1605 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49262 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		10:40	MEDIA:		SED
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	SRM 3/6/14 ~~SJ~~	CV-614876 PRC 3/7/14	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0.262 ft x 8 cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		1.017 ft x 31 cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse Sediment

LOCATION COMMENTS: Reach CDV-4

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

Bkgd N/A PRC 3/7/14

Alpha 56 **dpm** **PID** Ambient Reading = NA **ppm**

Beta/Gamma 1605 **dpm**

Bkgd α: 26.2 dpm β/γ: 1969 dpm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Grace (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49263 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED 3/6/14	SED
TIME COLLECTED (HH:MM):		10:10	MEDIA:		SED
PRS ID:		Cañon de Valle	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	Specified At Time Of Sampling	CV-61485	FIELD PREP:		NA
LOCATION TYPE:		BH	FIELD QC TYPE:	FD	OK
TOP DEPTH:		0cm	SAMPLE USAGE:	QC	OK
BOTTOM DEPTH:		0.721 ft 22cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE		
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE		
	~~NMED Explosives list~~	~~250 ML AMBER GLASS~~	~~1~~	~~ICE~~	N	
	Tal Metals	125 ML POLY	1	ICE		

PD 3/6/14

SAMPLE COMMENTS: Field Duplicate of CACV-14-49260 Coarse Sediment

LOCATION COMMENTS: Reach CV-4.

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

Bkgd
α: 26.2 dpm
β/γ: 1969 dpm

Gross **Alpha** 33 dpm

Gross **Beta/Gamma** 2060 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name) (Signature)		(Printed Name) (Signature)	

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49264 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	W	OK
TIME COLLECTED (HH:MM):		1220	MEDIA:		NA
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	DC	OK
LOCATION ID:	Specified At Time Of Sampling	WA-61490 ~~1150~~ PRC 03/07/14	FIELD PREP:	UF	↓
LOCATION TYPE:		BH	FIELD QC TYPE:	FR	↓
TOP DEPTH:		0cm	SAMPLE USAGE:	QC	↓
BOTTOM DEPTH:		0.35~~ft~~ 10cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	Metals(W)	1 LITER POLY	1	HNO3	Y	

SAMPLE COMMENTS: FR of ~~CACV-14~~ PRC 03/07/2014 CAWA-14-49298

LOCATION COMMENTS:

FIELD PARAMETERS: N/A

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49271 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1125	MEDIA:		SED
PRS ID:	Water-Canyon	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~60~~ Sem 3/6/14	WA-61491	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.196 ft 6cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: Reach WA-3

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE Spot test negative

Skgd Rad
U: 26.2 dpm
Th: 1969 dpm

Gross Alpha 18 dpm

Gross Beta/Gamma 1952 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49297 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED 3/6/14	SED
TIME COLLECTED (HH:MM):		11:10	MEDIA:		SED
PRS ID:		Water Canyon	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	WA-61489	OK	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	1.80 ft	55cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse Sediments

LOCATION COMMENTS: Reach WA-3

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

Bkgd
α-26.2 dpm
β-1969 dpm

Gross Alpha 18 dpm

Gross Beta/Gamma 1745 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/18/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49298 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	& SZM 3/4/14	SED
TIME COLLECTED (HH:MM):		1150	MEDIA:		SED
PRS ID:		Water Canyon	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	WA-61490	OK	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.328 ft 10cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediments

LOCATION COMMENTS: Reach WA-3

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HF spot test negative

Bkgd Ra2 : 262 dpm Gross **Alpha** 61 **dpm**

Ir: 1969 dpm Gross **Beta/Gamma** 1947 **dpm**

PID Ambient Reading = NA **ppm**

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Green (Signature)	3/7/14 2120
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name) (Signature)		(Printed Name) (Signature)	

Report Date 11/18/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-2961

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
344334	EPA:245.2					
344334	SW-846:6010B	6	1			
344334	SW-846:6020	6	1			
344334	SW-846:7471A	6	1			
344334	SW-846:8082	4	1			
344334	SW-846:8321A_MOD	6	1			

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
344334	EPA:245.2	1375114	1375113						1	1				1				1			
344334	SW-846:6010B	1372413	1372412						1	1				1				1			
344334	SW-846:6010B	1372417	1372416	6	1				1	1				1				1			
344334	SW-846:6020	1372024	1372023						1	1				1				1			
344334	SW-846:6020	1372030	1372029	6	1				1	1				1				1			
344334	SW-846:7471A	1376453	1376450	6	1				1	1				1				1			
344334	SW-846:8082	1373644	1373626	4	1				1	1	1			1							
344334	SW-846:8321A_MOD	1372041	1372040	6	1				1	1	1			1							

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:245.2	INORGANIC	CACV-14-49264	1203056172	DUP	1	0	0	0
EPA:245.2	INORGANIC	CACV-14-49264	1203056173	MS	0	0	1	0
EPA:245.2	INORGANIC	CACV-14-49264	344334006	FR	1	0	0	0
EPA:245.2	INORGANIC	LCS	1203056171	LCS	0	0	1	0
EPA:245.2	INORGANIC	MB	1203056170	MB	1	0	0	0
SW-846:6010B	INORGANIC	CACV-14-49260	1203050020	DUP	17	0	0	0
SW-846:6010B	INORGANIC	CACV-14-49260	1203050021	MS	0	0	17	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:6010B	INORGANIC	CACV-14-49260	344334001	REG	17	0	0	0
SW-846:6010B	INORGANIC	CACV-14-49261	344334003	REG	17	0	0	0
SW-846:6010B	INORGANIC	CACV-14-49262	344334004	REG	17	0	0	0
SW-846:6010B	INORGANIC	CACV-14-49263	344334002	FD	17	0	0	0
SW-846:6010B	INORGANIC	CACV-14-49264	344334006	FR	13	0	0	0
SW-846:6010B	INORGANIC	CAWA-14-49271	344334008	REG	17	0	0	0
SW-846:6010B	INORGANIC	CAWA-14-49297	344334005	REG	17	0	0	0
SW-846:6010B	INORGANIC	CAWA-14-49298	344334007	REG	17	0	0	0
SW-846:6010B	INORGANIC	CAWA-14-54768	1203050009	DUP	13	0	0	0
SW-846:6010B	INORGANIC	CAWA-14-54768	1203050010	MS	0	0	13	0
SW-846:6010B	INORGANIC	LCS	1203050008	LCS	0	0	13	0
SW-846:6010B	INORGANIC	LCS	1203050019	LCS	0	0	17	0
SW-846:6010B	INORGANIC	MB	1203050007	MB	13	0	0	0
SW-846:6010B	INORGANIC	MB	1203050018	MB	17	0	0	0
SW-846:6020	INORGANIC	CACV-14-49260	1203049013	DUP	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49260	1203049014	MS	0	0	5	0
SW-846:6020	INORGANIC	CACV-14-49260	344334001	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49261	344334003	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49262	344334004	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49263	344334002	FD	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49264	1203048999	DUP	9	0	0	0
SW-846:6020	INORGANIC	CACV-14-49264	1203049000	MS	0	0	9	0
SW-846:6020	INORGANIC	CACV-14-49264	344334006	FR	9	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49271	344334008	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49297	344334005	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49298	344334007	REG	5	0	0	0
SW-846:6020	INORGANIC	LCS	1203048998	LCS	0	0	9	0
SW-846:6020	INORGANIC	LCS	1203049012	LCS	0	0	5	0
SW-846:6020	INORGANIC	MB	1203048997	MB	9	0	0	0
SW-846:6020	INORGANIC	MB	1203049011	MB	5	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49260	1203059496	DUP	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49260	1203059497	MS	0	0	1	0
SW-846:7471A	INORGANIC	CACV-14-49260	344334001	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49261	344334003	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49262	344334004	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49263	344334002	FD	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49271	344334008	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49297	344334005	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49298	344334007	REG	1	0	0	0
SW-846:7471A	INORGANIC	LCS	1203059495	LCS	0	0	1	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:7471A	INORGANIC	MB	1203059494	MB	1	0	0	0
SW-846:8082	PESTPCB	CACV-14-49260	344334001	REG	7	2	0	0
SW-846:8082	PESTPCB	CACV-14-49261	344334003	REG	7	2	0	0
SW-846:8082	PESTPCB	CACV-14-49262	344334004	REG	7	2	0	0
SW-846:8082	PESTPCB	CACV-14-49263	344334002	FD	7	2	0	0
SW-846:8082	PESTPCB	CAPU-14-56568	1203052772	MS	0	2	2	0
SW-846:8082	PESTPCB	CAPU-14-56568	1203052773	MSD	0	2	2	0
SW-846:8082	PESTPCB	CAWA-14-49271	344334008	REG	7	2	0	0
SW-846:8082	PESTPCB	LCS	1203052774	LCS	0	2	2	0
SW-846:8082	PESTPCB	MB	1203052771	MB	7	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49260	1203049040	MS	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49260	1203049041	MSD	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49260	344334001	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49261	344334003	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49262	344334004	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49263	344334002	FD	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49271	344334008	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49297	344334005	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49298	344334007	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	LCS	1203049039	LCS	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	MB	1203049038	MB	20	2	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

DATA VALIDATION REPORT

Blank FS ID	Blank Lab Sample	Blank Type	Analytical Method	Sample	Parameter Name	Blank Lab Result	Lab Qualifier	Blank Lab Units	Blank Lab Detection Limit
MB	1203050007	METHOD BLANK	SW-846:6010B	W	Iron	83.7	J	ug/L	100
MB	1203050007	METHOD BLANK	SW-846:6010B	W	Potassium	50.5	J	ug/L	150
MB	1203059494	METHOD BLANK	SW-846:7471A	SED	Mercury	5.76	J	ug/kg	12.0

Field Sample ID	Blank Lab	Blank Type	Analytical Method	Parameter Name	Blank Lab Result	Blank Lab Units	Lab Result	Lab Qualifier	Lab Detection Limit	Detect Flag	Detect to Nondetect Factor	Detect to Estimated Factor	Use Factors
CACV-14-49264	1203050007	METHOD BLANK	SW-846:6010B	Iron	83.7	ug/L	85.6	J	100	Y	5		Y
CACV-14-49264	1203050007	METHOD BLANK	SW-846:6010B	Potassium	50.5	ug/L	51.7	J	150	Y	5		Y
CACV-14-49261	1203059494	METHOD BLANK	SW-846:7471A	Mercury	5.76	ug/kg	14.7	J	16.1	Y	5		Y
CACV-14-49262	1203059494	METHOD BLANK	SW-846:7471A	Mercury	5.76	ug/kg	8.76	J	11.5	Y	5		Y
CAWA-14-49297	1203059494	METHOD BLANK	SW-846:7471A	Mercury	5.76	ug/kg	4.33	J	12.0	Y	5		Y
CAWA-14-49298	1203059494	METHOD BLANK	SW-846:7471A	Mercury	5.76	ug/kg	5.6	J	13.2	Y	5		Y

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

Field Sample ID	MS Lab Sample ID	MSD Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS Spike Recovery	MSD Spike Recovery	MS Upper Limit	MS Lower Limit	MS Reject Limit	RPD	RPD Limit

DATA VALIDATION REPORT

Field Sample ID	MS Lab Sample ID	MSD Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS Spike Recovery	MSD Spike Recovery	MS Upper Limit	MS Lower Limit	MS Reject Limit	RPD	RPD Limit
CACV-14-49260	1203050021		SW-846:6010B	Aluminum	1372416	04-07-2014	SED	341		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Aluminum	1372416	04-07-2014	SED	341		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Barium	1372416	04-07-2014	SED	180		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Barium	1372416	04-07-2014	SED	180		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Copper	1372416	04-07-2014	SED	60.6		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Copper	1372416	04-07-2014	SED	60.6		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Iron	1372416	04-07-2014	SED	772		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Iron	1372416	04-07-2014	SED	772		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Manganese	1372416	04-07-2014	SED	255		125	75	10		
CACV-14-49260	1203050021		SW-846:6010B	Manganese	1372416	04-07-2014	SED	255		125	75	10		
CACV-14-49260	1203049014		SW-846:6020	Nickel	1372029	04-01-2014	SED	164		125	75	10		
CACV-14-49260	1203049014		SW-846:6020	Nickel	1372029	04-01-2014	SED	164		125	75	10		
CACV-14-49264	1203049000		SW-846:6020	Thallium	1372023	03-26-2014	W	69.3		125	75	10		
CACV-14-49264	1203049000		SW-846:6020	Thallium	1372023	03-26-2014	W	69.3		125	75	10		

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

Field Sample ID	Lab Sample ID	LD Lab Sample ID	Analytical Method	Parameter Name	Sample Matrix	Lab Result	LD Lab Result	Lab Units	Detect Flag	LD Detect Flag	RPD	RPD Limit
CACV-14-49260	344334001	1203050020	SW-846:6010B	Copper	SED	27200	3430	ug/kg	Y	Y	155	20

DATA VALIDATION REPORT

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

Location ID	COC Number	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Paramter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detect Flag	Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent	Analysis Lot ID	Validation Status Code	Use Flag
CV-61485	2014-2961	CACV-14-49260	REG	INIT	INORGANIC	SW-846:6010B	Aluminum	N	J+	I6b	Y	1610000	ug/kg	1610	mg/kg			SD	03/07/2014		1372417	VAL	Y
CV-61485	2014-2961	CACV-14-49260	REG	INIT	INORGANIC	SW-846:6010B	Barium	N	J+	I6b	Y	130000	ug/kg	130	mg/kg			SD	03/07/2014		1372417	VAL	Y
CV-61485	2014-2961	CACV-14-49260	REG	INIT	INORGANIC	SW-846:6010B	Copper	N*	J-	I6a	Y	27200	ug/kg	27.2	mg/kg			SD	03/07/2014		1372417	VAL	Y
CV-61485	2014-2961	CACV-14-49260	REG	INIT	INORGANIC	SW-846:6010B	Iron		J+	I6b	Y	9580000	ug/kg	9580	mg/kg			SD	03/07/2014		1372417	VAL	Y
CV-61485	2014-2961	CACV-14-49260	REG	INIT	INORGANIC	SW-846:6010B	Manganese		J+	I6b	Y	238000	ug/kg	238	mg/kg			SD	03/07/2014		1372417	VAL	Y
CV-61485	2014-2961	CACV-14-49260	REG	INIT	INORGANIC	SW-846:6020	Nickel	N	J+	I6b	Y	1410	ug/kg	1.41	mg/kg			SD	03/07/2014		1372030	VAL	Y
CV-61486	2014-2961	CACV-14-49261	REG	INIT	INORGANIC	SW-846:7471A	Mercury	J	U	I4	N	14.7	ug/kg	0.0147	mg/kg			SD	03/07/2014		1376453	VAL	Y
CV-61486	2014-2961	CACV-14-49262	REG	INIT	INORGANIC	SW-846:7471A	Mercury	J	U	I4	N	8.76	ug/kg	0.00876	mg/kg			SD	03/07/2014		1376453	VAL	Y
WA-61490	2014-2961	CACV-14-49264	FR	INIT	INORGANIC	SW-846:6010B	Iron	J	U	I4	N	85.6	ug/L	85.6	ug/L			W	03/07/2014		1372413	VAL	Y
WA-61490	2014-2961	CACV-14-49264	FR	INIT	INORGANIC	SW-846:6010B	Potassium	J	U	I4	N	51.7	ug/L	0.0517	mg/L			W	03/07/2014		1372413	VAL	Y
WA-61490	2014-2961	CACV-14-49264	FR	INIT	INORGANIC	SW-846:6020	Thallium	UN	UJ	I6a	N	2.00	ug/L	2.00	ug/L			W	03/07/2014		1372024	VAL	Y
WA-61489	2014-2961	CAWA-14-49297	REG	INIT	INORGANIC	SW-846:7471A	Mercury	J	U	I4	N	4.33	ug/kg	0.00433	mg/kg			SD	03/07/2014		1376453	VAL	Y
WA-61490	2014-2961	CAWA-14-49298	REG	INIT	INORGANIC	SW-846:7471A	Mercury	J	U	I4	N	5.6	ug/kg	0.0056	mg/kg			SD	03/07/2014		1376453	VAL	Y

Reason Code	Description
I4	the sample result is =<5x the concentration of related analyte in the method blank.
I6a	The associated matrix spike recovery was below the lower acceptance limit (LAL) but >10%. Follow the external laboratory limits located within the associated data package.
I6b	The associated matrix spike recovery was above the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package.
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

DATA VALIDATION REPORT

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CACV-14-49260	CV-61485	REG	SW-846:6010B	0	17
CACV-14-49260	CV-61485	REG	SW-846:6020	0	5
CACV-14-49260	CV-61485	REG	SW-846:7471A	0	1
CACV-14-49260	CV-61485	REG	SW-846:8082	0	7
CACV-14-49260	CV-61485	REG	SW-846:8321A_MOD	0	20
CACV-14-49261	CV-61486	REG	SW-846:6010B	0	17
CACV-14-49261	CV-61486	REG	SW-846:6020	0	5
CACV-14-49261	CV-61486	REG	SW-846:7471A	0	1
CACV-14-49261	CV-61486	REG	SW-846:8082	0	7
CACV-14-49261	CV-61486	REG	SW-846:8321A_MOD	0	20
CACV-14-49262	CV-61486	REG	SW-846:6010B	0	17
CACV-14-49262	CV-61486	REG	SW-846:6020	0	5
CACV-14-49262	CV-61486	REG	SW-846:7471A	0	1
CACV-14-49262	CV-61486	REG	SW-846:8082	0	7
CACV-14-49262	CV-61486	REG	SW-846:8321A_MOD	0	20
CACV-14-49263	CV-61485	FD	SW-846:6010B	0	17
CACV-14-49263	CV-61485	FD	SW-846:6020	0	5
CACV-14-49263	CV-61485	FD	SW-846:7471A	0	1
CACV-14-49263	CV-61485	FD	SW-846:8082	0	7
CACV-14-49263	CV-61485	FD	SW-846:8321A_MOD	0	20
CACV-14-49264	WA-61490	FR	EPA:245.2	0	1
CACV-14-49264	WA-61490	FR	SW-846:6010B	0	13
CACV-14-49264	WA-61490	FR	SW-846:6020	0	9
CAWA-14-49271	WA-61491	REG	SW-846:6010B	0	17
CAWA-14-49271	WA-61491	REG	SW-846:6020	0	5
CAWA-14-49271	WA-61491	REG	SW-846:7471A	0	1
CAWA-14-49271	WA-61491	REG	SW-846:8082	0	7
CAWA-14-49271	WA-61491	REG	SW-846:8321A_MOD	0	20
CAWA-14-49297	WA-61489	REG	SW-846:6010B	0	17
CAWA-14-49297	WA-61489	REG	SW-846:6020	0	5
CAWA-14-49297	WA-61489	REG	SW-846:7471A	0	1
CAWA-14-49297	WA-61489	REG	SW-846:8321A_MOD	0	20
CAWA-14-49298	WA-61490	REG	SW-846:6010B	0	17
CAWA-14-49298	WA-61490	REG	SW-846:6020	0	5
CAWA-14-49298	WA-61490	REG	SW-846:7471A	0	1

DATA VALIDATION REPORT

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49298	WA-61490	REG	SW-846:8321A_MOD	0	20

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

April 08, 2014

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL ER
Work Order: 344334
SDG: 2014-2961

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on March 11, 2014, and analyzed for Explosives by LCMSMS, GC Semivolatile PCB and Metals. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Hope Taylor for
Valerie Davis
Project Manager

Purchase Order: 63641-10
Chain of Custody: 2014-2961
Enclosures

ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Work Order #: 344334
SDG: 2014-2961

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Case Narrative

Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Workorder #: 344334
SDG # : 2014-2961

April 08, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on March 11, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
344334001	CACV-14-49260
344334002	CACV-14-49263
344334003	CACV-14-49261
344334004	CACV-14-49262
344334005	CAWA-14-49297
344334006	CACV-14-49264
344334007	CAWA-14-49298
344334008	CAWA-14-49271

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, GC Semivolatile PCB and Metals.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.

Hope Taylor for
Valerie Davis
Project Manager

List of current GEL Certifications as of 08 April 2014

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122014−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−14−9
Utah NELAP	SC000122013−11
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Chain of Custody and Supporting Documentation

General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

34434

ADEP

COC/Lab Request #: 2014-2961

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Metals(W)	NMED Explosives list	Tal Metals
CACV-14-49260	Mar 7 2014	10:10	SED	1			1
CACV-14-49263	Mar 7 2014	10:10	SED	1			1
CACV-14-49261	Mar 7 2014	10:30	SED	1			1
CACV-14-49262	Mar 7 2014	10:40	SED	1			1
CAWA-14-49297	Mar 7 2014	11:10	SED			1	1
CACV-14-49264	Mar 7 2014	12:20	W		1		
CAWA-14-49298	Mar 7 2014	11:50	SED			1	1
CAWA-14-49271	Mar 7 2014	11:25	SED	1			1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Montoya	3/10/14 3:00		H. Taylor	3/11/14 0900
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	**SDG/AR/COC/Work Order:** 2014-2961
Received By: H. Taylor	**Date Received:** 031114

Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓	✓		Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓	✓		Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 4-6 16
2a	Daily check performed and passed on IR temperature gun?	✓	✓		Temperature Device Serial #: 130462961 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓	✓		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	✓	✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓	✓		Sample ID's affected:
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: *see continuation
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 5908 1776 7616-4 5908 1776 7605-5 7671-4 7627-6 7590-4 7649-6 7682-5 7579-5 7650-5 7580-6 7638-5 7568-16 7557-16

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HT Date 031114 Page 1 of 2

GEL Laboratories LLC **SAMPLE RECEIPT & REVIEW CONTINUATION FORM**

Client: LANL Received By: H. Taylor Date Received: 031114 SDG/AR/COC/Work Order: 2014-2960

RN 2014-2957
*CAWA-14-54733
received 2 containers for HEXP, chain indicates 3
* CAWA-14-54711
received 1 container for 8011, chain indicates 2
received 2 containers for 8260, chain indicates 4
* CAWA-14-54745
received 2 containers for HEXP, chain indicates 3
received 1 container for 8011, chain indicates 2
received 2 containers for 8260, chain indicates 4.

RN 2014-2958
*CAPA-14-54776
received 2 containers for HEXP, chain indicates 3
* CAPA-14-54774
received 1 container for 8011, chain indicates 2
received 2 containers for 8260, chain indicates 4

RN 2014-2959
*CAWA-14-54701
received 1 container for PCB, chain indicates 3
received 2 containers for SVOA, chain indicates 4
* CAWA-14-54704
received 1 container for HEXP, chain indicates 3
* CAWA-14-54719
received 1 container each for 8011 and 8260, chain indicates 2 each

RN 2014-2960 * CAWA-14-54782 received 1 container for HEXP and SVOA
* CAWA-14-54780 and 54781 received 1 container each for 8011 and 8260

PM (or PMA) review: Initials HH Date 031114 Page 2 of 2

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 45.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

4

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWHO

FedEx Express

E

2 of 2

MPS# 0263 5908 1776 7616

Mstr# 5908 1776 7605

0201

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 50.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

4

CHARLESTON SC 29407
(843) 556-8171
REF: WE991316W200

FedEx Express

E

1 of 2

TRK# 0201 5908 1776 7671

MASTER

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 50.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

4

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWHO

FedEx Express

2 of 2
MPS# 0263 5908 1776 7590
Mstr# 5908 1776 7580
0201

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 36.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

5

CHARLESTON SC 29407
(843) 556-8171
REF: WE991316W200

FedEx Express

2 of 2
MPS# 0263 5908 1776 7682
Mstr# 5908 1776 7671
0201

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 51.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

5

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWJO

FedEx Express

TRK# 0201 5908 1776 7650

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

5

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWJO

FedEx Express

2 of 3

MPS# 0263 5908 1776 7638

Mstr# 5908 1776 7627 0201

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWH0

5

FedEx Express

1 of 2

TRK# 0201 5908 1776 7605

MASTER

XX CHSA

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 48.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWJ0

6

FedEx Express

1 of 3

TRK# 0201 5908 1776 7627

MASTER

XX CHSA

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 46.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWJ0

6

FedEx Express

E

3 of 3

MPS# 5908 1776 7649
0263

Mstr# 5908 1776 7627

0201

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RITZ 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

5

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWHO

FedEx Express

3 of 3
MPS# 0263 5908 1776 7579
Mstr# 5908 1776 7557 0201

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

6

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWHO

FedEx Express

1 of 2
TRK# 0201 5908 1776 7580
MASTER

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 38.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

16

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWHO

FedEx Express

2 of 3
MPS# 0263 5908 1776 7568
Mstr# 5908 1776 7557 0201

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

29407
SC-US CHS

XX CHSA

Part # 156146-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 54.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

16

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWHO

FedEx Express

1 of 3
TRK# 0201 5908 1776 7557
MASTER

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

29407
SC-US CHS

XX CHSA

557
3.11

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Explosives by LCMSMS Analysis

Case Narrative

LC-MS/MS Case Narrative
ARS International, LLC (ARSL)
SDG 2014-2961

Method/Analysis Information

Procedure:	**Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS) by SW-846 Method 8321 Modified (8321M)**
Analytical Method:	SW846 8321A Modified
Prep Method:	SW846 8330 PREP
Analytical Batch Number:	1372041
Prep Batch Number:	1372040

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8321A Modified:

Sample ID	Client ID
344334001	CACV-14-49260
344334002	CACV-14-49263
344334003	CACV-14-49261
344334004	CACV-14-49262
344334005	CAWA-14-49297
344334007	CAWA-14-49298
344334008	CAWA-14-49271
1203049038	Method Blank (MB)
1203049039	Laboratory Control Sample (LCS)
1203049040	344334001(CACV-14-49260) Matrix Spike (MS)
1203049041	344334001(CACV-14-49260) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP).

The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 17.

Primary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards did not meet acceptance criteria of 80-120% for this analyte analysis. Calibration verification standard EXP0321021 recovered PETN at 77.7%. The data are Q qualified and are reported as stated in the SOP.

All other associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 344334001 (CACV-14-49260) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
A final internal standard concentration of 100ug/L is employed in order to meet the minimum response factor requirement of 0.01 per EPA Method 8000C for the analysis of explosives on the API 4000.

The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Secondary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 344334001 (CACV-14-49260) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
The internal standard was not added to the Secondary analyte extracts.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents.

A data exception report (DER) was not generated for this SDG.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Additional Comments
Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Primary analyte analysis. It is coupled with a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for the Primary analyte analysis.

The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package.

Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the Primary Nitroaromatic and Nitramine analytes is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

The detection of the Secondary analytes is accomplished through analysis on the following reversed phase column:

YMC: J'sphere ODS-H80, 150 x 4.6mm I.D.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-2961 GEL Work Order: 344334

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Michael A. Penny Jr. **Name: Michael Penny**

Date: 07 APR 2014 **Title: Group Leader**

Sample Data Summary

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334001

Sample Amount 2.02 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321026.wiff

Date Analyzed: 22-MAR-14 05:49

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	495	U	149	495
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	495	U	149	495
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	495	U	149	495
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	495	U	149	495
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	495	U	149	495
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	495	U	149	495
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	495	U	149	495
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	495	U	149	495
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	495	U	149	495
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	495	U	149	495
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	495	U	149	495
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	495	U	149	495
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	495	U	149	495
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334001

Sample Amount 2.02 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	495	U	149	495
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	990	QU	248	990
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334001

Sample Amount 2.02 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020016.wiff

Date Analyzed: 02-APR-14 17:38

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	990	U	297	990
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	990	U	297	990
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	990	U	297	990
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1980	U	653	1980
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1980	U	495	1980
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49263

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334002

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321029.wiff

Date Analyzed: 22-MAR-14 07:34

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49263

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334002

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	QU	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49263

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334002

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020019.wiff

Date Analyzed: 02-APR-14 18:28

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49261

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334003

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321030.wiff

Date Analyzed: 22-MAR-14 08:09

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
2691-41-0	HMX	214	J	150	500
2691-41-0	*HMX*				
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49261

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334003

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	QU	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49261

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334003

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020020.wiff

Date Analyzed: 02-APR-14 18:45

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
3058-38-6	TATB	1400		300	1000
3058-38-6	*TATB*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49262

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334004

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321031.wiff

Date Analyzed: 22-MAR-14 08:44

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49262

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334004

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	QU	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49262

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334004

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020021.wiff

Date Analyzed: 02-APR-14 19:02

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49297

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334005

Sample Amount 2.04 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321032.wiff

Date Analyzed: 22-MAR-14 09:19

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	490	U	147	490
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	490	U	147	490
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	490	U	147	490
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	490	U	147	490
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	490	U	147	490
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	490	U	147	490
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	490	U	147	490
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	490	U	147	490
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	490	U	147	490
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	490	U	147	490
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	490	U	147	490
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	490	U	147	490
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	490	U	147	490
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49297

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334005

Sample Amount 2.04 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	490	U	147	490
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	980	QU	245	980
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49297

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334005

Sample Amount 2.04 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020022.wiff

Date Analyzed: 02-APR-14 19:18

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	980	U	294	980
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	980	U	294	980
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	980	U	294	980
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1960	U	647	1960
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1960	U	490	1960
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49298

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334007

Sample Amount 2.04 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321037.wiff

Date Analyzed: 22-MAR-14 12:14

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	490	U	147	490
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	490	U	147	490
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	490	U	147	490
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	490	U	147	490
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	490	U	147	490
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	490	U	147	490
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	490	U	147	490
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	490	U	147	490
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	490	U	147	490
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	490	U	147	490
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	490	U	147	490
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	490	U	147	490
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	490	U	147	490
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49298

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334007

Sample Amount 2.04 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	490	U	147	490
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	980	U	245	980
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49298

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334007

Sample Amount 2.04 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020023.wiff

Date Analyzed: 02-APR-14 19:35

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	980	U	294	980
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	980	U	294	980
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	980	U	294	980
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1960	U	647	1960
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1960	U	490	1960
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49271

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334008

Sample Amount 2.03 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321038.wiff

Date Analyzed: 22-MAR-14 12:49

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
2691-41-0	HMX	214	J	148	493
2691-41-0	*HMX*				
118-96-7	2,4,6-Trinitrotoluene	493	U	148	493
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	493	U	148	493
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	493	U	148	493
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	493	U	148	493
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	493	U	148	493
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	493	U	148	493
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	493	U	148	493
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	493	U	148	493
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	493	U	148	493
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	493	U	148	493
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	493	U	148	493
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	493	U	148	493
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49271

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334008

Sample Amount 2.03 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	493	U	148	493
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	985	U	246	985
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49271

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 344334008

Sample Amount 2.03 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020027.wiff

Date Analyzed: 02-APR-14 20:42

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
618-87-1	3,5-Dinitroaniline	985	U	296	985
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	985	U	296	985
78-30-8	*tris(o-cresyl) phosphate*				
3058-38-6	TATB	1670		296	985
3058-38-6	*TATB*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1970	U	650	1970
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1970	U	493	1970
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC **GEL Job No (SDG):** 2014-2961

Lab Code: GEL **HPLC Column:** Ultracarb Phenomenex 5u ODS (20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
344334001	CACV-14-49260	94	62 - 121	
344334002	CACV-14-49263	91.6	62 - 121	
344334003	CACV-14-49261	98.8	62 - 121	
344334004	CACV-14-49262	99.2	62 - 121	
344334005	CAWA-14-49297	94	62 - 121	
344334007	CAWA-14-49298	102	62 - 121	
344334008	CAWA-14-49271	101	62 - 121	
1203049038	MB for batch 1372040	100	62 - 121	
1203049039	LCS for batch 1372040	89.2	62 - 121	
1203049040	CACV-14-49260MS	96.4	62 - 121	
1203049041	CACV-14-49260MSD	90	62 - 121	

DNT = 3,4-Dinitrotoluene

Lab Code: GEL **HPLC Column:** YMC J'sphere ODS-H80

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
344334001	CACV-14-49260	108	62 - 121	
344334002	CACV-14-49263	111	62 - 121	
344334003	CACV-14-49261	108	62 - 121	
344334004	CACV-14-49262	110	62 - 121	
344334005	CAWA-14-49297	109	62 - 121	
344334007	CAWA-14-49298	108	62 - 121	
344334008	CAWA-14-49271	112	62 - 121	
1203049038	MB for batch 1372040	96	62 - 121	
1203049039	LCS for batch 1372040	101	62 - 121	
1203049040	CACV-14-49260MS	112	62 - 121	
1203049041	CACV-14-49260MSD	111	62 - 121	

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Extract Batch Code: 1372040

Date Extracted: 17-MAR-14

GEL LCS ID: 1203049039

GEL LCSDUP ID:

Analysis Date/Time: 22-MAR-14 05:14

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
4-Amino-2,6-dinitrotoluene	5000	5060	101					62 - 135
HMX	5000	4340	86.8					58 - 123
Nitrobenzene	5000	4470	89.4					58 - 130
PETN	5000	3320	66.4					61 - 125
RDX	5000	4390	87.8					58 - 136
Tetryl	5000	1870	37.4					36 - 131
m-Dinitrobenzene	5000	4670	93.4					64 - 129
m-Nitrotoluene	5000	4470	89.4					60 - 126
2-Amino-4,6-dinitrotoluene	5000	4190	83.8					67 - 126
2,6-Dinitrotoluene	5000	4510	90.2					65 - 119
2,4-Dinitrotoluene	5000	4250	85					69 - 122
2,4,6-Trinitrotoluene	5000	4070	81.4					67 - 126
1,3,5-Trinitrobenzene	5000	4460	89.2					63 - 128
o-Nitrotoluene	5000	4150	83					60 - 121
p-Nitrotoluene	5000	4120	82.4					65 - 119

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Extract Batch Code: 1372040

Date Extracted: 17-MAR-14

GEL LCS ID: 1203049039

GEL LCSDUP ID:

Analysis Date/Time: 02-APR-14 17:21

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4-Diamino-6-nitrotoluene	5000	3840	76.8					65 - 116
2,6-Diamino-4-nitrotoluene	5000	4150	83					65 - 127
3,5-Dinitroaniline	5000	4950	99					61 - 131
TATB	10000	6210	62.1					36 - 156
tris(o-cresyl) phosphate	5000	5040	101					70 - 120

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CACV-14-49260

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Extract Batch Code: 1372040

Date Extracted: 17-MAR-14

GEL Spike ID: 1203049040

GEL SpikeDup ID: 1203049041

Analysis Date/Time: 22-MAR-14 06:24

MSD Analysis Date/Time: 22-MAR-14 06:59

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
1,3,5-Trinitrobenzene	4878.049	0	4710	96.6	4770	95.8	1.14	30	63 - 121
2,4,6-Trinitrotoluene	4878.049	7.93	4480	91.6	4480	89.8	.0098	30	60 - 129
2,4-Dinitrotoluene	4878.049	0	4530	92.8	4330	87	4.48	30	69 - 124
2,6-Dinitrotoluene	4878.049	0	4680	96	4850	97.4	3.42	30	65 - 119
2-Amino-4,6-dinitrotoluene	4878.049	0	4320	88.6	4630	93	6.82	30	67 - 133
4-Amino-2,6-dinitrotoluene	4878.049	0	4850	99.4	4790	96.2	1.3	30	62 - 135
HMX	4878.049	61.8	4440	89.7	4500	89.2	1.31	30	54 - 127
Nitrobenzene	4878.049	0	4570	93.6	4600	92.4	.68	30	58 - 120
PETN	4878.049	0	3930	80.6	3460	69.6	12.7	30	58 - 125
RDX	4878.049	27.3	4450	90.6	4580	91.5	2.84	30	45 - 135
Tetryl	4878.049	0	4180	85.6	4550	91.4	8.52	30	36 - 130
m-Dinitrobenzene	4878.049	0	4690	96.2	4810	96.6	2.39	30	64 - 129
m-Nitrotoluene	4878.049	0	4830	99	4530	91	6.45	30	59 - 126
o-Nitrotoluene	4878.049	0	4420	90.6	4150	83.4	6.31	30	60 - 116
p-Nitrotoluene	4878.049	0	4550	93.2	4680	94	2.83	30	61 - 120

#Column to be used to flag recovery and RPD values with an asterisk

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CACV-14-49260

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Extract Batch Code: 1372040

Date Extracted: 17-MAR-14

GEL Spike ID: 1203049040

GEL SpikeDup ID: 1203049041

Analysis Date/Time: 02-APR-14 17:55

MSD Analysis Date/Time: 02-APR-14 18:11

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec	#	MSD Conc	MSD Rec	#	RPD	#	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	4878.049	0	3830	78.6		4160	83.6		8.13		30	61 - 133
2,6-Diamino-4-nitrotoluene	4878.049	0	4310	88.4		4490	90.2		3.99		30	65 - 119
3,5-Dinitroaniline	4878.049	0	4900	100		4980	100		1.57		30	61 - 131
TATB	9756.098	0	8560	87.7		10100	102		17		30	20 - 164
tris(o-cresyl) phosphate	4878.049	25	4650	94.9		4780	95.5		2.6		30	70 - 123

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1372040

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049038

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321024.wiff

Date Analyzed: 22-MAR-14 04:39

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1372040

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049038

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	QU	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1372040

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049038

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020014.wiff

Date Analyzed: 02-APR-14 17:05

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1372040

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049039

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321025.wiff

Date Analyzed: 22-MAR-14 05:14

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	1870		150	500
479-45-8	*Tetryl*				
78-11-5	PETN	3320	Q	250	1000
78-11-5	*PETN*				
118-96-7	2,4,6-Trinitrotoluene	4070		150	500
118-96-7	*2,4,6-Trinitrotoluene*				
99-99-0	p-Nitrotoluene	4120		150	500
99-99-0	*p-Nitrotoluene*				
88-72-2	o-Nitrotoluene	4150		150	500
88-72-2	*o-Nitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4190		150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4250		150	500
121-14-2	*2,4-Dinitrotoluene*				
2691-41-0	HMX	4340		150	500
2691-41-0	*HMX*				
121-82-4	RDX	4390		150	500
121-82-4	*RDX*				
99-35-4	1,3,5-Trinitrobenzene	4460		150	500
99-35-4	*1,3,5-Trinitrobenzene*				
98-95-3	Nitrobenzene	4470		150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	4470		150	500
99-08-1	*m-Nitrotoluene*				
606-20-2	2,6-Dinitrotoluene	4510		150	500
606-20-2	*2,6-Dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1372040

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049039

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-65-0	m-Dinitrobenzene	4670		150	500
99-65-0	*m-Dinitrobenzene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5060		150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1372040

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049039

Sample Amount 2 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020015.wiff

Date Analyzed: 02-APR-14 17:21

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
6629-29-4	2,4-Diamino-6-nitrotoluene	3840		500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4150		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
618-87-1	3,5-Dinitroaniline	4950		300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	5040		300	1000
78-30-8	*tris(o-cresyl) phosphate*				
3058-38-6	TATB	6210		300	1000
3058-38-6	*TATB*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260(344334001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049040

Sample Amount 2.05 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0321027.wiff

Date Analyzed: 22-MAR-14 06:24

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	3930	Q	244	976
78-11-5	*PETN*				
479-45-8	Tetryl	4180		146	488
479-45-8	*Tetryl*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4320		146	488
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
88-72-2	o-Nitrotoluene	4420		146	488
88-72-2	*o-Nitrotoluene*				
2691-41-0	HMX	4440		146	488
2691-41-0	*HMX*				
121-82-4	RDX	4450		146	488
121-82-4	*RDX*				
118-96-7	2,4,6-Trinitrotoluene	4480		146	488
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4530		146	488
121-14-2	*2,4-Dinitrotoluene*				
99-99-0	p-Nitrotoluene	4550		146	488
99-99-0	*p-Nitrotoluene*				
98-95-3	Nitrobenzene	4570		146	488
98-95-3	*Nitrobenzene*				
606-20-2	2,6-Dinitrotoluene	4680		146	488
606-20-2	*2,6-Dinitrotoluene*				
99-65-0	m-Dinitrobenzene	4690		146	488
99-65-0	*m-Dinitrobenzene*				
99-35-4	1,3,5-Trinitrobenzene	4710		146	488
99-35-4	*1,3,5-Trinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260(344334001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049040

Sample Amount 2.05 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-08-1	m-Nitrotoluene	4830		146	488
99-08-1	*m-Nitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	4850		146	488
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260(344334001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049040

Sample Amount 2.05 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020017.wiff

Date Analyzed: 02-APR-14 17:55

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
6629-29-4	2,4-Diamino-6-nitrotoluene	3830		488	1950
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4310		644	1950
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	4650		293	976
78-30-8	*tris(o-cresyl) phosphate*				
618-87-1	3,5-Dinitroaniline	4900		293	976
618-87-1	*3,5-Dinitroaniline*				
3058-38-6	TATB	8560		293	976
3058-38-6	*TATB*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260(344334001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049041

Sample Amount 2.01 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0321028.wiff

Date Analyzed: 22-MAR-14 06:59

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	3460	Q	249	995
78-11-5	*PETN*				
88-72-2	o-Nitrotoluene	4150		149	498
88-72-2	*o-Nitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4330		149	498
121-14-2	*2,4-Dinitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4480		149	498
118-96-7	*2,4,6-Trinitrotoluene*				
2691-41-0	HMX	4500		149	498
2691-41-0	*HMX*				
99-08-1	m-Nitrotoluene	4530		149	498
99-08-1	*m-Nitrotoluene*				
479-45-8	Tetryl	4550		149	498
479-45-8	*Tetryl*				
121-82-4	RDX	4580		149	498
121-82-4	*RDX*				
98-95-3	Nitrobenzene	4600		149	498
98-95-3	*Nitrobenzene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4630		149	498
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
99-99-0	p-Nitrotoluene	4680		149	498
99-99-0	*p-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4770		149	498
99-35-4	*1,3,5-Trinitrobenzene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	4790		149	498
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260(344334001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049041

Sample Amount 2.01 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-65-0	m-Dinitrobenzene	4810		149	498
99-65-0	*m-Dinitrobenzene*				
606-20-2	2,6-Dinitrotoluene	4850		149	498
606-20-2	*2,6-Dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49260(344334001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-2961

Matrix: SOIL

GEL Sample ID: 1203049041

Sample Amount 2.01 g

Date Received: 11-MAR-14

Moisture:

Extraction Batch ID: 1372040

Extraction Type Sonication

Date Extracted: 17-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04020018.wiff

Date Analyzed: 02-APR-14 18:11

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
6629-29-4	2,4-Diamino-6-nitrotoluene	4160		498	1990
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4490		657	1990
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	4780		299	995
78-30-8	*tris(o-cresyl) phosphate*				
618-87-1	3,5-Dinitroaniline	4980		299	995
618-87-1	*3,5-Dinitroaniline*				
3058-38-6	TATB	10100		299	995
3058-38-6	*TATB*				

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 21-MAR-14 15:15

GEL Data File: EXP0321001.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 21-MAR-14 15:50

GEL Data File: EXP0321002.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 02-APR-14 13:27

GEL Data File: EXS04020001.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	3.15
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 02-APR-14 13:44

GEL Data File: EXS04020002.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 21-MAR-14 19:55

GEL Data File: EXP0321009.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 21-MAR-14 21:05

GEL Data File: EXP0321011.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 21-MAR-14 22:50

GEL Data File: EXP0321014.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 22-MAR-14 02:19

GEL Data File: EXP0321020.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 22-MAR-14 03:29

GEL Data File: EXP0321022.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 22-MAR-14 09:55

GEL Data File: EXP0321033.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 22-MAR-14 11:04

GEL Data File: EXP0321035.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 22-MAR-14 13:24

GEL Data File: EXP0321039.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK10

Analysis Date: 22-MAR-14 18:05

GEL Data File: EXP0321047.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 02-APR-14 15:58

GEL Data File: EXS04020010.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	8.63
TATB	0	0
3,5-Dinitroaniline	0	1.3
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 02-APR-14 16:31

GEL Data File: EXS04020012.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	4.78
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 02-APR-14 20:08

GEL Data File: EXS04020025.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	4.23
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 02-APR-14 20:59

GEL Data File: EXS04020028.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-2961

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 02-APR-14 23:46

GEL Data File: EXS04020038.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	5.01
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

PCB Analysis

Case Narrative

PCB Case Narrative
ARS International, LLC (ARSL)
SDG 2014-2961

Method/Analysis Information

Procedure:	**Analysis of Polychlorinated Biphenyls by ECD**
Analytical Method:	SW846 3541/8082
Prep Method:	SW846 3541
Analytical Batch Number:	1373644
Prep Batch Number:	1373626

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082:

Sample ID	Client ID
344334001	CACV-14-49260
344334002	CACV-14-49263
344334003	CACV-14-49261
344334004	CACV-14-49262
344334008	CAWA-14-49271
1203052771	Method Blank (MB)
1203052772	344589004(CAPU-14-56568) Matrix Spike (MS)
1203052773	344589004(CAPU-14-56568) Matrix Spike Duplicate (MSD)
1203052774	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 20.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standards (ICV or CCV) met the acceptance criteria. All analytes were within the established retention time windows for this method.

One of the five quantified peaks did not meet recovery acceptance criteria in Aroclor-1016 standards analyzed for this SDG; however, the average concentration of the five quantified peaks met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for the samples in this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
An ARSL sample of similar matrix in SDG 2014-2988 was selected for the matrix spike and matrix spike duplicate analysis for this batch of the samples.

Matrix Spike (MS) Recovery Statement
The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD did not meet the acceptance limits due to relatively lower spike recovery in the MS.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns. All sample extracts were cleaned using alumina. Additionally, copper was added to all sample extracts to remove sulfur.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this batch.

Miscellaneous Information

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for the samples in this SDG in this batch.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

Due to software issue, the surrogate recovery range was not indicated or possibly indicated incorrectly in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Due to rounding differences in the calculation between the forms, the data reported in Sample Summary (form 1) and Spike Recovery Report (form 3) may differ slightly from the data reported in Identification Summary (form 10).

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD9A.I_1	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 1	30m x 0.25mm, 0.25um
ECD9A.I_2	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 2	30m x 0.25mm, 0.20um

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS−LANS−MTOA6−25093−GEL)

Client SDG: 2014−2961 GEL Work Order: 344334

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

P Organics−−The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.

RA Indicates that sample is re−analyzed without re−extraction.

RE Indicates that sample is re−extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP−like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Jimin Cao **Name: Jimin Cao**

Date: 25 MAR 2014 **Title: Data Validator**

Sample Data Summary

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**S**
Lab Sample ID:	**344334001**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**5.8**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV−14−49260**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 10:47**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.04 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2314.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2314.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.53	ug/kg	1.18	3.53	1
11104−28−2	Aroclor−1221	U	3.53	ug/kg	1.18	3.53	1
11141−16−5	Aroclor−1232	U	3.53	ug/kg	1.18	3.53	1
53469−21−9	Aroclor−1242	U	3.53	ug/kg	1.18	3.53	1
12672−29−6	Aroclor−1248	U	3.53	ug/kg	1.18	3.53	1
11097−69−1	Aroclor−1254		5.94	ug/kg	1.18	3.53	2
11096−82−5	Aroclor−1260		11.4	ug/kg	1.18	3.53	2

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**S**
Lab Sample ID:	**344334002**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV−14−49263**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 11:01**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.06 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2315.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2315.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.54	ug/kg	1.18	3.54	1
11104−28−2	Aroclor−1221	U	3.54	ug/kg	1.18	3.54	1
11141−16−5	Aroclor−1232	U	3.54	ug/kg	1.18	3.54	1
53469−21−9	Aroclor−1242	U	3.54	ug/kg	1.18	3.54	1
12672−29−6	Aroclor−1248	U	3.54	ug/kg	1.18	3.54	1
11097−69−1	Aroclor−1254	J	2.03	ug/kg	1.18	3.54	1
11096−82−5	Aroclor−1260	JP	2.57	ug/kg	1.18	3.54	2

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**S**
Lab Sample ID:	**344334003**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**28.7**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV−14−49261**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 11:16**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2316.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2316.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	4.67	ug/kg	1.56	4.67	1
11104−28−2	Aroclor−1221	U	4.67	ug/kg	1.56	4.67	1
11141−16−5	Aroclor−1232	U	4.67	ug/kg	1.56	4.67	1
53469−21−9	Aroclor−1242	U	4.67	ug/kg	1.56	4.67	1
12672−29−6	Aroclor−1248	U	4.67	ug/kg	1.56	4.67	1
11097−69−1	Aroclor−1254	U	4.67	ug/kg	1.56	4.67	1
11096−82−5	Aroclor−1260	J	2.77	ug/kg	1.56	4.67	2

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**S**
Lab Sample ID:	**344334004**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV−14−49262**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 11:30**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2317.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2317.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.56	ug/kg	1.19	3.56	1
11104−28−2	Aroclor−1221	U	3.56	ug/kg	1.19	3.56	1
11141−16−5	Aroclor−1232	U	3.56	ug/kg	1.19	3.56	1
53469−21−9	Aroclor−1242	U	3.56	ug/kg	1.19	3.56	1
12672−29−6	Aroclor−1248	U	3.56	ug/kg	1.19	3.56	1
11097−69−1	Aroclor−1254	J	2.30	ug/kg	1.19	3.56	2
11096−82−5	Aroclor−1260	J	2.75	ug/kg	1.19	3.56	2

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**S**
Lab Sample ID:	**344334008**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**42.6**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA−14−49271**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 11:45**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.08 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2318.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2318.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	5.79	ug/kg	1.93	5.79	1
11104−28−2	Aroclor−1221	U	5.79	ug/kg	1.93	5.79	1
11141−16−5	Aroclor−1232	U	5.79	ug/kg	1.93	5.79	1
53469−21−9	Aroclor−1242	U	5.79	ug/kg	1.93	5.79	1
12672−29−6	Aroclor−1248	U	5.79	ug/kg	1.93	5.79	1
11097−69−1	Aroclor−1254	J	2.37	ug/kg	1.93	5.79	1
11096−82−5	Aroclor−1260	J	4.30	ug/kg	1.93	5.79	2

Quality Control Summary

PCB

Surrogate Recovery Report

SDG Number: 2014−2961

Matrix Type: SOLID

Sample ID	Client ID	4CMX 1 %REC #	4CMX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #
1203052771	MB for batch 1373626	80	86	86	87
1203052774	LCS for batch 1373626	73	78	78	78
344334001	CACV−14−49260	81	80	84	88
344334002	CACV−14−49263	89	94	97	98
344334003	CACV−14−49261	81	86	92	92
344334004	CACV−14−49262	87	91	94	97
344334008	CAWA−14−49271	95	100	100	100
1203052772	CAPU−14−56568MS	74	74	76	83
1203052773	CAPU−14−56568MSD	73	71	88	94

Surrogate		Acceptance Limits
4CMX	= 4cmx	(44%−106%)
DCB	= Decachlorobiphenyl	(35%−119%)

* Recovery outside Acceptance Limits
\# Column to be used to flag recovery values
D Sample Diluted

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014−2961**	**Sample Type:**	**Matrix Spike**	
Client ID:	**CAPU−14−56568MS**	**Matrix:**	**SED**	
Lab Sample ID	**1203052772**	**%Moisture:**	**19.6**	
Instrument:	**ECD9A.I**	**Analysis Date:**	**03/23/2014 13:18**	**Dilution: 1**
Analyst:	**YS1**	**Prep Batch ID:**	**1373626**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1373644**	

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674−11−2	MS	Aroclor−1016	41.5	0.00	U	29.3	71	25−125
11096−82−5	MS	Aroclor−1260	41.5	14.7		45.6	75	28−127

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014−2961**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**CAPU−14−56568MSD**	**Matrix:**	**SED**	
Lab Sample ID	**1203052773**	**%Moisture:**	**19.6**	
Instrument:	**ECD9A.I**	**Analysis Date:**	**03/23/2014 13:33**	**Dilution: 1**
Analyst:	**YS1**	**Prep Batch ID:**	**1373626**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1373644**	

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
12674−11−2	MSD	Aroclor−1016	41.3	0.00	U	44.2	107	25−125	40 *	0−30
11096−82−5	MSD	Aroclor−1260	41.3	14.7		50.0	85	28−127	9	0−30

PCB

Quality Control Summary
Spike Recovery Report

SDG Number: **2014−2961**
Client ID: **LCS for batch 1373626**
Lab Sample ID **1203052774**
Instrument: **ECD9A.I**
Analyst: **YS1**
Inj. Vol: **1 uL**

Sample Type: **Laboratory Control Sample**
Matrix: **SOIL**
Analysis Date: **03/23/2014 10:35**
Prep Batch ID: **1373626**
Batch ID: **1373644**
Dilution: 1

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674−11−2	LCS	Aroclor−1016	33.3	0.0	22.9	69	39−120
11096−82−5	LCS	Aroclor−1260	33.3	0.0	28.1	85	50−116

Method Blank Summary

SDG Number:	**2014−2961**	**Client:**	**ARSL004**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 1373626**	**Instrument ID:**	**ECD9A.I_1** **ECD9A.I_2**	**Data File:**	**032314.S\E9c2312.D** **032314.S\E9c2312.D**
Lab Sample ID:	**1203052771**				
Column:	**RTX−CLPEST 1** **RTX−CLPEST 2**	**Prep Date:**	**03/21/2014 09:40**	**Analyzed:**	**03/23/14 10:24**

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 1373626	1203052774	032314.S\E9c2313.D 032314.S\E9c2313.D	03/23/14	1035
02 CACV−14−49260	344334001	032314.S\E9c2314.D 032314.S\E9c2314.D	03/23/14	1047
03 CACV−14−49263	344334002	032314.S\E9c2315.D 032314.S\E9c2315.D	03/23/14	1101
04 CACV−14−49261	344334003	032314.S\E9c2316.D 032314.S\E9c2316.D	03/23/14	1116
05 CACV−14−49262	344334004	032314.S\E9c2317.D 032314.S\E9c2317.D	03/23/14	1130
06 CAWA−14−49271	344334008	032314.S\E9c2318.D 032314.S\E9c2318.D	03/23/14	1145
07 CAPU−14−56568MS	1203052772	032314.S\E9c2325.D 032314.S\E9c2325.D	03/23/14	1318
08 CAPU−14−56568MSD	1203052773	032314.S\E9c2326.D 032314.S\E9c2326.D	03/23/14	1333

Identification Summary

SDG Number: **2014−2961** **Client ID:** **LCS for batch 1373626**

Lab Sample ID: **1203052774**

Data File:	**032314.S\E9c2313.D**	**Data File:**	**032314.S\E9c2313.D**
Inst:	**ECD9A.I_1**	**Inst:**	**ECD9A.I_2**
Column:	**RTX−CLPEST 1**	**Column:**	**RTX−CLPEST 2**
Analyzed:	**23−MAR−14 10:35**	**Analyzed:**	**23−MAR−14 10:35**

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
Aroclor−1016							2.68
Column 1	1	3.01	2.98 − 3.04	22.9		ug/kg	
	2	3.36	3.33 − 3.39	22.5		ug/kg	
	3	3.46	3.43 − 3.49	22.1		ug/kg	
	4	3.51	3.48 − 3.54	21.7		ug/kg	
	5	3.76	3.73 − 3.79	22.1		ug/kg	
					22.3		
Column 2	1	3.99	3.96 − 4.02	22.9		ug/kg	
	2	4	3.97 − 4.03	22.8		ug/kg	
	3	4.1	4.07 − 4.13	23.1		ug/kg	
	4	4.18	4.15 − 4.21	22.5		ug/kg	
	5	4.46	4.43 − 4.49	22.9		ug/kg	
					22.9		
Aroclor−1260							11.6
Column 1	1	4.63	4.61 − 4.67	22.4		ug/kg	
	2	5.11	5.08 − 5.14	26.8		ug/kg	
	3	5.28	5.25 − 5.31	26.1		ug/kg	
	4	5.49	5.46 − 5.52	26.2		ug/kg	
	5	5.69	5.66 − 5.72	23.7		ug/kg	
					25.1		
Column 2	1	5.38	5.35 − 5.41	23.5		ug/kg	
	2	5.52	5.49 − 5.55	25.2		ug/kg	
	3	5.64	5.61 − 5.67	26.2		ug/kg	
	4	5.85	5.82 − 5.88	33.7		ug/kg	
	5	6.23	6.2 − 6.26	32		ug/kg	
					28.1		

Identification Summary

SDG Number: **2014−2961** **Client ID:** **CACV−14−49260**

Lab Sample ID: **344334001**

Data File:	**032314.S\E9c2314.D**	**Data File:**	**032314.S\E9c2314.D**
Inst:	**ECD9A.I_1**	**Inst:**	**ECD9A.I_2**
Column:	**RTX−CLPEST 1**	**Column:**	**RTX−CLPEST 2**
Analyzed:	**23−MAR−14 10:47**	**Analyzed:**	**23−MAR−14 10:47**

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
Aroclor−1254							13.9
Column 1	1	4.04	4.01 − 4.07	5.54		ug/kg	
	2	4.22	4.19 − 4.25	5.24		ug/kg	
	3	4.51	4.48 − 4.54	6.3		ug/kg	
	4	4.7	4.67 − 4.73	4.13		ug/kg	
	5	4.89	4.87 − 4.93	4.62		ug/kg	
					5.16		
Column 2	1	4.91	4.87 − 4.93	10.1		ug/kg	
	2	5.16	5.13 − 5.19	4.1		ug/kg	
	3	5.24	5.21 − 5.27	5.73		ug/kg	
	4	5.4	5.37 − 5.43	3.64		ug/kg	
	5	5.66	5.63 − 5.69	6.14		ug/kg	
					5.94		
Aroclor−1260							15.8
Column 1	1	4.63	4.61 − 4.67	12.5		ug/kg	
	2	5.1	5.08 − 5.14	12.1		ug/kg	
	3	5.28	5.25 − 5.31	7.3		ug/kg	
	4	5.49	5.46 − 5.52	8.56		ug/kg	
	5	5.69	5.66 − 5.72	8.44		ug/kg	
					9.77		
Column 2	1	5.38	5.35 − 5.41	12.7		ug/kg	
	2	5.52	5.49 − 5.55	13.7		ug/kg	
	3	5.64	5.61 − 5.67	11.4		ug/kg	
	4	5.85	5.82 − 5.88	9.41		ug/kg	
	5	6.23	6.2 − 6.26	10		ug/kg	
					11.4		

Identification Summary

SDG Number: **2014−2961** **Client ID:** **CACV−14−49263**

Lab Sample ID: **344334002**

Data File:	**032314.S\E9c2315.D**	**Data File:**	**032314.S\E9c2315.D**
Inst:	**ECD9A.I_1**	**Inst:**	**ECD9A.I_2**
Column:	**RTX−CLPEST 1**	**Column:**	**RTX−CLPEST 2**
Analyzed:	**23−MAR−14 11:01**	**Analyzed:**	**23−MAR−14 11:01**

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
Aroclor−1254							14.5
Column 1	1	4.04	4.01 − 4.07	2.56		ug/kg	
	2	4.22	4.19 − 4.25	1.87		ug/kg	
	3	4.5	4.48 − 4.54	2.77		ug/kg	
	4	4.7	4.67 − 4.73	1.84		ug/kg	
	5	4.89	4.87 − 4.93	1.14		ug/kg	
					2.03		
Column 2	1	4.9	4.87 − 4.93	2.13		ug/kg	
	2	5.16	5.13 − 5.19	1.78		ug/kg	
	3	5.24	5.21 − 5.27	2.47		ug/kg	
	4	5.4	5.37 − 5.43	1.18		ug/kg	
	5	5.65	5.63 − 5.69	1.24		ug/kg	
					1.76		
Aroclor−1260							42.1
Column 1	1	4.63	4.61 − 4.67	2.68		ug/kg	
	2	5.1	5.08 − 5.14	1.61		ug/kg	
	3	5.28	5.25 − 5.31	1.22		ug/kg	
	4	5.49	5.46 − 5.52	1.24		ug/kg	
	5	5.69	5.66 − 5.72	1.62		ug/kg	
					1.67		
Column 2	1	5.38	5.35 − 5.41	3.26		ug/kg	
	2	5.52	5.49 − 5.55	2.87		ug/kg	
	3	5.64	5.61 − 5.67	3.98		ug/kg	
	4	5.84	5.82 − 5.88	1.32		ug/kg	
	5	6.23	6.2 − 6.26	1.41		ug/kg	
					2.57		

Identification Summary

SDG Number: **2014−2961** **Client ID:** **CACV−14−49261**

Lab Sample ID: **344334003**

Data File:	**032314.S\E9c2316.D**	**Data File:**	**032314.S\E9c2316.D**
Inst:	**ECD9A.I_1**	**Inst:**	**ECD9A.I_2**
Column:	**RTX−CLPEST 1**	**Column:**	**RTX−CLPEST 2**
Analyzed:	**23−MAR−14 11:16**	**Analyzed:**	**23−MAR−14 11:16**

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
Aroclor−1260							33.4
Column 1	1	4.64	4.61 − 4.67	2.49		ug/kg	
	2	5.11	5.08 − 5.14	1.92		ug/kg	
	3	5.28	5.25 − 5.31	1.67		ug/kg	
	4	5.49	5.46 − 5.52	1.75		ug/kg	
	5	5.69	5.66 − 5.72	2.05		ug/kg	
					1.97		
Column 2	1	5.38	5.35 − 5.41	2.93		ug/kg	
	2	5.52	5.49 − 5.55	2.86		ug/kg	
	3	5.64	5.61 − 5.67	3.72		ug/kg	
	4	5.85	5.82 − 5.88	2.35		ug/kg	
	5	6.23	6.2 − 6.26	1.98		ug/kg	
					2.77		

Identification Summary

SDG Number: **2014−2961** **Client ID:** **CACV−14−49262**

Lab Sample ID: **344334004**

Data File:	**032314.S\E9c2317.D**	**Data File:**	**032314.S\E9c2317.D**
Inst:	**ECD9A.I_1**	**Inst:**	**ECD9A.I_2**
Column:	**RTX−CLPEST 1**	**Column:**	**RTX−CLPEST 2**
Analyzed:	**23−MAR−14 11:30**	**Analyzed:**	**23−MAR−14 11:30**

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
Aroclor−1254							19.7
Column 1	1	4.04	4.01 − 4.07	1.82		ug/kg	
	2	4.22	4.19 − 4.25	1.82		ug/kg	
	3	4.51	4.48 − 4.54	2.08		ug/kg	
	4	4.7	4.67 − 4.73	1.5		ug/kg	
	5	4.89	4.87 − 4.93	2.23		ug/kg	
					1.89		
Column 2	1	4.9	4.87 − 4.93	2.65		ug/kg	
	2	5.16	5.13 − 5.19	2.26		ug/kg	
	3	5.24	5.21 − 5.27	2.15		ug/kg	
	4	5.4	5.37 − 5.43	1.75		ug/kg	
	5	5.65	5.63 − 5.69	2.71		ug/kg	
					2.3		
Aroclor−1260							38.5
Column 1	1	4.63	4.61 − 4.67	2.15		ug/kg	
	2	5.1	5.08 − 5.14	1.77		ug/kg	
	3	5.28	5.25 − 5.31	1.95		ug/kg	
	4	5.49	5.46 − 5.52	1.64		ug/kg	
	5	5.69	5.66 − 5.72	1.79		ug/kg	
					1.86		
Column 2	1	5.38	5.35 − 5.41	4.14		ug/kg	
	2	5.52	5.49 − 5.55	2.65		ug/kg	
	3	5.64	5.61 − 5.67	2.61		ug/kg	
	4	5.84	5.82 − 5.88	1.94		ug/kg	
	5	6.23	6.2 − 6.26	2.41		ug/kg	
					2.75		

Identification Summary

SDG Number: 2014−2961 **Client ID:** CAWA−14−49271

Lab Sample ID: 344334008

Data File:	032314.S\E9c2318.D	**Data File:**	032314.S\E9c2318.D
Inst:	ECD9A.I_1	**Inst:**	ECD9A.I_2
Column:	RTX−CLPEST 1	**Column:**	RTX−CLPEST 2
Analyzed:	23−MAR−14 11:45	**Analyzed:**	23−MAR−14 11:45

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
Aroclor−1254							17.8
Column 1	1	4.04	4.01 − 4.07	2.98		ug/kg	
	2	4.22	4.19 − 4.25	1.98		ug/kg	
	3	4.51	4.48 − 4.54	3.01		ug/kg	
	4	4.7	4.67 − 4.73	2.48		ug/kg	
	5	4.89	4.87 − 4.93	1.4		ug/kg	
					2.37		
Column 2	1	4.9	4.87 − 4.93	2.33		ug/kg	
	2	5.16	5.13 − 5.19	1.62		ug/kg	
	3	5.24	5.21 − 5.27	2.67		ug/kg	
	4	5.4	5.37 − 5.43	1.38		ug/kg	
	5	5.65	5.63 − 5.69	1.9		ug/kg	
					1.98		
Aroclor−1260							22.3
Column 1	1	4.63	4.61 − 4.67	4.95		ug/kg	
	2	5.1	5.08 − 5.14	3.4		ug/kg	
	3	5.28	5.25 − 5.31	2.68		ug/kg	
	4	5.49	5.46 − 5.52	2.91		ug/kg	
	5	5.69	5.66 − 5.72	3.24		ug/kg	
					3.44		
Column 2	1	5.38	5.35 − 5.41	5.33		ug/kg	
	2	5.52	5.49 − 5.55	4.35		ug/kg	
	3	5.64	5.61 − 5.67	5.05		ug/kg	
	4	5.85	5.82 − 5.88	3.8		ug/kg	
	5	6.23	6.2 − 6.26	2.97		ug/kg	
					4.3		

Sample Data

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**S**
Lab Sample ID:	**344334001**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**5.8**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV−14−49260**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 10:47**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.04 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2314.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2314.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.53	ug/kg	1.18	3.53	1
11104−28−2	Aroclor−1221	U	3.53	ug/kg	1.18	3.53	1
11141−16−5	Aroclor−1232	U	3.53	ug/kg	1.18	3.53	1
53469−21−9	Aroclor−1242	U	3.53	ug/kg	1.18	3.53	1
12672−29−6	Aroclor−1248	U	3.53	ug/kg	1.18	3.53	1
11097−69−1	Aroclor−1254		5.94	ug/kg	1.18	3.53	2
11096−82−5	Aroclor−1260		11.4	ug/kg	1.18	3.53	2

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2314.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 10:47 (#1); 23 Mar 2014 10:47 (#2)
Operator : YS1 InstName : ECD9
Sample : |344334001|1373644|1|SVA|1|ARSL|||
Misc : |ECD8241_1S|SOIL|CACV-14-49260|||
ALS Vial : 14 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:34 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.442	0.003	731966788	161.788	2.896	2.896	0.000	491515643	160.490
DCB	6.447	6.446	-0.001	643083913	167.381	7.323	7.322	-0.001	437993433	176.099

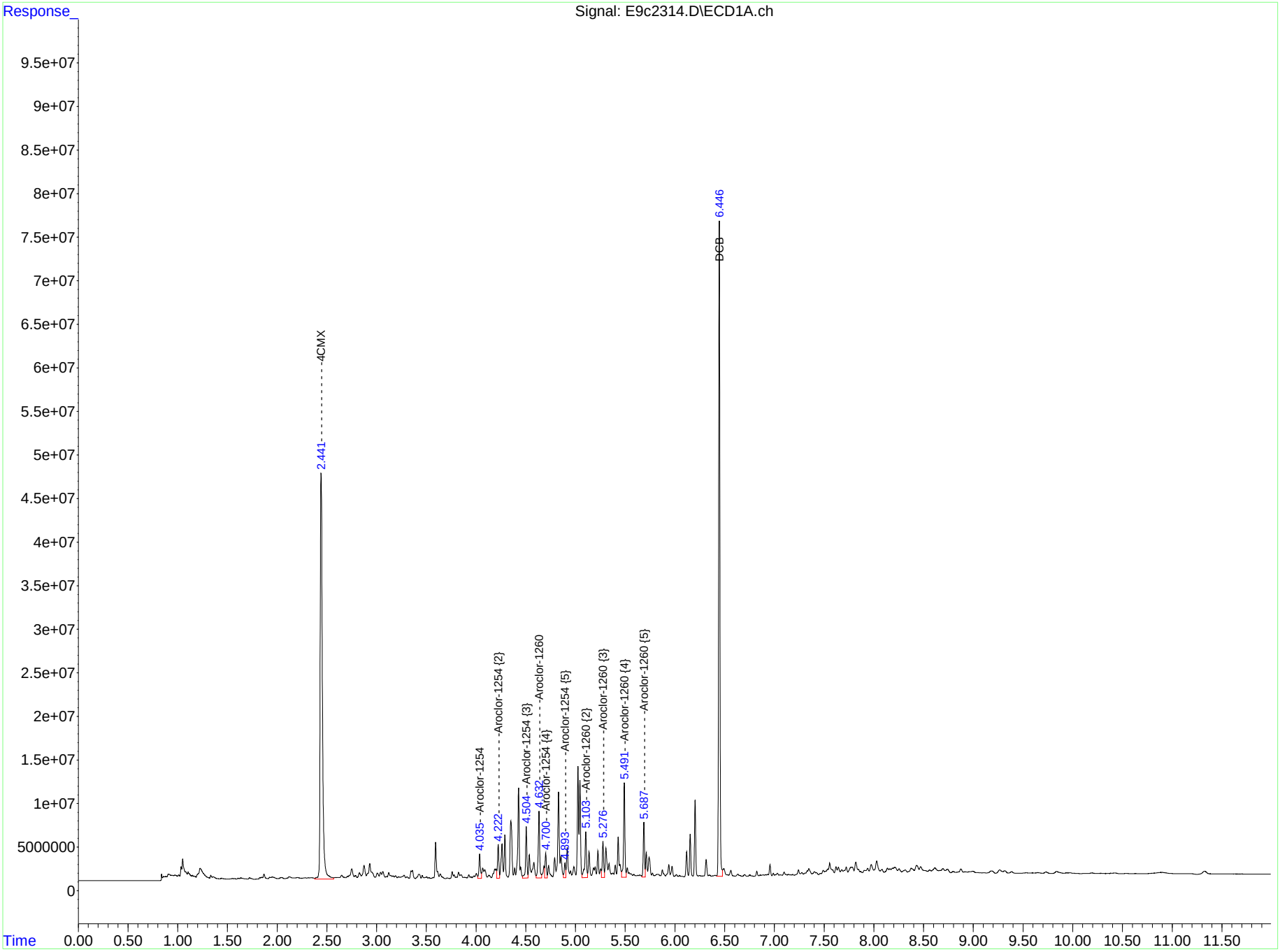
Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	80.89%	80.25%
DCB	200.000	No Limits	83.69%	88.05%

Target Compounds

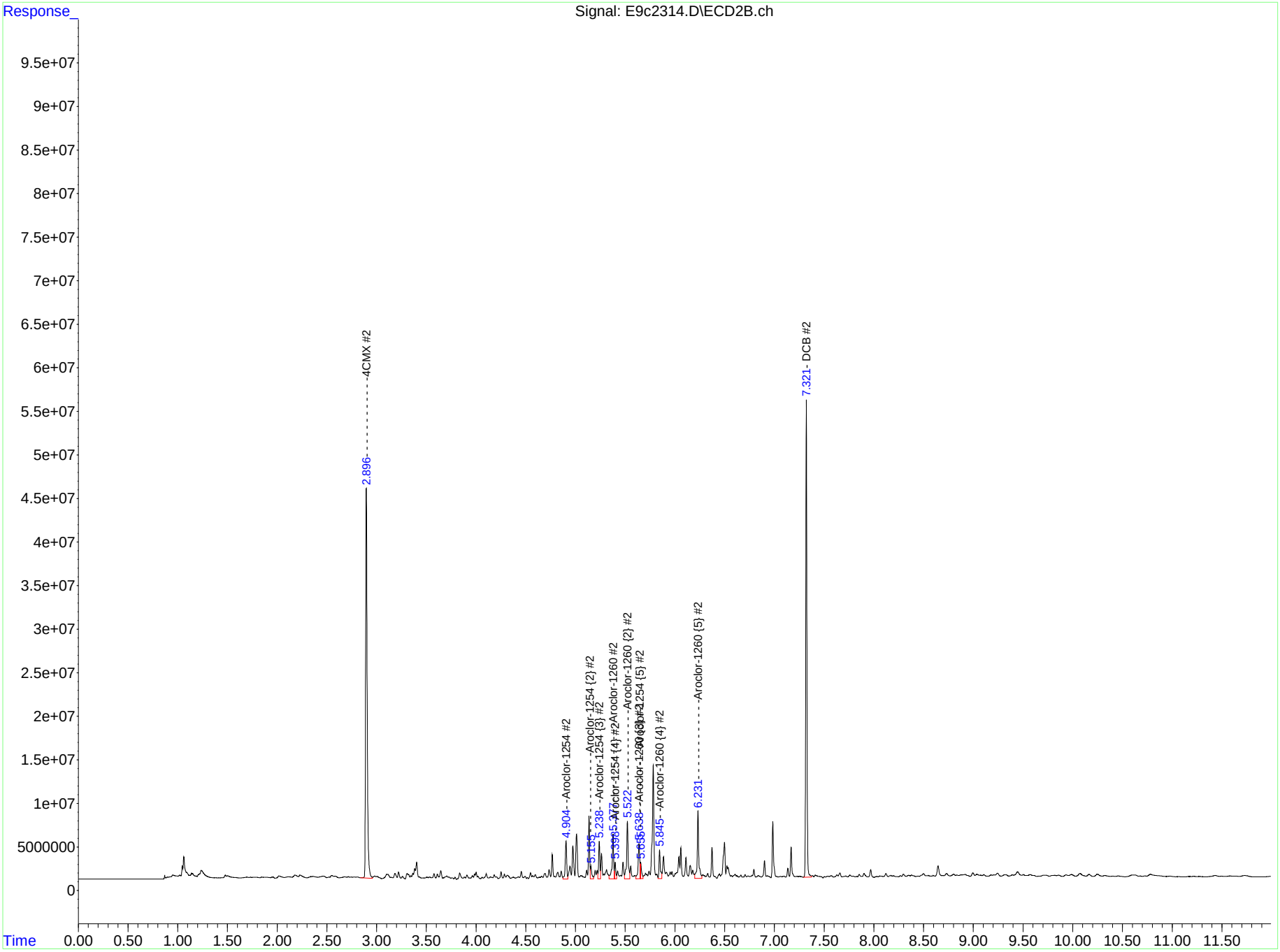
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1254	4.037	4.036	-0.001	27998363	156.809	4.902	4.905	0.003	44611294	285.068
Aroclor-1254 {2}	4.224	4.223	-0.001	36197460	148.153	5.156	5.155	-0.001	14021028	116.076
Aroclor-1254 {3}	4.507	4.505	-0.002	54124218	178.283	5.241	5.239	-0.002	35520088	162.101
Aroclor-1254 {4}	4.702	4.700	-0.002	27130450	116.756	5.400	5.398	-0.002	15968903	103.093
Aroclor-1254 {5}	4.896	4.894	-0.002	16118239	130.767	5.655	5.655	0.000	17402217	173.694
Sum Aroclor-1254				161568731	730.767				127523531	840.032
Average Aroclor-1254					146.153					168.006
Aroclor-1260	4.635	4.633	-0.002	77932157	352.471	5.379	5.378	-0.001	53074044	359.542
Aroclor-1260 {2}	5.105	5.103	-0.002	58876019	341.855	5.524	5.522	-0.002	70389002	387.502
Aroclor-1260 {3}	5.278	5.276	-0.002	38230964	206.582	5.641	5.639	-0.002	44132140	321.413
Aroclor-1260 {4}	5.492	5.491	-0.001	100187843	242.338	5.846	5.846	0.000	30752208	266.285
Aroclor-1260 {5}	5.689	5.688	-0.001	54191665	238.826	6.233	6.232	-0.001	81227127	283.669
Sum Aroclor-1260				329418647	1382.071				279574521	1618.411
Average Aroclor-1260					276.414					323.682

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2314.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2314.D



PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**S**
Lab Sample ID:	**344334002**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV−14−49263**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 11:01**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.06 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2315.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2315.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.54	ug/kg	1.18	3.54	1
11104−28−2	Aroclor−1221	U	3.54	ug/kg	1.18	3.54	1
11141−16−5	Aroclor−1232	U	3.54	ug/kg	1.18	3.54	1
53469−21−9	Aroclor−1242	U	3.54	ug/kg	1.18	3.54	1
12672−29−6	Aroclor−1248	U	3.54	ug/kg	1.18	3.54	1
11097−69−1	Aroclor−1254	J	2.03	ug/kg	1.18	3.54	1
11096−82−5	Aroclor−1260	JP	2.57	ug/kg	1.18	3.54	2

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2315.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 11:01 (#1); 23 Mar 2014 11:01 (#2)
Operator : YS1 InstName : ECD9
Sample : |344334002|1373644|1|SVA|1|ARSL|||
Misc : |ECD8241_1S|SOIL|CACV-14-49263|||
ALS Vial : 15 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:36 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.442	0.003	807449292	178.472	2.896	2.897	0.001	575901666	188.044
DCB	6.447	6.444	-0.003	746471773	194.291	7.323	7.320	-0.003	485954122	195.382

Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	89.24%	94.02%
DCB	200.000	No Limits	97.15%	97.69%

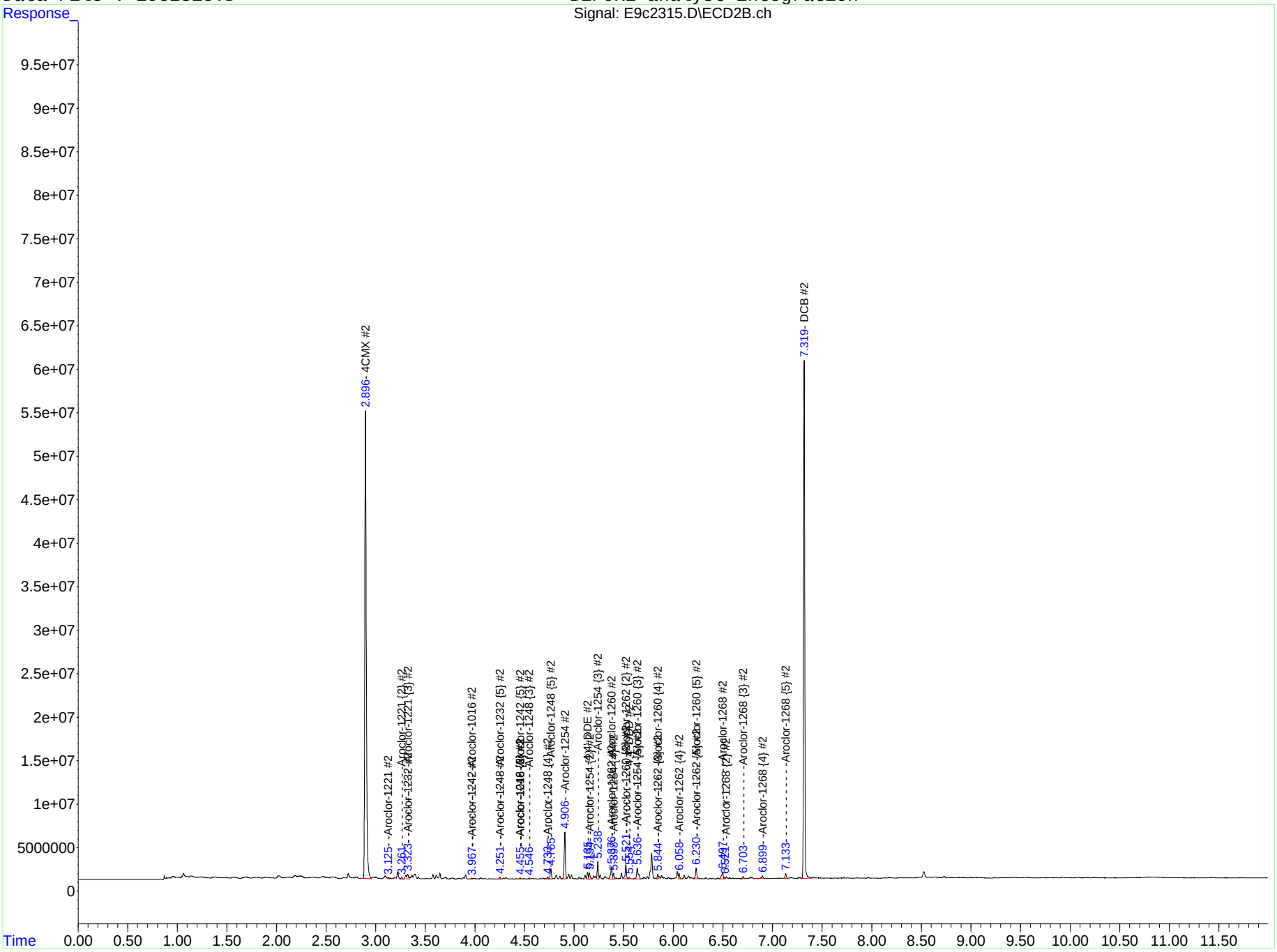
Target Compounds

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1254	4.037	4.036	-0.001	12920753	72.364	4.902	4.901	-0.001	9432893	60.277m
Aroclor-1254 {2}	4.224	4.222	-0.002	12883834	52.732	5.156	5.155	-0.001	6074221	50.286
Aroclor-1254 {3}	4.507	4.504	-0.003	23726392	78.154	5.241	5.239	-0.002	15286327	69.762
Aroclor-1254 {4}	4.702	4.700	-0.002	12061924	51.909	5.400	5.398	-0.002	5154513	33.277
Aroclor-1254 {5}	4.896	4.893	-0.003	3981412	32.301	5.655	5.653	-0.002	3510956	35.043m
Sum Aroclor-1254				65574317	287.460				39458910	248.645
Average Aroclor-1254					57.492					49.729
Aroclor-1260	4.635	4.633	-0.002	16759667	75.800	5.379	5.377	-0.002	13600937	92.138
Aroclor-1260 {2}	5.105	5.104	-0.001	7842134	45.534	5.524	5.522	-0.002	14760189	81.257
Aroclor-1260 {3}	5.278	5.276	-0.002	6359689	34.365	5.641	5.637	-0.004	15436434	112.423
Aroclor-1260 {4}	5.492	5.489	-0.003	14519353	35.120	5.846	5.844	-0.002	4295986	37.199
Aroclor-1260 {5}	5.689	5.687	-0.002	10407362	45.866	6.233	6.230	-0.003	11436754	39.940
Sum Aroclor-1260				55888205	236.685				59530300	362.957 #
Average Aroclor-1260					47.337					72.591 #

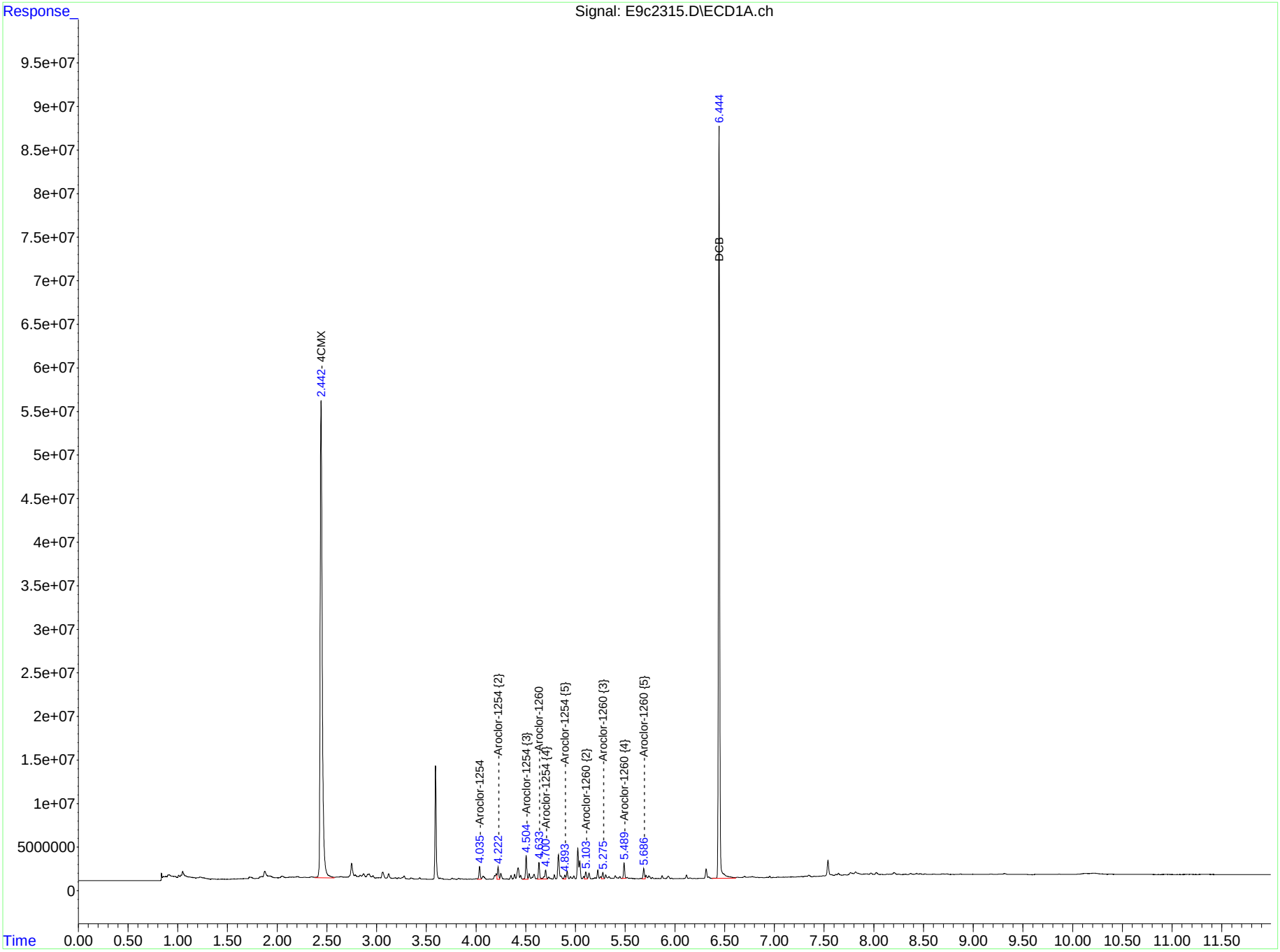
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2315.D

BEFORE analyst integration

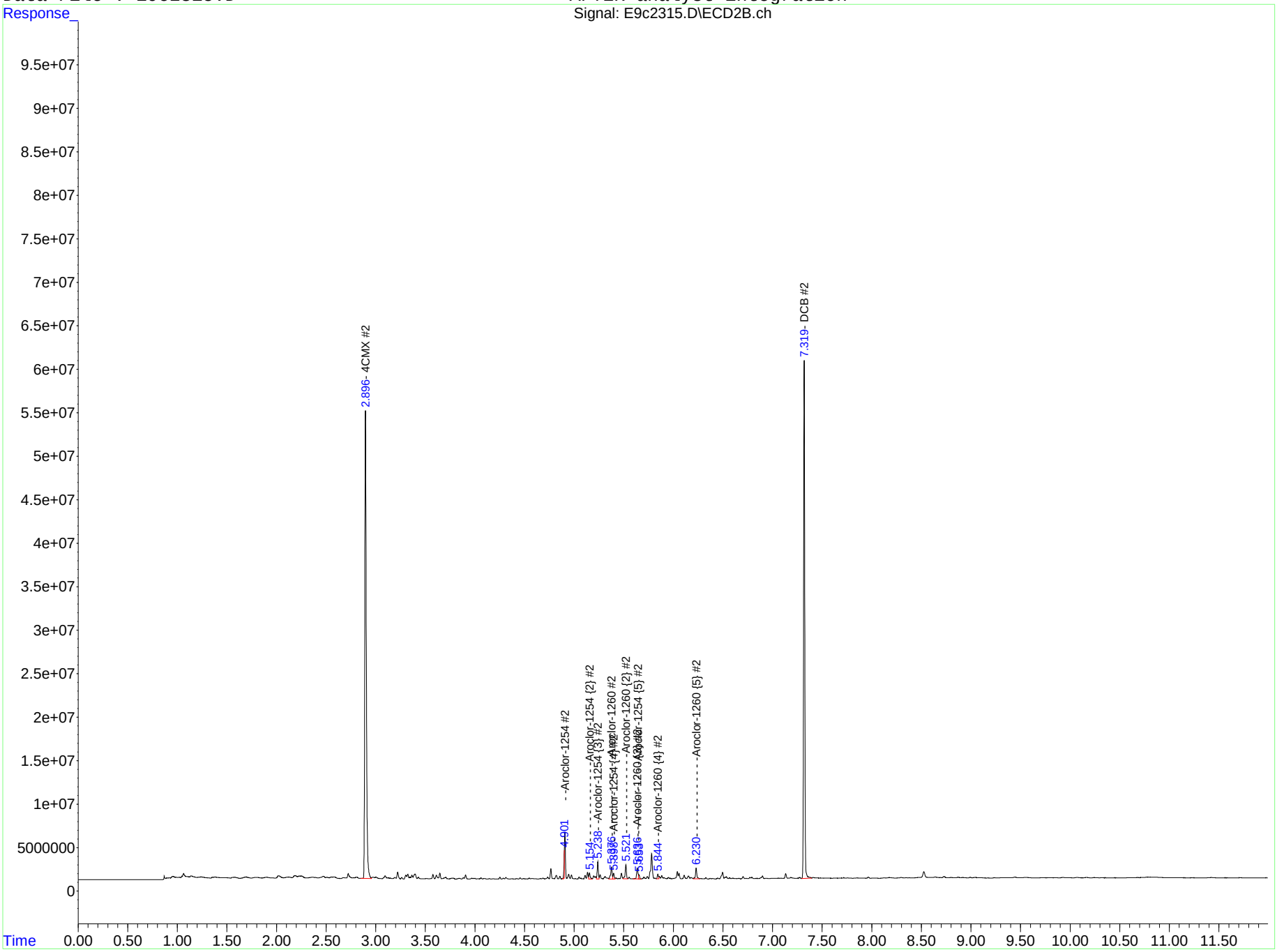


Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2315.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2315.D

AFTER analyst integration



PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**S**
Lab Sample ID:	**344334003**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**28.7**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV−14−49261**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 11:16**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2316.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2316.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	4.67	ug/kg	1.56	4.67	1
11104−28−2	Aroclor−1221	U	4.67	ug/kg	1.56	4.67	1
11141−16−5	Aroclor−1232	U	4.67	ug/kg	1.56	4.67	1
53469−21−9	Aroclor−1242	U	4.67	ug/kg	1.56	4.67	1
12672−29−6	Aroclor−1248	U	4.67	ug/kg	1.56	4.67	1
11097−69−1	Aroclor−1254	U	4.67	ug/kg	1.56	4.67	1
11096−82−5	Aroclor−1260	J	2.77	ug/kg	1.56	4.67	2

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2316.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 11:16 (#1); 23 Mar 2014 11:16 (#2)
Operator : YS1 InstName : ECD9
Sample : |344334003|1373644|1|SVA|1|ARSL|||
Misc : |ECD8241_1S|SOIL|CACV-14-49261|||
ALS Vial : 16 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:38 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.444	0.005	732327491	161.868	2.896	2.897	0.001	526236742	171.827
DCB	6.447	6.446	-0.001	704703509	183.420	7.323	7.320	-0.003	459802786	184.867

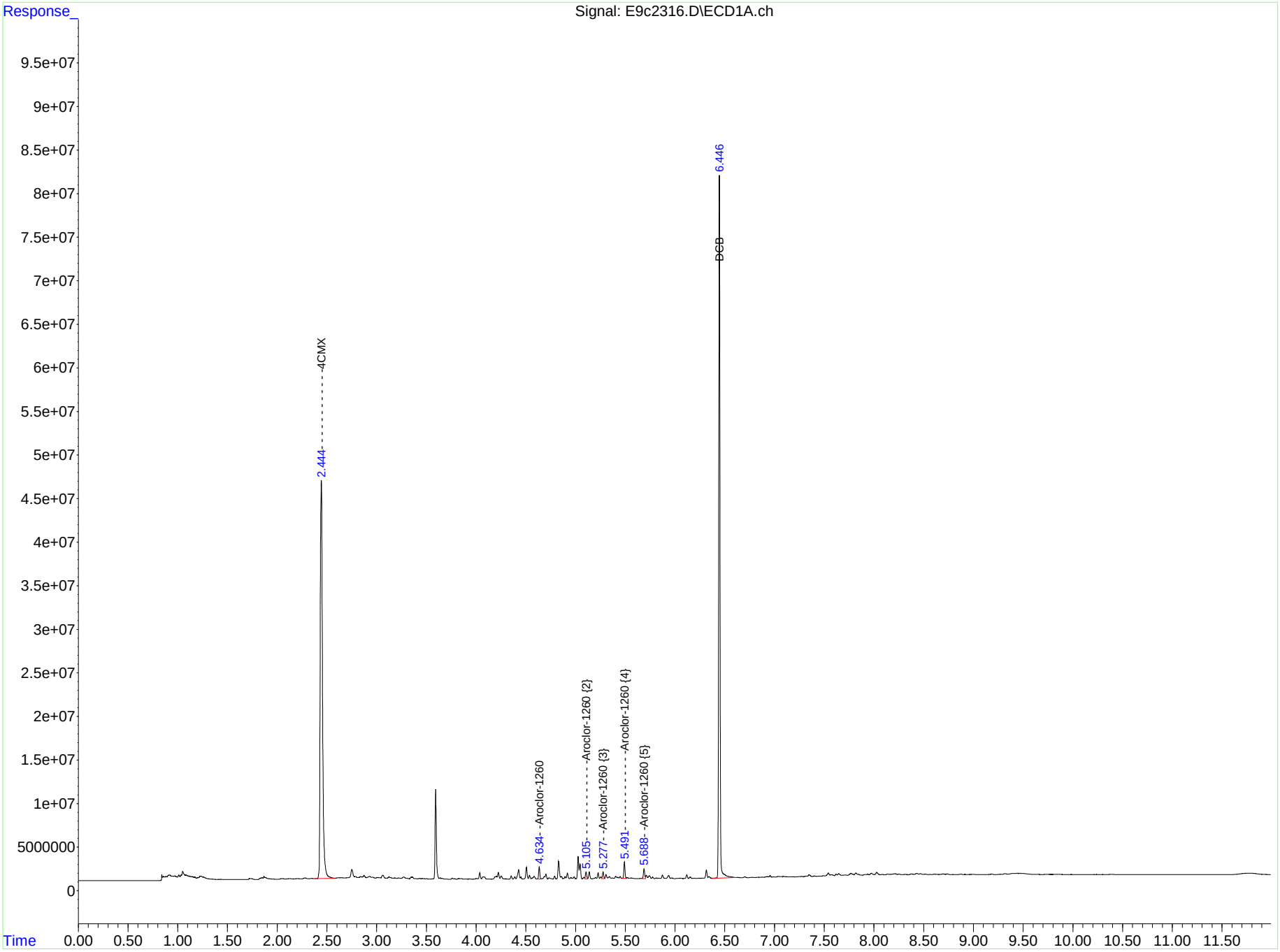
Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	80.93%	85.91%
DCB	200.000	No Limits	91.71%	92.43%

Target Compounds

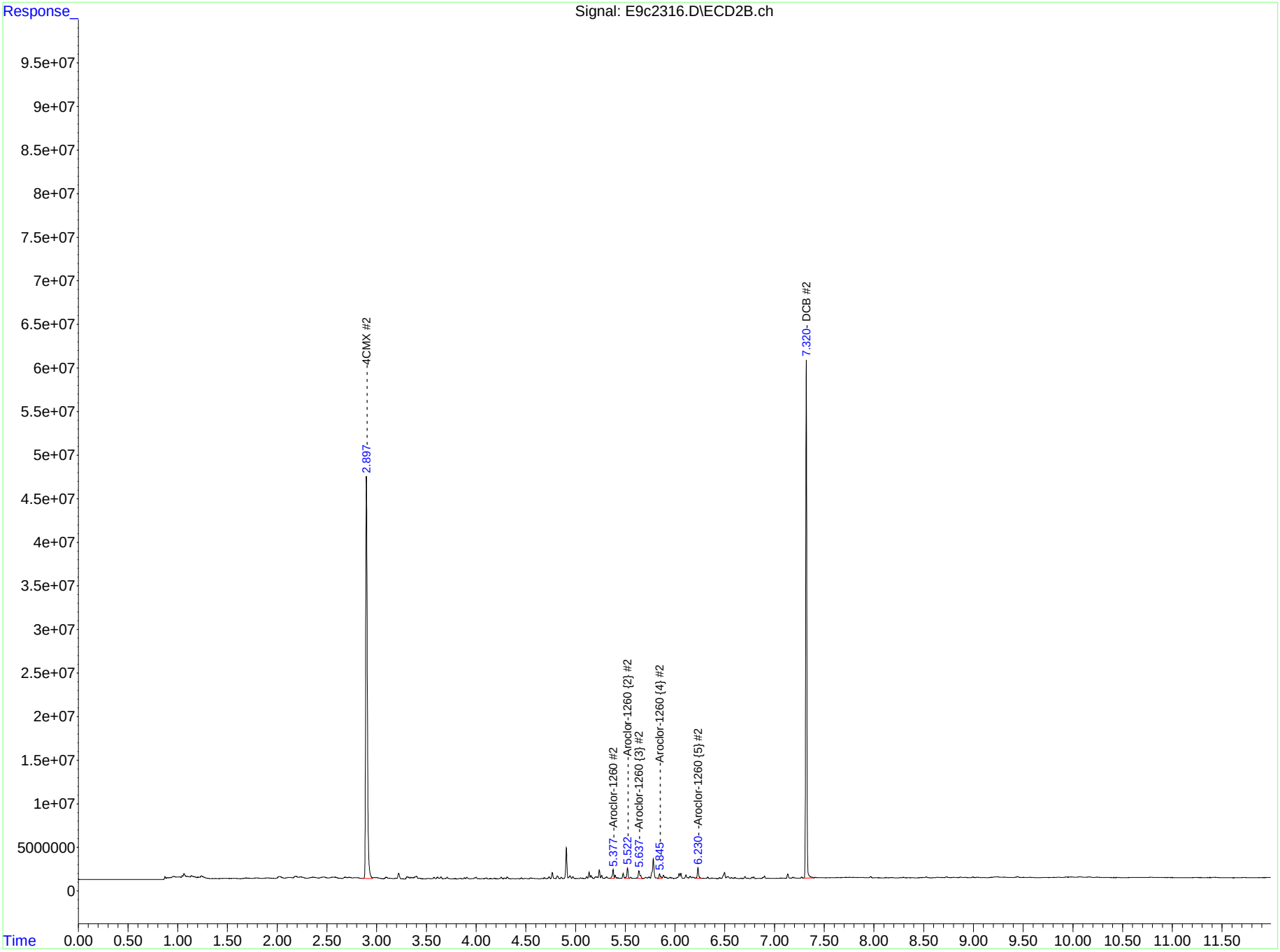
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1260	4.635	4.635	0.000	11775237	53.257	5.379	5.377	-0.002	9243175	62.616
Aroclor-1260 {2}	5.105	5.105	0.000	7074356	41.076	5.524	5.522	-0.002	11108162	61.152
Aroclor-1260 {3}	5.278	5.277	-0.001	6615895	35.749	5.641	5.637	-0.004	10926343	79.576
Aroclor-1260 {4}	5.492	5.491	-0.001	15457475	37.389	5.846	5.845	-0.001	5813174	50.337
Aroclor-1260 {5}	5.689	5.688	-0.001	9944925	43.828	6.233	6.231	-0.002	12160720	42.469
Sum Aroclor-1260				50867889	211.299				49251574	296.150
Average Aroclor-1260					42.260					59.230

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2316.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2316.D



PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**S**
Lab Sample ID:	**344334004**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV−14−49262**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 11:30**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2317.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2317.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.56	ug/kg	1.19	3.56	1
11104−28−2	Aroclor−1221	U	3.56	ug/kg	1.19	3.56	1
11141−16−5	Aroclor−1232	U	3.56	ug/kg	1.19	3.56	1
53469−21−9	Aroclor−1242	U	3.56	ug/kg	1.19	3.56	1
12672−29−6	Aroclor−1248	U	3.56	ug/kg	1.19	3.56	1
11097−69−1	Aroclor−1254	J	2.30	ug/kg	1.19	3.56	2
11096−82−5	Aroclor−1260	J	2.75	ug/kg	1.19	3.56	2

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2317.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 11:30 (#1); 23 Mar 2014 11:30 (#2)
Operator : YS1 InstName : ECD9
Sample : |344334004|1373644|1|SVA|1|ARSL|||
Misc : |ECD8241_1S|SOIL|CACV-14-49262|||
ALS Vial : 17 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:48:22 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.445	0.006	786513046	173.845	2.896	2.898	0.002	555921641	181.520
DCB	6.447	6.444	-0.003	719898504	187.375	7.323	7.319	-0.004	482925182	194.164

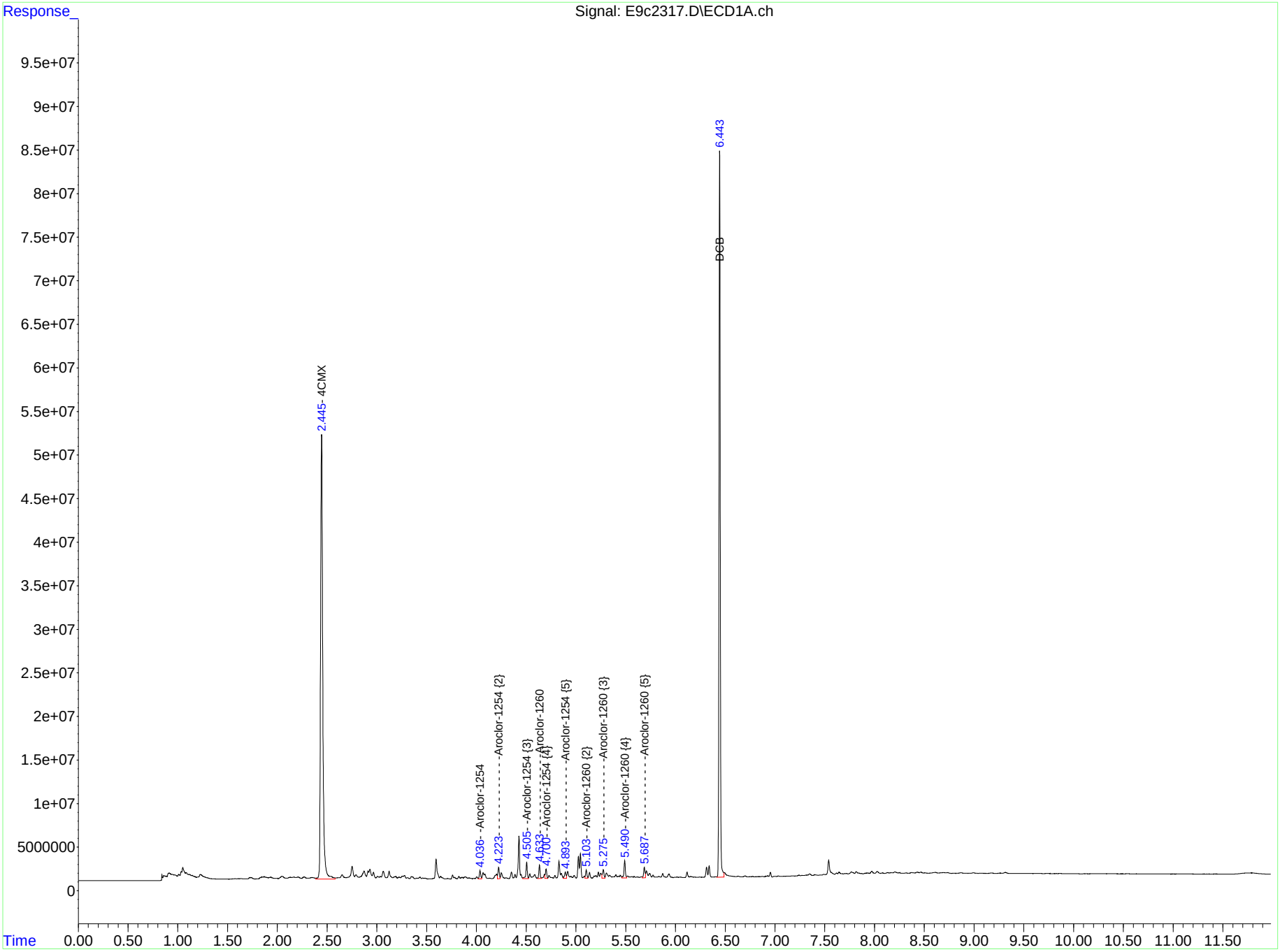
Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	86.92%	90.76%
DCB	200.000	No Limits	93.69%	97.08%

Target Compounds

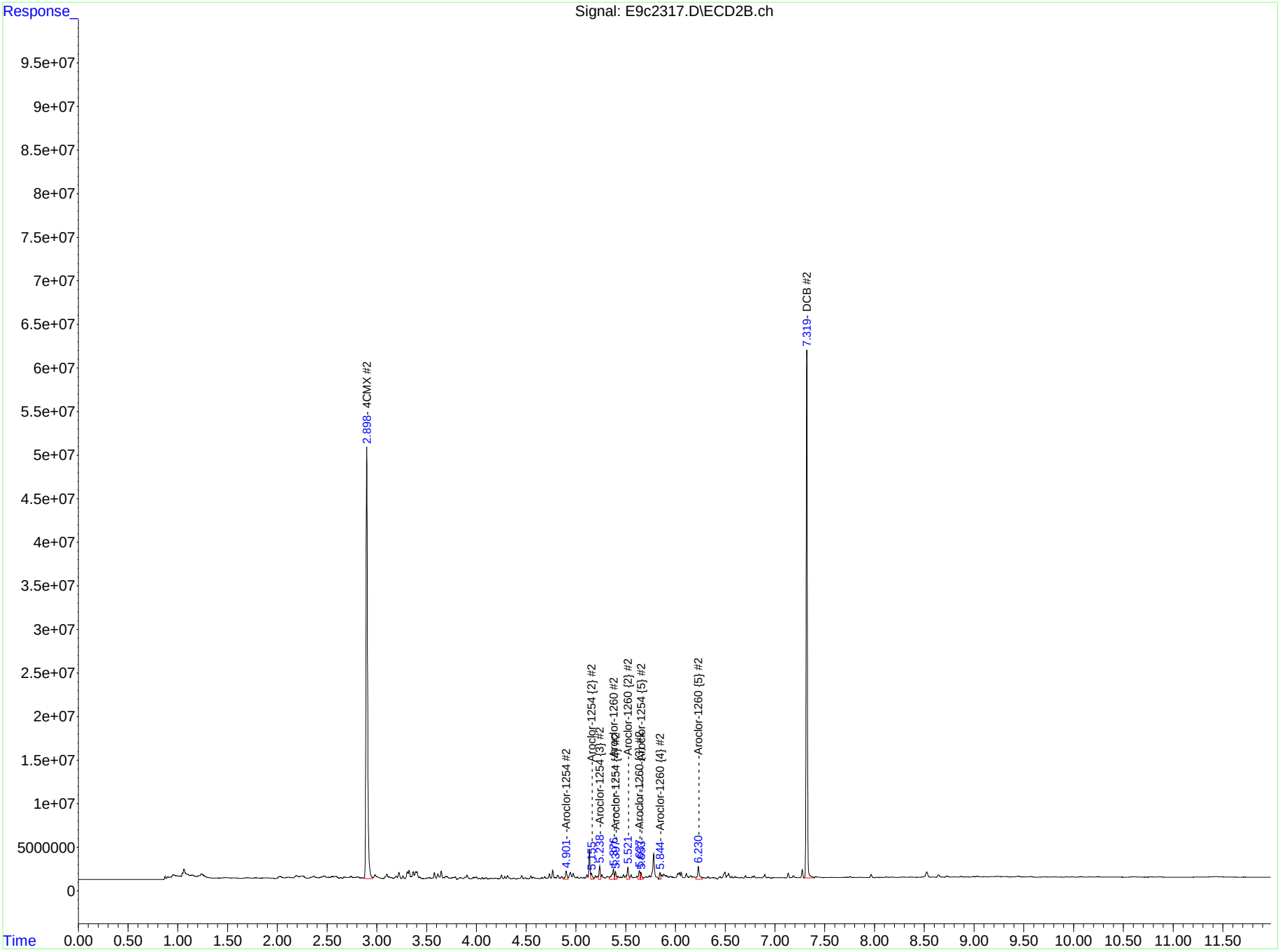
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1254	4.037	4.036	-0.001	9125636	51.109	4.902	4.902	0.000	11632981	74.335
Aroclor-1254 {2}	4.224	4.223	-0.001	12484622	51.098	5.156	5.155	-0.001	7659842	63.413
Aroclor-1254 {3}	4.507	4.505	-0.002	17769336	58.531	5.241	5.238	-0.003	13218877	60.326
Aroclor-1254 {4}	4.702	4.700	-0.002	9772845	42.058	5.400	5.398	-0.002	7610276	49.131
Aroclor-1254 {5}	4.896	4.894	-0.002	7716857	62.607	5.655	5.653	-0.002	7626011	76.116
Sum Aroclor-1254				56869296	265.403				47747985	323.322
Average Aroclor-1254					53.081					64.664
Aroclor-1260	4.635	4.634	-0.001	13335711	60.315	5.379	5.377	-0.002	17146886	116.159
Aroclor-1260 {2}	5.105	5.104	-0.001	8557885	49.690	5.524	5.522	-0.002	13496041	74.298
Aroclor-1260 {3}	5.278	5.275	-0.003	10154709	54.871	5.641	5.637	-0.004	10071344	73.349
Aroclor-1260 {4}	5.492	5.490	-0.002	19067673	46.122	5.846	5.844	-0.002	6296351	54.520
Aroclor-1260 {5}	5.689	5.687	-0.002	11429402	50.370	6.233	6.230	-0.003	19370907	67.649
Sum Aroclor-1260				62545381	261.367				66381528	385.975
Average Aroclor-1260					52.273					77.195

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2317.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2317.D



PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**S**
Lab Sample ID:	**344334008**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**42.6**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA−14−49271**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 11:45**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.08 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2318.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2318.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	5.79	ug/kg	1.93	5.79	1
11104−28−2	Aroclor−1221	U	5.79	ug/kg	1.93	5.79	1
11141−16−5	Aroclor−1232	U	5.79	ug/kg	1.93	5.79	1
53469−21−9	Aroclor−1242	U	5.79	ug/kg	1.93	5.79	1
12672−29−6	Aroclor−1248	U	5.79	ug/kg	1.93	5.79	1
11097−69−1	Aroclor−1254	J	2.37	ug/kg	1.93	5.79	1
11096−82−5	Aroclor−1260	J	4.30	ug/kg	1.93	5.79	2

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2318.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 11:45 (#1); 23 Mar 2014 11:45 (#2)
Operator : YS1 InstName : ECD9
Sample : |344334008|1373644|1|SVA|1|ARSL|||
Misc : |ECD8241_1S|SOIL|CAWA-14-49271|||
ALS Vial : 18 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 12:16:46 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.440	0.001	858343861	189.722	2.896	2.896	0.000	614169953	200.539
DCB	6.447	6.445	-0.002	768527477	200.032	7.323	7.320	-0.003	497974888	200.215

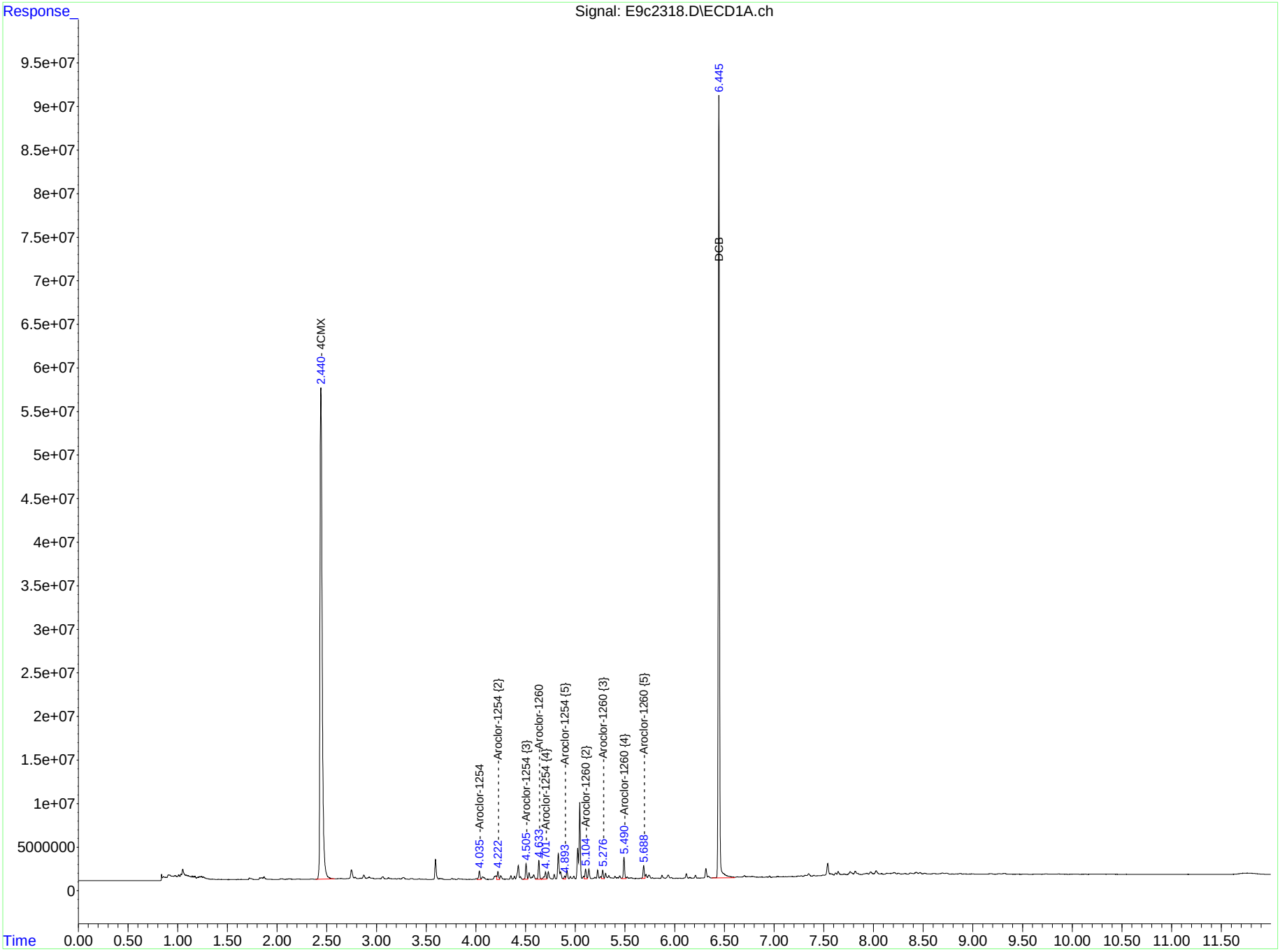
Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	94.86%	100.27%
DCB	200.000	No Limits	100.02%	100.11%

Target Compounds

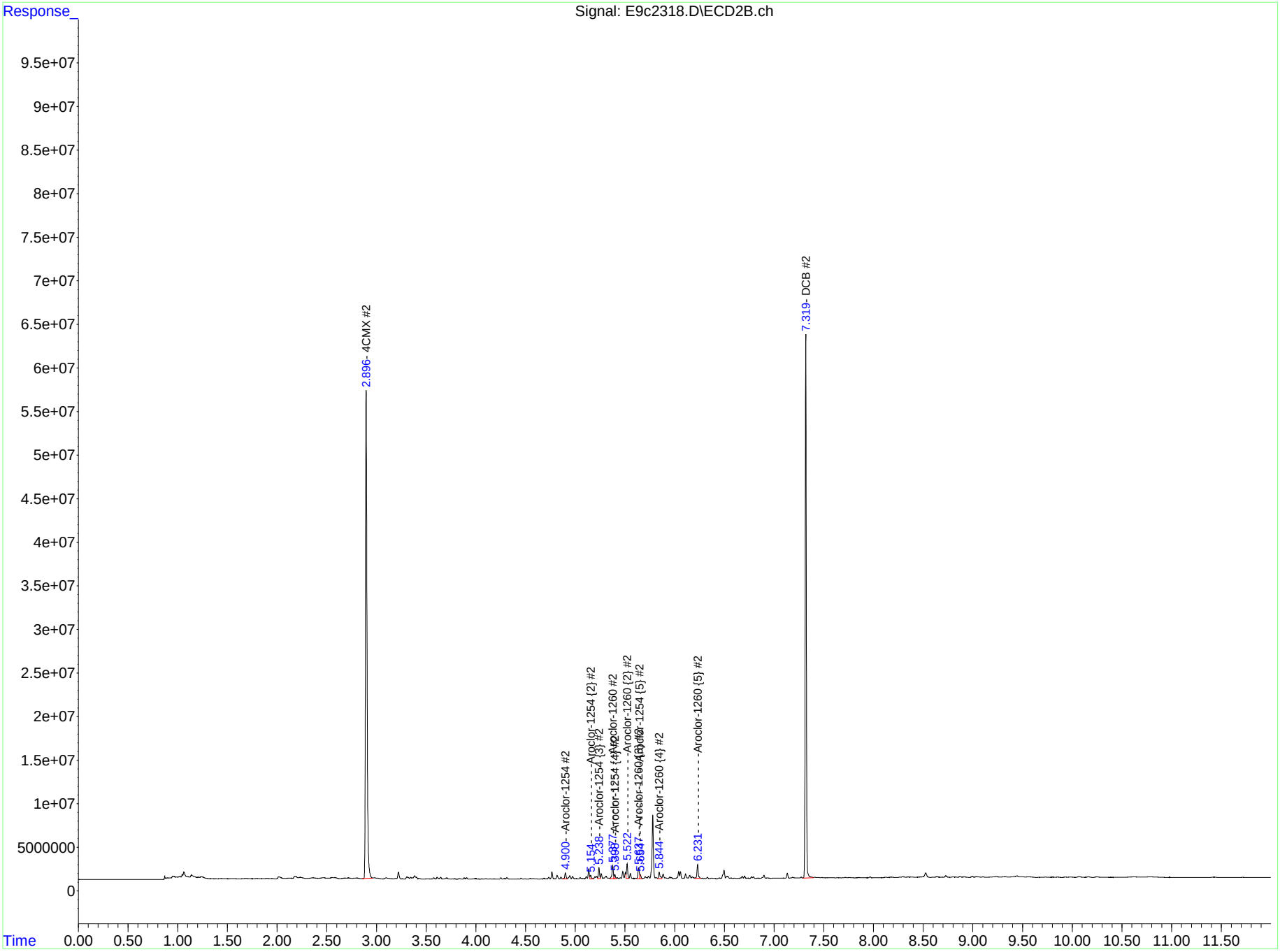
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1254	4.037	4.035	-0.002	9199681	51.524	4.902	4.901	-0.001	6303624	40.280
Aroclor-1254 {2}	4.224	4.222	-0.002	8349950	34.176	5.156	5.155	-0.001	3376111	27.950
Aroclor-1254 {3}	4.507	4.505	-0.002	15760694	51.915	5.241	5.239	-0.002	10086525	46.031
Aroclor-1254 {4}	4.702	4.701	-0.001	9933989	42.751	5.400	5.398	-0.002	3704753	23.917
Aroclor-1254 {5}	4.896	4.894	-0.002	2982544	24.197	5.655	5.654	-0.001	3292374	32.862
Sum Aroclor-1254				46226858	204.563				26763388	171.041
Average Aroclor-1254					40.913					34.208
Aroclor-1260	4.635	4.634	-0.001	18897107	85.468	5.379	5.377	-0.002	13578292	91.984
Aroclor-1260 {2}	5.105	5.104	-0.001	10121031	58.766	5.524	5.522	-0.002	13651880	75.156
Aroclor-1260 {3}	5.278	5.276	-0.002	8550289	46.202	5.641	5.637	-0.004	11962798	87.125
Aroclor-1260 {4}	5.492	5.491	-0.001	20777496	50.257	5.846	5.845	-0.001	7584672	65.676
Aroclor-1260 {5}	5.689	5.688	-0.001	12708239	56.006	6.233	6.231	-0.002	14696506	51.325
Sum Aroclor-1260				71054161	296.699				61474148	371.265
Average Aroclor-1260					59.340					74.253

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2318.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2318.D



Standards

Calibration History Report ECD9
GEL Laboratories, LLC
Method File : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Last Update : Fri Mar 21 11:51:54 2014
Integrator : (ChemStation Integrator) Response via : Initial Calibration

Cal Lvl:1 Amt:10.00 Last Updated with: C:\msdchem\1\data\032014.S\E9c2039.D

Injection Date	Mix	Calibration File
17 Mar 2014 12:09	A	C:\msdchem\1\data\031714.S\E9c1707.D
20 Mar 2014 06:54	B	C:\msdchem\1\data\032014.S\E9c2009.D
20 Mar 2014 09:23	D	C:\msdchem\1\data\032014.S\E9c2021.D
20 Mar 2014 10:32	E	C:\msdchem\1\data\032014.S\E9c2027.D
20 Mar 2014 08:15	J	C:\msdchem\1\data\032014.S\E9c2015.D
20 Mar 2014 12:51	O	C:\msdchem\1\data\032014.S\E9c2039.D
20 Mar 2014 11:40	K	C:\msdchem\1\data\032014.S\E9c2033.D

Cal Lvl:2 Amt:25.00 Last Updated with: C:\msdchem\1\data\032014.S\E9c2040.D

Injection Date	Mix	Calibration File
17 Mar 2014 12:20	A	C:\msdchem\1\data\031714.S\E9c1708.D
20 Mar 2014 07:05	B	C:\msdchem\1\data\032014.S\E9c2010.D
20 Mar 2014 09:35	D	C:\msdchem\1\data\032014.S\E9c2022.D
20 Mar 2014 10:43	E	C:\msdchem\1\data\032014.S\E9c2028.D
20 Mar 2014 08:27	J	C:\msdchem\1\data\032014.S\E9c2016.D
20 Mar 2014 13:02	O	C:\msdchem\1\data\032014.S\E9c2040.D
20 Mar 2014 11:52	K	C:\msdchem\1\data\032014.S\E9c2034.D

Cal Lvl:3 Amt:50.00 Last Updated with: C:\msdchem\1\data\032014.S\E9c2041.D

Injection Date	Mix	Calibration File
17 Mar 2014 12:32	A	C:\msdchem\1\data\031714.S\E9c1709.D
20 Mar 2014 07:17	B	C:\msdchem\1\data\032014.S\E9c2011.D
20 Mar 2014 09:46	D	C:\msdchem\1\data\032014.S\E9c2023.D
20 Mar 2014 10:55	E	C:\msdchem\1\data\032014.S\E9c2029.D
20 Mar 2014 08:38	J	C:\msdchem\1\data\032014.S\E9c2017.D
20 Mar 2014 13:13	O	C:\msdchem\1\data\032014.S\E9c2041.D
20 Mar 2014 12:05	K	C:\msdchem\1\data\032014.S\E9c2035.D

Cal Lvl:4 Amt:100.00 Last Updated with: C:\msdchem\1\data\032014.S\E9c2042.D

Injection Date	Mix	Calibration File
17 Mar 2014 12:43	A	C:\msdchem\1\data\031714.S\E9c1710.D
20 Mar 2014 07:28	B	C:\msdchem\1\data\032014.S\E9c2012.D
20 Mar 2014 09:58	D	C:\msdchem\1\data\032014.S\E9c2024.D
20 Mar 2014 11:06	E	C:\msdchem\1\data\032014.S\E9c2030.D
20 Mar 2014 08:49	J	C:\msdchem\1\data\032014.S\E9c2018.D
20 Mar 2014 13:25	O	C:\msdchem\1\data\032014.S\E9c2042.D
20 Mar 2014 05:30	X	C:\msdchem\1\data\032014.S\E9c2002.D
20 Mar 2014 13:59	F	C:\msdchem\1\data\032014.S\E9c2045.D
20 Mar 2014 12:16	K	C:\msdchem\1\data\032014.S\E9c2036.D

Cal Lvl:5 Amt:400.00 Last Updated with: C:\msdchem\1\data\032014.S\E9c2043.D

Injection Date	Mix	Calibration File
17 Mar 2014 12:55	A	C:\msdchem\1\data\031714.S\E9c1711.D
20 Mar 2014 07:39	B	C:\msdchem\1\data\032014.S\E9c2013.D
20 Mar 2014 10:09	D	C:\msdchem\1\data\032014.S\E9c2025.D
20 Mar 2014 11:17	E	C:\msdchem\1\data\032014.S\E9c2031.D
20 Mar 2014 09:01	J	C:\msdchem\1\data\032014.S\E9c2019.D
20 Mar 2014 13:36	O	C:\msdchem\1\data\032014.S\E9c2043.D
20 Mar 2014 12:28	K	C:\msdchem\1\data\032014.S\E9c2037.D

Calibration History Report ECD9
GEL Laboratories, LLC
Method File : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Last Update : Fri Mar 21 11:51:54 2014
Integrator : (ChemStation Integrator) Response via : Initial Calibration

ECD9_8082_031714.m Sun Mar 23 11:40:19 2014

Response Factor Report ECD9
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Last Update : Fri Mar 21 11:51:54 2014
Integrator : (ChemStation Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5		Avg	Curve	Exp	%RSD/r2
b | m1 | m2										
1)SA 4CMX	4.8413410	4.4866840	4.4701090	4.4905885	4.3324059		4.5242	AVRG	E6	4.1767
2)MAL1 Aroclor-1016	1.8578563	1.6819743	1.6297559	1.5940627	1.4751563		1.6478	AVRG	E5	8.4915
3)MAL1 Aroclor-1016 {2}	2.4400315	2.0938661	2.1284960	2.1256981	1.9880673		2.1552	AVRG	E5	7.8470
4)MAL1 Aroclor-1016 {3}	1.5997004	1.4164049	1.3821623	1.3527402	1.2687107		1.4039	AVRG	E5	8.7134
5)MAL1 Aroclor-1016 {4}	9.1955819	8.2071454	8.0273471	7.9184339	7.6133996		8.1924	AVRG	E4	7.3344
6)MAL1 Aroclor-1016 {5}	1.2319757	1.0920480	1.0672266	1.0470843	0.9930261		1.0863	AVRG	E5	8.2154
7)JL2 Aroclor-1221	6.0987612	5.6848769	5.5174536	5.2221184	4.7908523		5.4628	AVRG	E4	8.9968
8)JL2 Aroclor-1221 {2}	3.5880818	3.3459307	3.1776413	2.9806099	2.5839029		3.1352	AVRG	E4	12.1364
9)JL2 Aroclor-1221 {3}	1.5713286	1.4076821	1.3497538	1.2664428	1.1473155		1.3485	AVRG	E5	11.7465
10)FL3 Aroclor-1232				1.0585596			1.0586	AVRG	E5	0.0000
11)FL3 Aroclor-1232 {2}				8.1300320			8.1300	AVRG	E4	0.0000
12)FL3 Aroclor-1232 {3}				1.0397022			1.0397	AVRG	E5	0.0000
13)FL3 Aroclor-1232 {4}				6.7099407			6.7099	AVRG	E4	0.0000
14)FL3 Aroclor-1232 {5}				3.9713937			3.9714	AVRG	E4	0.0000
15)DL4 Aroclor-1242	1.6590805	1.6438354	1.5492161	1.4723034	1.3004035		1.5250	AVRG	E5	9.6100

Response Factor Report ECD9
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Last Update : Fri Mar 21 11:51:54 2014
Integrator : (ChemStation Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5		Avg	Curve	Exp	%RSD/r2
b | m1 | m2										
16)DL4 Aroclor-1242 {2}	2.0987918	1.9965151	1.9396151	1.8642179	1.7235548		1.9245	AVRG	E5	7.3394
17)DL4 Aroclor-1242 {3}	1.4446084	1.3586561	1.2843953	1.2296380	1.1103043		1.2855	AVRG	E5	9.8767
18)DL4 Aroclor-1242 {4}	8.1191083	7.7603603	7.4132570	7.1696526	6.6205397		7.4166	AVRG	E4	7.7055
19)DL4 Aroclor-1242 {5}	1.1346160	1.0521475	0.9946123	0.9509901	0.8723003		1.0009	AVRG	E5	9.9374
20)EL5 Aroclor-1248	1.2625686	1.1360841	1.1520206	1.1100536	1.0245748		1.1371	AVRG	E5	7.5346
21)EL5 Aroclor-1248 {2}	1.9708556	1.7596841	1.7128398	1.6702794	1.5200152		1.7267	AVRG	E5	9.4628
22)EL5 Aroclor-1248 {3}	1.2615223	1.1212920	1.0943097	1.0676258	1.0013732		1.1092	AVRG	E5	8.6619
23)EL5 Aroclor-1248 {4}	2.2449706	2.0048370	2.0181743	1.9774631	1.8140816		2.0119	AVRG	E5	7.6490
24)EL5 Aroclor-1248 {5}	1.9868806	1.7659952	1.7771613	1.7393239	1.6201119		1.7779	AVRG	E5	7.4513
25)BL6 Aroclor-1254	2.0620216	1.8077825	1.7743118	1.7006838	1.5827650		1.7855	AVRG	E5	9.9157
26)BL6 Aroclor-1254 {2}	2.8079236	2.4332391	2.4318102	2.3552507	2.1880314		2.4433	AVRG	E5	9.2905
27)BL6 Aroclor-1254 {3}	3.3866307	3.0376959	3.0343905	2.9656795	2.7549398		3.0359	AVRG	E5	7.4912
28)BL6 Aroclor-1254 {4}	2.5847856	2.3158665	2.3238096	2.2663308	2.1276109		2.3237	AVRG	E5	7.1356
29)BL6 Aroclor-1254 {5}	1.3183127	1.2169362	1.2276487	1.2154924	1.1845617		1.2326	AVRG	E5	4.1003
30)MAL7 Aroclor-1260	2.4971292	2.2377177	2.1573564	2.1619973	2.0009302					

Response Factor Report ECD9
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Last Update : Fri Mar 21 11:51:54 2014
Integrator : (ChemStation Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5		Avg	Curve	Exp	%RSD/r2
b | m1 | m2										
							2.2110	AVRG	E5	8.2158
31)MAL7 Aroclor-1260 {2}	1.9549474	1.7573231	1.6618730	1.6530661	1.5840562		1.7223	AVRG	E5	8.3593
32)MAL7 Aroclor-1260 {3}	2.0863421	1.8603241	1.8039798	1.7962597	1.7063280		1.8506	AVRG	E5	7.7182
33)MAL7 Aroclor-1260 {4}	4.5240826	4.1411054	4.0555194	4.1002966	3.8500730		4.1342	AVRG	E5	5.9265
34)MAL7 Aroclor-1260 {5}	2.5187980	2.2731432	2.2031710	2.2252762	2.1250622		2.2691	AVRG	E5	6.5878
35)KL8 Aroclor-1262	2.1633787	1.9666583	1.8939886	1.8015171	1.6897395		1.9031	AVRG	E5	9.3892
36)KL8 Aroclor-1262 {2}	2.9425012	2.6523395	2.5662893	2.4438160	2.2919180		2.5794	AVRG	E5	9.4640
37)KL8 Aroclor-1262 {3}	3.6141951	3.2967723	3.2051908	3.0593898	2.8684270		3.2088	AVRG	E5	8.6796
38)KL8 Aroclor-1262 {4}	3.2415227	2.9885727	2.9081360	2.7806106	2.6411153		2.9120	AVRG	E5	7.7762
39)KL8 Aroclor-1262 {5}	6.4105601	6.0675571	6.0031093	5.7074911	5.3850949		5.9148	AVRG	E5	6.5506
40)OL9 Aroclor-1268	7.8720483	7.2302810	7.1851383	6.6814444	6.2761882		7.0490	AVRG	E5	8.5741
41)OL9 Aroclor-1268 {2}	7.1951625	6.6316240	6.6590974	6.3241830	6.0241635		6.5668	AVRG	E5	6.6416
42)OL9 Aroclor-1268 {3}	6.1362016	5.6285169	5.6000417	5.2899010	5.0560143		5.5421	AVRG	E5	7.3497
43)OL9 Aroclor-1268 {4}	2.6678666	2.3465984	2.2982598	2.1900282	2.0932232		2.3192	AVRG	E5	9.4100
44)OL9 Aroclor-1268 {5}	1.8286549	1.7191827	1.7055824	1.5826994	1.5336206		1.6739	AVRG	E6	7.0050

Response Factor Report ECD9
GEL Laboratories, LLC

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5		Avg	Curve	Exp	%RSD/r2
b | m1 | m2										
45)X 4,4' DDT				2.7895648			2.7896	AVRG	E6	0.0000
46)X 4,4' DDD				3.6712693			3.6713	AVRG	E6	0.0000
47)X 4,4' DDE				4.6230142			4.6230	AVRG	E6	0.0000
48)SA DCB	4.3736490	3.8330413	3.7175132	3.7276601	3.5582764		3.8420	AVRG	E6	8.1460

COLUMN #2

Compound	1	2	3	4	5		Avg	Curve	Exp	%RSD/r2
b | m1 | m2										
1)SA 4CMX	3.0554018	2.9717940	3.0571832	3.1204343	3.1081694		3.0626	AVRG	E6	1.9143
2)MAL1 Aroclor-1016	1.1361946	1.0239172	0.9963831	1.0055277	0.9627722		1.0250	AVRG	E5	6.4415
3)MAL1 Aroclor-1016 {2}	1.5175635	1.3547475	1.3523852	1.3555099	1.2978319		1.3756	AVRG	E5	6.0362
4)MAL1 Aroclor-1016 {3}	1.0245953	0.9224247	0.8917427	0.8787076	0.8345268		0.9104	AVRG	E5	7.8240
5)MAL1 Aroclor-1016 {4}	6.4588103	5.6402283	5.4972913	5.4304023	5.2808755		5.6615	AVRG	E4	8.1967
6)MAL1 Aroclor-1016 {5}	8.4267497	7.4661734	7.2166754	7.1236735	6.8227245		7.4112	AVRG	E4	8.2660
7)JL2 Aroclor-1221	4.7095347	4.4599018	4.0337377	3.7517401	3.3713219		4.0652	AVRG	E4	13.1992
8)JL2 Aroclor-1221 {2}	3.1311261	2.7863257	2.5926414	2.3627057	2.0260952		2.5798	AVRG	E4	16.2215
9)JL2 Aroclor-1221 {3}	1.1157364	0.9649369	0.9034788	0.8446224	0.7610995					

Response Factor Report ECD9
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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5		Avg	Curve	Exp	%RSD/r2
b | m1 | m2										
							0.9180	AVRG	E5	14.5660
10)FL3 Aroclor-1232				6.9355846			6.9356	AVRG	E4	0.0000
11)FL3 Aroclor-1232 {2}				6.6514889			6.6515	AVRG	E4	0.0000
12)FL3 Aroclor-1232 {3}				4.5056378			4.5056	AVRG	E4	0.0000
13)FL3 Aroclor-1232 {4}				2.7686419			2.7686	AVRG	E4	0.0000
14)FL3 Aroclor-1232 {5}				2.2868318			2.2868	AVRG	E4	0.0000
15)DL4 Aroclor-1242	1.0737963	0.9817436	0.9446953	0.9200687	0.8420161		0.9525	AVRG	E5	8.9223
16)DL4 Aroclor-1242 {2}	1.3923437	1.2916984	1.2562453	1.2265374	1.1446112		1.2623	AVRG	E5	7.1893
17)DL4 Aroclor-1242 {3}	9.9764549	9.1252653	8.5695852	8.1378290	7.3794058		8.6377	AVRG	E4	11.3842
18)DL4 Aroclor-1242 {4}	6.1701505	5.5761001	5.2293176	5.0001782	4.5816453		5.3115	AVRG	E4	11.3106
19)DL4 Aroclor-1242 {5}	8.2970647	7.4483875	6.9917991	6.6399042	6.0696396		7.0894	AVRG	E4	11.8831
20)EL5 Aroclor-1248	1.1744052	0.9829466	0.9422992	0.9045170	0.8230376		0.9654	AVRG	E5	13.5545
21)EL5 Aroclor-1248 {2}	1.4067250	1.2226396	1.1808859	1.1520761	1.0576491		1.2040	AVRG	E5	10.6764
22)EL5 Aroclor-1248 {3}	1.2796594	1.1049406	1.0751763	1.0478774	0.9734973		1.0962	AVRG	E5	10.3575
23)EL5 Aroclor-1248 {4}	1.5924791	1.3910696	1.3676522	1.3477093	1.2533134		1.3904	AVRG	E5	8.9517

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5		Avg	Curve	Exp	%RSD/r2
b | m1 | m2										
24)EL5 Aroclor-1248 {5}	1.7594080	1.5521394	1.5378206	1.5040957	1.3956320		1.5498	AVRG	E5	8.5321
25)BL6 Aroclor-1254	1.8064596	1.5713752	1.5414043	1.4957603	1.4096660		1.5649	AVRG	E5	9.4684
26)BL6 Aroclor-1254 {2}	1.3930940	1.2023060	1.1820953	1.1529631	1.1091569		1.2079	AVRG	E5	9.0463
27)BL6 Aroclor-1254 {3}	2.4509047	2.1646137	2.1761827	2.1356842	2.0287412		2.1912	AVRG	E5	7.1379
28)BL6 Aroclor-1254 {4}	1.7009212	1.4957296	1.5555105	1.5236136	1.4691444		1.5490	AVRG	E5	5.8622
29)BL6 Aroclor-1254 {5}	1.1014328	0.9834849	0.9740940	0.9809840	0.9694508		1.0019	AVRG	E5	5.5818
30)MAL7 Aroclor-1260	1.6587136	1.4687944	1.4328517	1.4433436	1.3770789		1.4762	AVRG	E5	7.2765
31)MAL7 Aroclor-1260 {2}	2.0344529	1.8060212	1.7578393	1.7763154	1.7077813		1.8165	AVRG	E5	6.9901
32)MAL7 Aroclor-1260 {3}	1.5264262	1.3507048	1.3195635	1.3443776	1.3242602		1.3731	AVRG	E5	6.3164
33)MAL7 Aroclor-1260 {4}	1.3056731	1.1471047	1.1115116	1.1186305	1.0913799		1.1549	AVRG	E5	7.5022
34)MAL7 Aroclor-1260 {5}	3.1004255	2.8090211	2.7746648	2.8638187	2.7693116		2.8634	AVRG	E5	4.8095
35)KL8 Aroclor-1262	1.4445530	1.3462453	1.2754561	1.2695538	1.2153792		1.3102	AVRG	E5	6.7406
36)KL8 Aroclor-1262 {2}	1.8060827	1.5877508	1.5262059	1.4621917	1.4072458		1.5579	AVRG	E5	9.9103
37)KL8 Aroclor-1262 {3}	2.4604793	2.2121243	2.1514651	2.0664278	1.9796510		2.1740	AVRG	E5	8.3993
38)KL8 Aroclor-1262 {4}	2.3020363	2.0718935	2.0097875	1.9262493	1.8596886		2.0339	AVRG	E5	8.3676

Response Factor Report ECD9
GEL Laboratories, LLC

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Integrator : (ChemStation Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound	1	2	3	4	5		Avg	Curve	Exp	%RSD/r2
b | m1 | m2										
39)KL8 Aroclor-1262 {5}	4.3920786	4.1116002	4.0693433	3.9062321	3.7697283		4.0498	AVRG	E5	5.7963
40)OL9 Aroclor-1268	5.2598344	4.8479470	4.8569533	4.5493481	4.3732941		4.7775	AVRG	E5	7.0933
41)OL9 Aroclor-1268 {2}	4.7614137	4.3439869	4.3569232	4.0999377	4.0223626		4.3169	AVRG	E5	6.6913
42)OL9 Aroclor-1268 {3}	4.0304876	3.7020795	3.7104643	3.4784209	3.4155059		3.6674	AVRG	E5	6.5958
43)OL9 Aroclor-1268 {4}	1.7979659	1.5885894	1.5424049	1.4463962	1.4068201		1.5564	AVRG	E5	9.8524
44)OL9 Aroclor-1268 {5}	1.2060683	1.1495227	1.1582640	1.0883241	1.0727657		1.1350	AVRG	E6	4.7965
45)X 4,4' DDT				1.8664946			1.8665	AVRG	E6	0.0000
46)X 4,4' DDD				2.8612606			2.8613	AVRG	E6	0.0000
47)X 4,4' DDE				3.5235218			3.5235	AVRG	E6	0.0000
48)SA DCB	2.7641983	2.4399086	2.3853373	2.4576676	2.3888983		2.4872	AVRG	E6	6.3532

(#) = Out of Range ($) = Individual RF Out of Range ### Number of calibration levels exceeded format ###
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

COMPOUND LISTING
GEL Laboratories, LLC

Method File : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Last Update : Fri Mar 21 11:51:54 2014
Integrator : (ChemStation Integrator) Response via : Initial Calibration

Integration Parameter File: autoint1.e

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 ------------------------------------------------
|*** Integrator Events ***                       |
|                                                |
|Initial Threshold    17.8                       |
|Initial Peak Width   0.018                      |
|Initial Area Reject  0.0                        |
|         Shoulders OFF                          |
 ------------------------------------------------
```

Integration Parameter File: autoint2.e

```
 ------------------------------------------------
|*** Integrator Events ***                       |
|                                                |
|Initial Threshold    17.5                       |
|Initial Peak Width   0.012                      |
|Initial Area Reject  0.0                        |
|         Shoulders OFF                          |
 ------------------------------------------------
```

Compound	RT	RT Window
1)SA 4CMX	2.439	2.409- 2.469
2)MAL1Aroclor-1016	3.007	2.977- 3.037
3)MAL1Aroclor-1016 {2}	3.360	3.330- 3.390
4)MAL1Aroclor-1016 {3}	3.459	3.429- 3.489
5)MAL1Aroclor-1016 {4}	3.505	3.475- 3.535
6)MAL1Aroclor-1016 {5}	3.760	3.730- 3.790
7)JL2 Aroclor-1221	2.582	2.552- 2.612
8)JL2 Aroclor-1221 {2}	2.698	2.668- 2.728
9)JL2 Aroclor-1221 {3}	2.730	2.700- 2.760
10)FL3 Aroclor-1232	2.731	2.701- 2.761
11)FL3 Aroclor-1232 {2}	3.008	2.978- 3.038
12)FL3 Aroclor-1232 {3}	3.360	3.330- 3.390
13)FL3 Aroclor-1232 {4}	3.459	3.429- 3.489
14)FL3 Aroclor-1232 {5}	3.505	3.475- 3.535
15)DL4 Aroclor-1242	3.007	2.977- 3.037
16)DL4 Aroclor-1242 {2}	3.360	3.330- 3.390
17)DL4 Aroclor-1242 {3}	3.458	3.428- 3.488
18)DL4 Aroclor-1242 {4}	3.504	3.474- 3.534
19)DL4 Aroclor-1242 {5}	3.760	3.730- 3.790
20)EL5 Aroclor-1248	3.359	3.329- 3.389
21)EL5 Aroclor-1248 {2}	3.760	3.730- 3.790
22)EL5 Aroclor-1248 {3}	3.822	3.792- 3.852
23)EL5 Aroclor-1248 {4}	4.067	4.037- 4.097
24)EL5 Aroclor-1248 {5}	4.086	4.056- 4.116
25)BL6 Aroclor-1254	4.037	4.007- 4.067
26)BL6 Aroclor-1254 {2}	4.224	4.194- 4.254
27)BL6 Aroclor-1254 {3}	4.507	4.477- 4.537
28)BL6 Aroclor-1254 {4}	4.702	4.672- 4.732
29)BL6 Aroclor-1254 {5}	4.896	4.866- 4.926
30)MAL7Aroclor-1260	4.635	4.605- 4.665
31)MAL7Aroclor-1260 {2}	5.105	5.075- 5.135
32)MAL7Aroclor-1260 {3}	5.278	5.248- 5.308
33)MAL7Aroclor-1260 {4}	5.492	5.462- 5.522
34)MAL7Aroclor-1260 {5}	5.689	5.659- 5.719
35)KL8 Aroclor-1262	4.635	4.610- 4.665
36)KL8 Aroclor-1262 {2}	4.830	4.805- 4.860
37)KL8 Aroclor-1262 {3}	5.106	5.081- 5.136
38)KL8 Aroclor-1262 {4}	5.278	5.253- 5.308
39)KL8 Aroclor-1262 {5}	5.492	5.467- 5.522
40)OL9 Aroclor-1268	5.714	5.689- 5.744
41)OL9 Aroclor-1268 {2}	5.741	5.716- 5.771
42)OL9 Aroclor-1268 {3}	5.875	5.850- 5.905

43)OL9 Aroclor-1268 {4}	6.120	6.095- 6.150
44)OL9 Aroclor-1268 {5}	6.317	6.292- 6.347
45)X 4,4' DDT	5.048	5.023- 5.078
46)X 4,4' DDD	4.853	4.828- 4.883
47)X 4,4' DDE	4.430	4.400- 4.460
48)SA DCB	6.447	6.417- 6.477
49) Column #2	4.845	4.815- 4.875
50)SA 4CMX #2	2.896	2.866- 2.926
51)MAL1Aroclor-1016 #2	3.986	3.956- 4.016
52)MAL1Aroclor-1016 {2} #2	4.001	3.971- 4.031
53)MAL1Aroclor-1016 {3} #2	4.103	4.073- 4.133
54)MAL1Aroclor-1016 {4} #2	4.182	4.152- 4.212
55)MAL1Aroclor-1016 {5} #2	4.456	4.426- 4.486
56)JL2 Aroclor-1221 #2	3.145	3.115- 3.175
57)JL2 Aroclor-1221 {2} #2	3.264	3.234- 3.294
58)JL2 Aroclor-1221 {3} #2	3.314	3.284- 3.344
59)FL3 Aroclor-1232 #2	3.314	3.284- 3.344
60)FL3 Aroclor-1232 {2} #2	4.001	3.971- 4.031
61)FL3 Aroclor-1232 {3} #2	4.103	4.073- 4.133
62)FL3 Aroclor-1232 {4} #2	4.182	4.152- 4.212
63)FL3 Aroclor-1232 {5} #2	4.252	4.222- 4.282
64)DL4 Aroclor-1242 #2	3.986	3.956- 4.016
65)DL4 Aroclor-1242 {2} #2	4.000	3.970- 4.030
66)DL4 Aroclor-1242 {3} #2	4.103	4.073- 4.133
67)DL4 Aroclor-1242 {4} #2	4.182	4.152- 4.212
68)DL4 Aroclor-1242 {5} #2	4.456	4.426- 4.486
69)EL5 Aroclor-1248 #2	4.252	4.222- 4.282
70)EL5 Aroclor-1248 {2} #2	4.456	4.426- 4.486
71)EL5 Aroclor-1248 {3} #2	4.548	4.518- 4.578
72)EL5 Aroclor-1248 {4} #2	4.734	4.704- 4.764
73)EL5 Aroclor-1248 {5} #2	4.769	4.739- 4.799
74)BL6 Aroclor-1254 #2	4.902	4.872- 4.932
75)BL6 Aroclor-1254 {2} #2	5.156	5.126- 5.186
76)BL6 Aroclor-1254 {3} #2	5.241	5.211- 5.271
77)BL6 Aroclor-1254 {4} #2	5.400	5.370- 5.430
78)BL6 Aroclor-1254 {5} #2	5.655	5.625- 5.685
79)MAL7Aroclor-1260 #2	5.379	5.349- 5.409
80)MAL7Aroclor-1260 {2} #2	5.524	5.494- 5.554
81)MAL7Aroclor-1260 {3} #2	5.641	5.611- 5.671
82)MAL7Aroclor-1260 {4} #2	5.846	5.816- 5.876
83)MAL7Aroclor-1260 {5} #2	6.233	6.203- 6.263
84)KL8 Aroclor-1262 #2	5.379	5.349- 5.409
85)KL8 Aroclor-1262 {2} #2	5.524	5.494- 5.554
86)KL8 Aroclor-1262 {3} #2	5.847	5.817- 5.877
87)KL8 Aroclor-1262 {4} #2	6.061	6.031- 6.091
88)KL8 Aroclor-1262 {5} #2	6.233	6.203- 6.263
89)OL9 Aroclor-1268 #2	6.489	6.459- 6.519
90)OL9 Aroclor-1268 {2} #2	6.523	6.493- 6.553
91)OL9 Aroclor-1268 {3} #2	6.705	6.675- 6.735
92)OL9 Aroclor-1268 {4} #2	6.902	6.872- 6.932
93)OL9 Aroclor-1268 {5} #2	7.136	7.106- 7.166
94)X 4,4' DDT #2	5.782	5.752- 5.812
95)X 4,4' DDD #2	5.557	5.527- 5.587
96)X 4,4' DDE #2	5.138	4.838- 5.438
97)SA DCB #2	7.323	7.293- 7.353

ECD9_8082_031714.m Sun Mar 23 11:40:25 2014

Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_1

Injection Date: 17−MAR−14 13:06

Data File: 031714.S\E9c1712.D

Init. Cal. Date(s): NA

Lab Sample ID WAR140205−60

Method: 031714.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 1

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1016	164776.11	168631.72	1000	2.34	15		Averaged
Aroclor−1016(2)	215523.18	222932.48	1000	3.44	15		Averaged
Aroclor−1016(3)	140394.37	142261.4	1000	1.33	15		Averaged
Aroclor−1016(4)	81923.82	82584.27	1000	0.81	15		Averaged
Aroclor−1016(5)	108627.21	107962.02	1000	−0.61	15		Averaged
Aroclor−1260	221102.62	215691.68	1000	−2.45	15		Averaged
Aroclor−1260(2)	172225.32	166850.23	1000	−3.12	15		Averaged
Aroclor−1260(3)	185064.67	180360.6	1000	−2.54	15		Averaged
Aroclor−1260(4)	413421.54	410933	1000	−0.6	15		Averaged
Aroclor−1260(5)	226909.01	223361.38	1000	−1.56	15		Averaged
4cmx(Surr)	4524225.69	4476169.89	100	−1.06	15		Averaged
Decachlorobiphenyl(Surr)	3842027.97	3674426.01	100	−4.36	15		Averaged

Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_2

Injection Date: 17−MAR−14 13:06

Data File: 031714.S\E9c1712.D

Init. Cal. Date(s): NA

Lab Sample ID WAR140205−60

Method: 031714.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 2

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1016	102495.9	105260.18	1000	2.7	15		Averaged
Aroclor−1016(2)	137560.76	143555.37	1000	4.36	15		Averaged
Aroclor−1016(3)	91039.94	92071.43	1000	1.13	15		Averaged
Aroclor−1016(4)	56615.22	56546.74	1000	−0.12	15		Averaged
Aroclor−1016(5)	74111.99	73228.23	1000	−1.19	15		Averaged
Aroclor−1260	147615.64	145307.1	1000	−1.56	15		Averaged
Aroclor−1260(2)	181648.2	178829.14	1000	−1.55	15		Averaged
Aroclor−1260(3)	137306.64	135084.39	1000	−1.62	15		Averaged
Aroclor−1260(4)	115486	112793.09	1000	−2.33	15		Averaged
Aroclor−1260(5)	286344.83	287361.28	1000	0.35	15		Averaged
4cmx(Surr)	3062596.53	3123278.97	100	1.98	15		Averaged
Decachlorobiphenyl(Surr)	2487202.02	2406024.41	100	−3.26	15		Averaged

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\031714.S\
Data File : E9c1712.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Mar 2014 13:06 (#1); 17 Mar 2014 13:06 (#2)
Operator : JXM InstName : ECD9
Sample : |WAR140205-60|ICV|1|SVA|1|1660
Misc : |MIX[A]
ALS Vial : 12 Sample Multiplier: 1

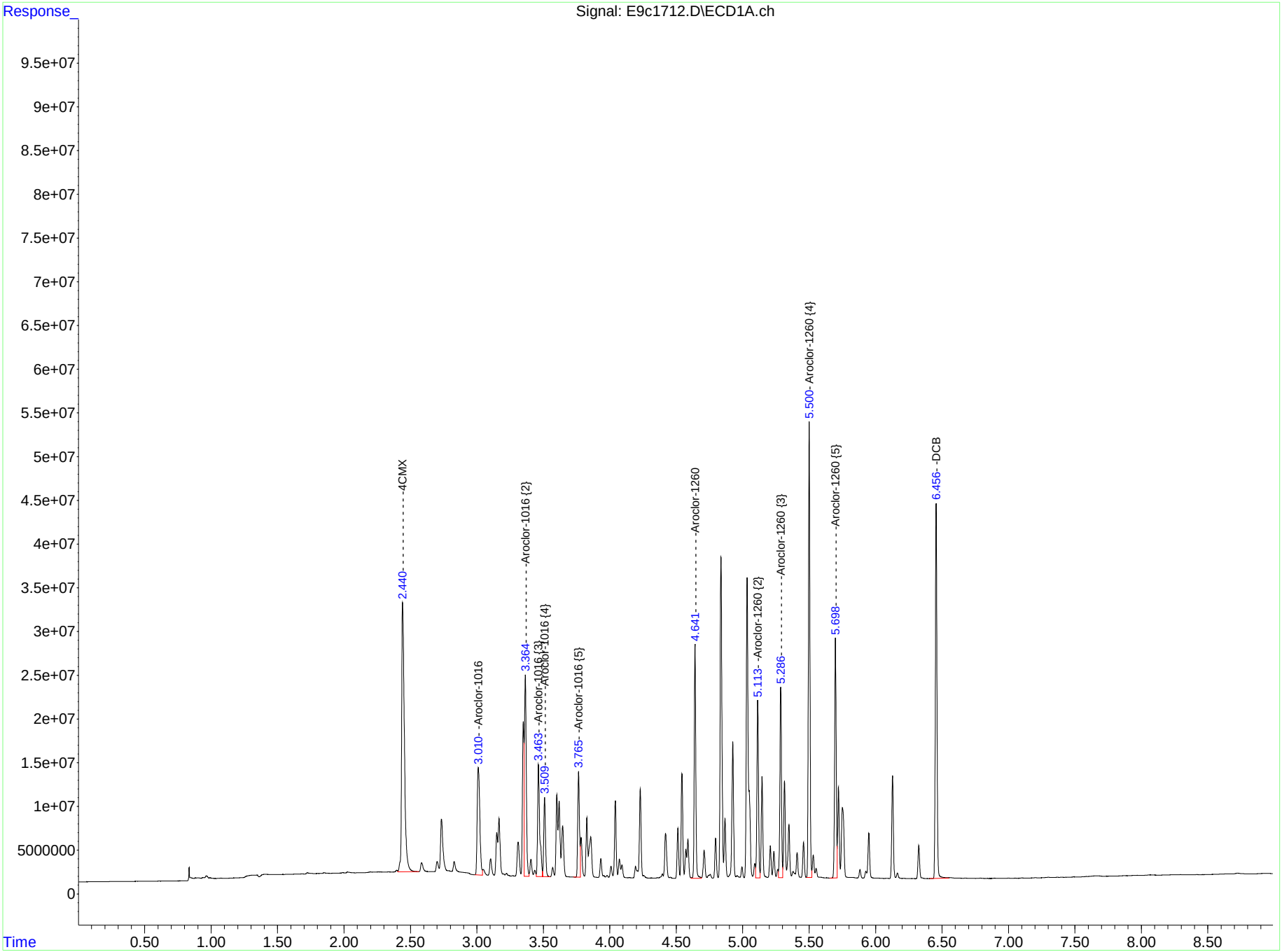
Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 17 13:16:23 2014
Quant Method : C:\msdchem\1\data\031714.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Mon Mar 17 13:14:23 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

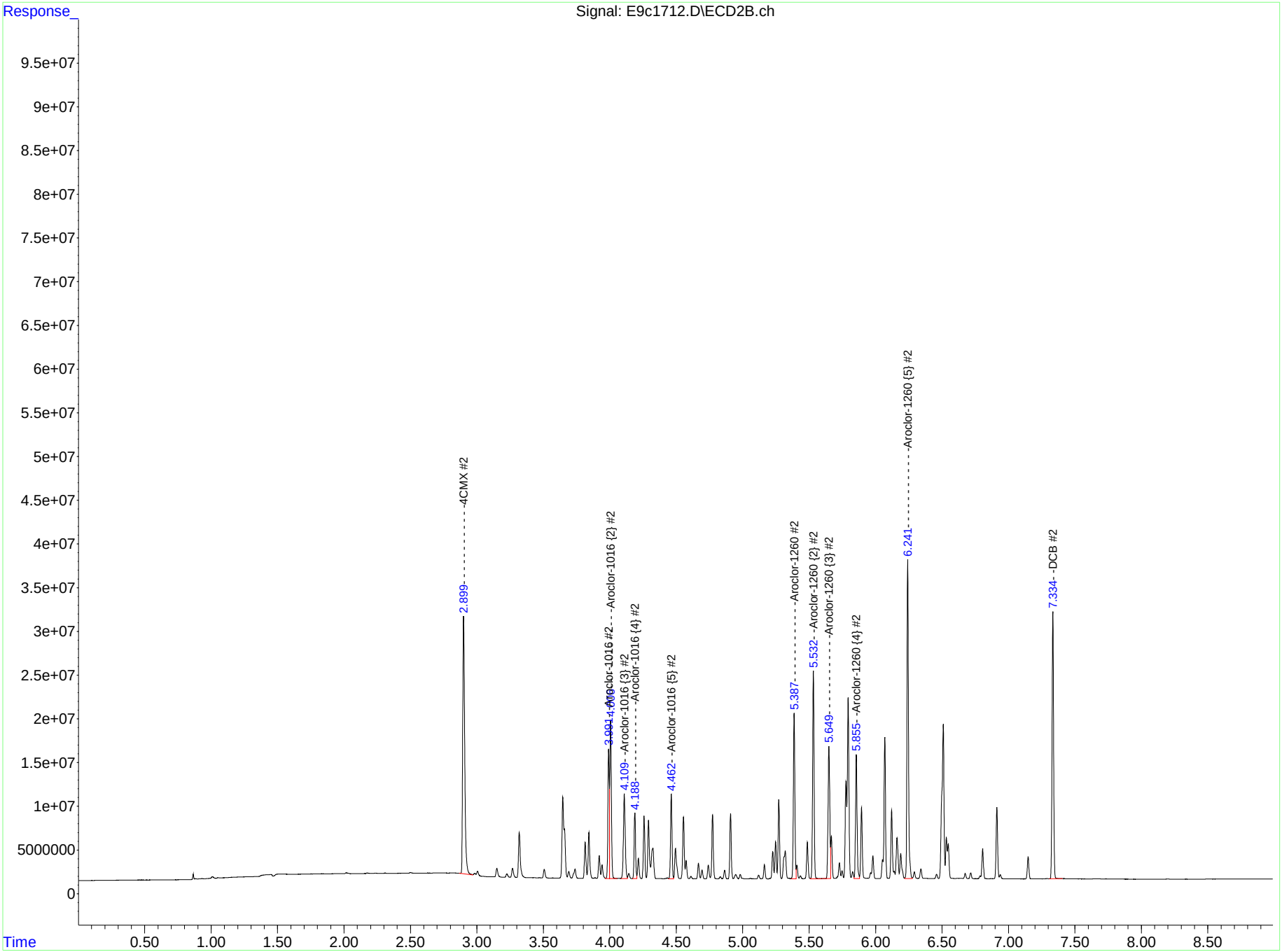
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.441	2.441	0.000	447616989	98.938	2.900	2.900	0.000	312327897	101.981
DCB	6.456	6.456	0.000	367442601	95.638	7.334	7.334	0.000	240602441	96.736
Target Compounds										
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1016	3.010	3.010	0.000	168631715	1023.399	3.991	3.991	0.000	105260180	1026.970
Aroclor-1016 {2}	3.364	3.364	0.000	222932481	1034.378	4.006	4.006	0.000	143555371	1043.578
Aroclor-1016 {3}	3.463	3.463	0.000	142261395	1013.298	4.109	4.109	0.000	92071428	1011.330
Aroclor-1016 {4}	3.509	3.509	0.000	82584265	1008.062	4.189	4.189	0.000	56546741	998.791
Aroclor-1016 {5}	3.765	3.765	0.000	107962017	993.876	4.463	4.463	0.000	73228227	988.075
Sum Aroclor-1016				724371873	5073.014				470661946	5068.743
Average Aroclor-1016					1014.603					1013.749
Aroclor-1260	4.641	4.641	0.000	215691682	975.527	5.387	5.387	0.000	145307095	984.361
Aroclor-1260 {2}	5.113	5.113	0.000	166850228	968.790	5.532	5.532	0.000	178829141	984.481
Aroclor-1260 {3}	5.286	5.286	0.000	180360596	974.581	5.649	5.649	0.000	135084385	983.815
Aroclor-1260 {4}	5.500	5.500	0.000	410932995	993.981	5.855	5.855	0.000	112793094	976.682
Aroclor-1260 {5}	5.698	5.698	0.000	223361382	984.365	6.242	6.242	0.000	287361276	1003.550
Sum Aroclor-1260				1197196884	4897.245				859374990	4932.889
Average Aroclor-1260					979.449					986.578

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\031714.S\
Data File : E9c1712.D



Data Path : C:\msdchem\1\data\031714.S\
Data File : E9c1712.D



Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_1

Injection Date: 20−MAR−14 08:04

Data File: 032014.S\E9c2014.D

Init. Cal. Date(s): NA

Lab Sample ID WAR131205−54

Method: 032014.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 1

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1254	178551.3	158985.36	1000	−10.96	15		Averaged
Aroclor−1254(2)	244325.1	221542.63	1000	−9.32	15		Averaged
Aroclor−1254(3)	303586.73	280179	1000	−7.71	15		Averaged
Aroclor−1254(4)	232368.07	213244.96	1000	−8.23	15		Averaged
Aroclor−1254(5)	123259.03	116800.58	1000	−5.24	15		Averaged

Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_2

Injection Date: 20−MAR−14 08:04

Data File: 032014.S\E9c2014.D

Init. Cal. Date(s): NA

Lab Sample ID WAR131205−54

Method: 032014.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 2

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1254	156493.31	140734.97	1000	−10.07	15		Averaged
Aroclor−1254(2)	120792.31	108441.16	1000	−10.23	15		Averaged
Aroclor−1254(3)	219122.53	201598.59	1000	−8	15		Averaged
Aroclor−1254(4)	154898.39	140097.65	1000	−9.56	15		Averaged
Aroclor−1254(5)	100188.93	90156.54	1000	−10.01	15		Averaged

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032014.S\
Data File : E9c2014.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 20 Mar 2014 08:04 (#1); 20 Mar 2014 8:04 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR131205-54|ICV|1|SVA|1|1254
Misc : |MIX[B]
ALS Vial : 14 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 21 11:57:36 2014
Quant Method : C:\msdchem\1\data\032014.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

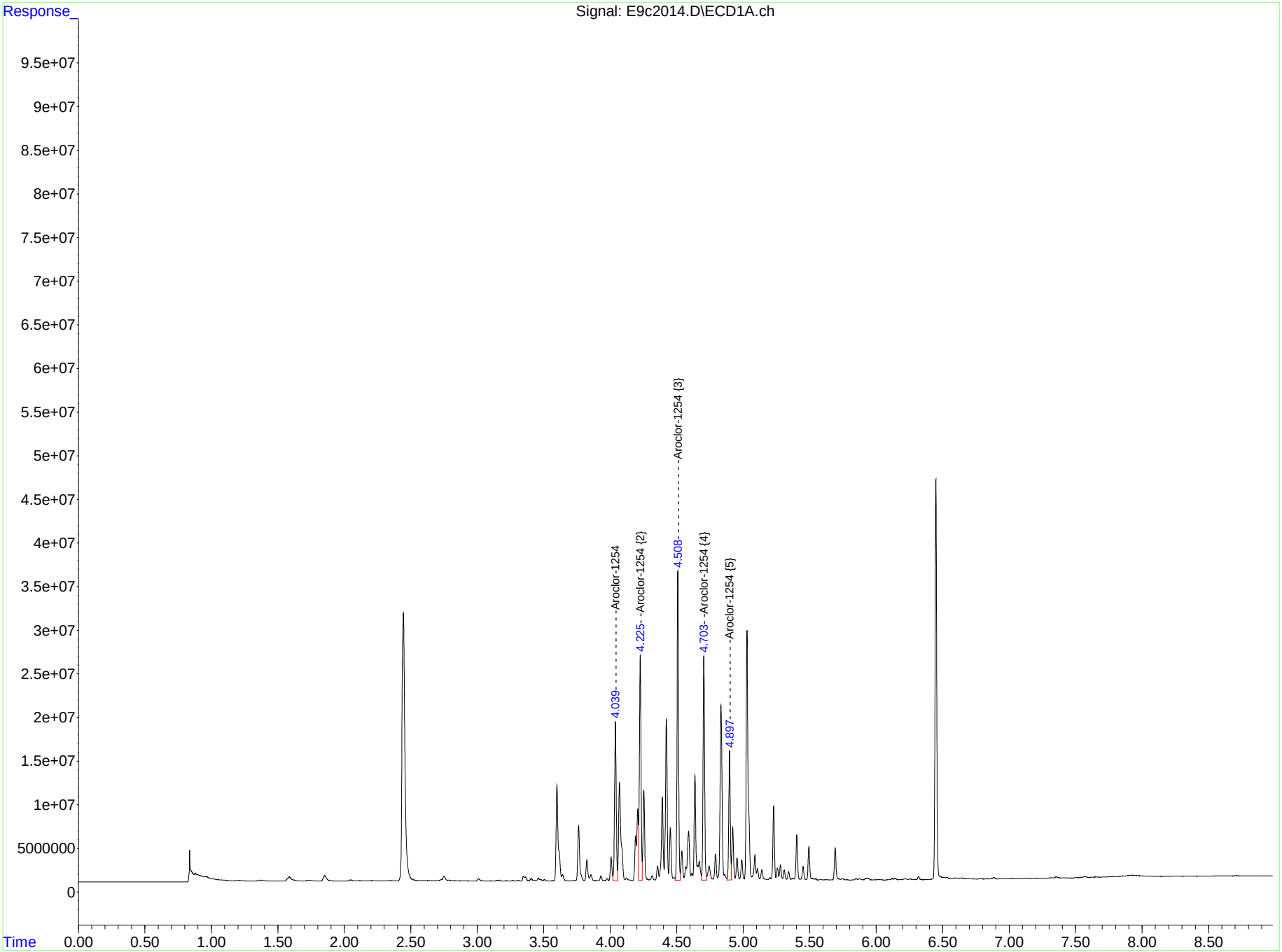
System Monitoring Compounds

Target Compounds

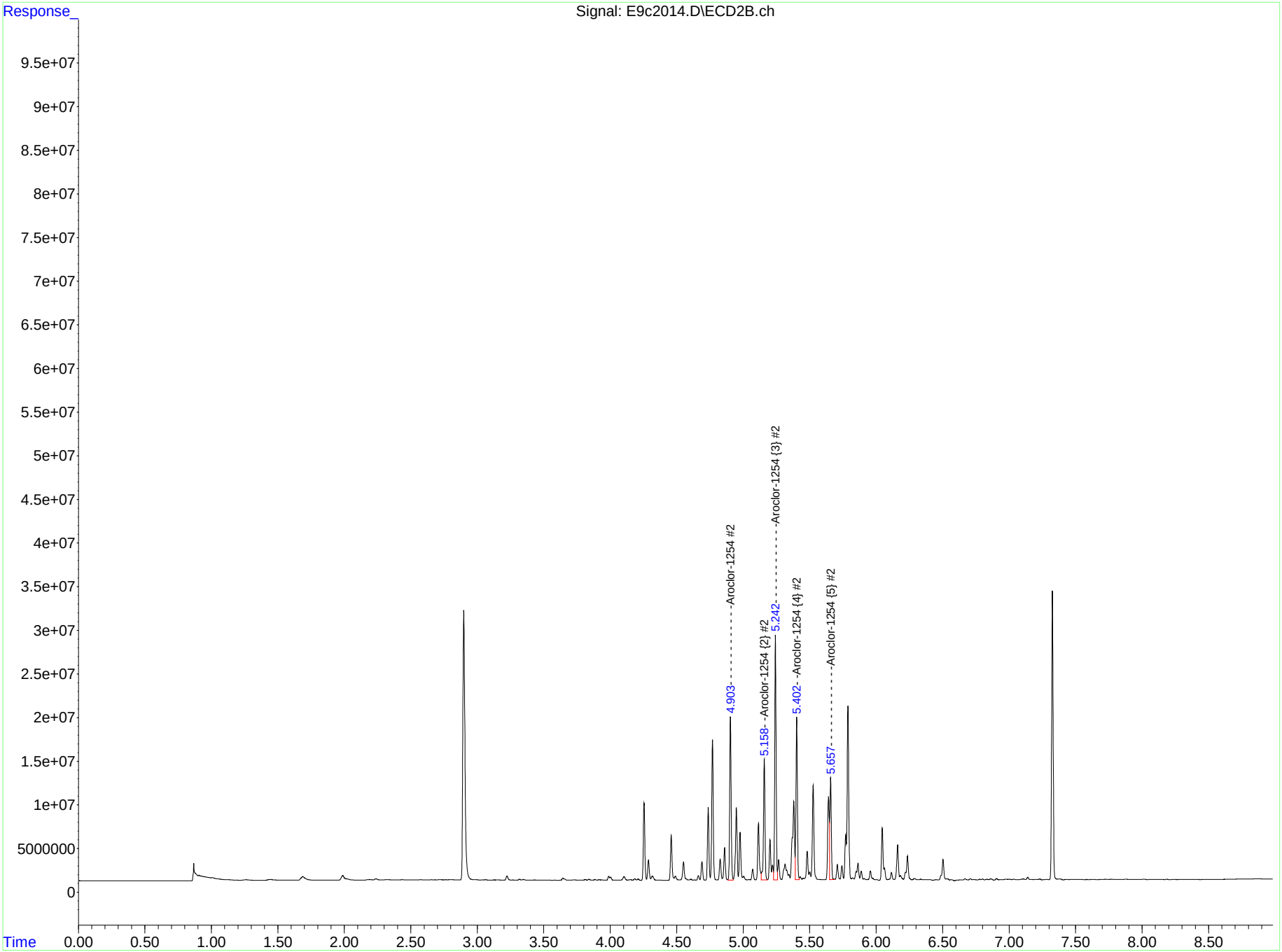
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1254	4.039	4.039	0.000	158985361	890.418	4.904	4.904	0.000	140734965	899.303
Aroclor-1254 {2}	4.226	4.226	0.000	221542634	906.753	5.158	5.158	0.000	108441163	897.749
Aroclor-1254 {3}	4.508	4.508	0.000	280179003	922.896	5.242	5.242	0.000	201598588	920.027
Aroclor-1254 {4}	4.704	4.704	0.000	213244960	917.703	5.402	5.402	0.000	140097654	904.449
Aroclor-1254 {5}	4.897	4.897	0.000	116800581	947.603	5.658	5.658	0.000	90156542	899.865
Sum Aroclor-1254				990752539	4585.374				681028912	4521.393
Average Aroclor-1254					917.075					904.279

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032014.S\
Data File : E9c2014.D



Data Path : C:\msdchem\1\data\032014.S\
Data File : E9c2014.D



Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_1

Injection Date: 23−MAR−14 08:42

Data File: 032314.S\E9c2303.D

Init. Cal. Date(s): NA

Lab Sample ID WAR140205−60

Method: 032314.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 1

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1016	164776.11	176133.32	1000	6.89	15		Averaged
Aroclor−1016(2)	215523.18	228689.78	1000	6.11	15		Averaged
Aroclor−1016(3)	140394.37	146470.81	1000	4.33	15		Averaged
Aroclor−1016(4)	81923.82	85014.78	1000	3.77	15		Averaged
Aroclor−1016(5)	108627.21	110856.61	1000	2.05	15		Averaged
Aroclor−1260	221102.62	221476.12	1000	0.17	15		Averaged
Aroclor−1260(2)	172225.32	170045.46	1000	−1.27	15		Averaged
Aroclor−1260(3)	185064.67	183544.75	1000	−0.82	15		Averaged
Aroclor−1260(4)	413421.54	415487.04	1000	0.5	15		Averaged
Aroclor−1260(5)	226909.01	222780.3	1000	−1.82	15		Averaged
4cmx(Surr)	4524225.69	4613354.15	100	1.97	15		Averaged
Decachlorobiphenyl(Surr)	3842027.97	3810862.33	100	−0.81	15		Averaged

Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_2

Injection Date: 23−MAR−14 08:42

Data File: 032314.S\E9c2303.D

Init. Cal. Date(s): NA

Lab Sample ID WAR140205−60

Method: 032314.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 2

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1016	102495.9	115224.13	1000	12.42	15		Averaged
Aroclor−1016(2)	137560.76	154492.7	1000	12.31	15		Averaged
Aroclor−1016(3)	91039.94	100341.56	1000	10.22	15		Averaged
Aroclor−1016(4)	56615.22	61749.99	1000	9.07	15		Averaged
Aroclor−1016(5)	74111.99	80313.5	1000	8.37	15		Averaged
Aroclor−1260	147615.64	155042.82	1000	5.03	15		Averaged
Aroclor−1260(2)	181648.2	190890.17	1000	5.09	15		Averaged
Aroclor−1260(3)	137306.64	143820.84	1000	4.74	15		Averaged
Aroclor−1260(4)	115486	121016.91	1000	4.79	15		Averaged
Aroclor−1260(5)	286344.83	302705.35	1000	5.71	15		Averaged
4cmx(Surr)	3062596.53	3475715.88	100	13.49	15		Averaged
Decachlorobiphenyl(Surr)	2487202.02	2559684.33	100	2.91	15		Averaged

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2303.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 08:42 (#1); 23 Mar 2014 8:42 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR140205-60|CCV|1|SVA|1|1660
Misc : |MIX[A]
ALS Vial : 3 Sample Multiplier: 1

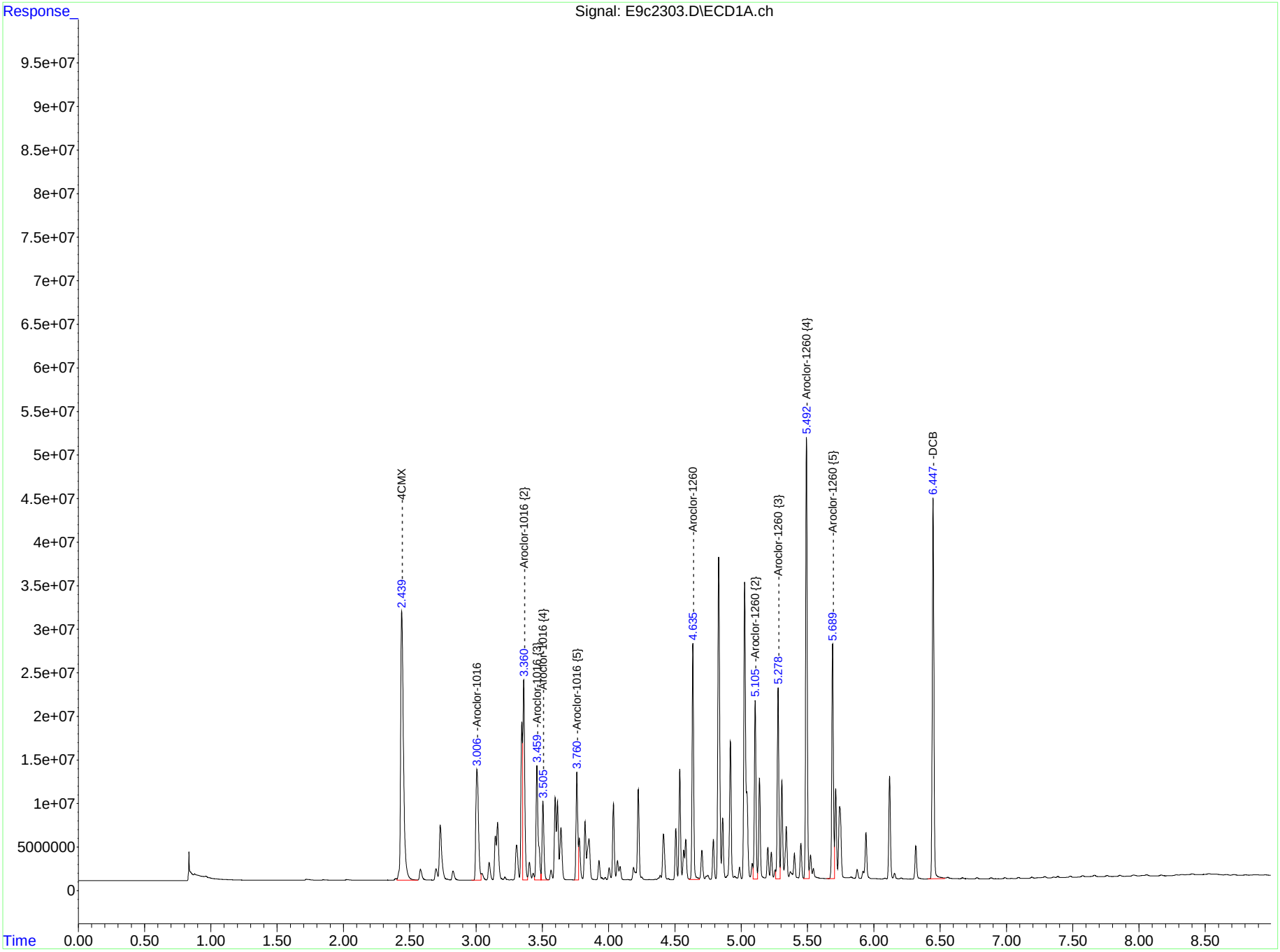
Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:04 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

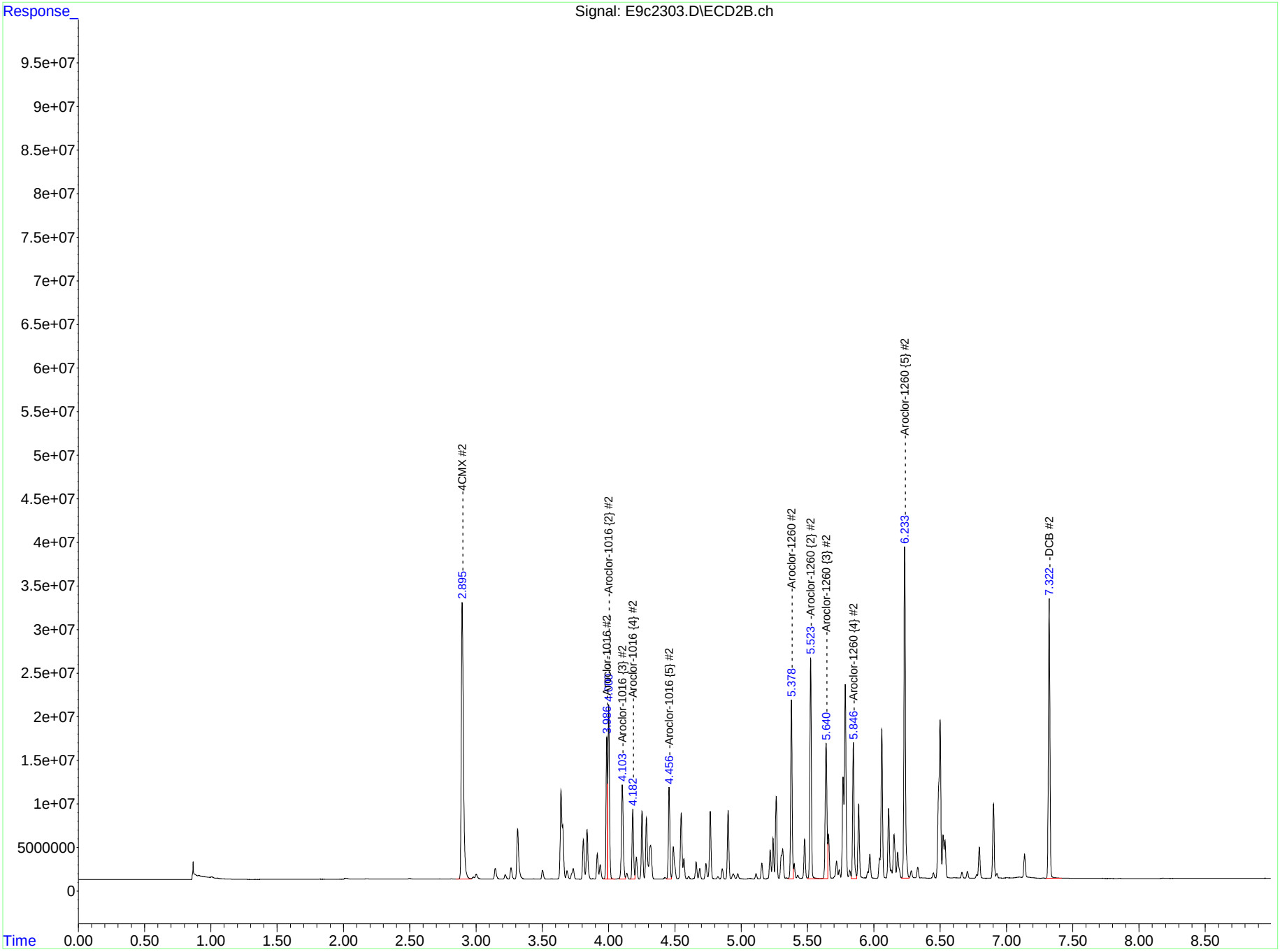
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.439	0.000	461335415	101.970	2.896	2.896	0.000	347571588	113.489
DCB	6.447	6.447	0.000	381086233	99.189	7.323	7.323	0.000	255968433	102.914
Target Compounds										
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1016	3.007	3.007	0.000	176133316	1068.925	3.986	3.986	0.000	115224132	1124.183
Aroclor-1016 {2}	3.360	3.360	0.000	228689781	1061.091	4.001	4.001	0.000	154492695	1123.087
Aroclor-1016 {3}	3.459	3.459	0.000	146470808	1043.281	4.103	4.103	0.000	100341564	1102.171
Aroclor-1016 {4}	3.505	3.505	0.000	85014776	1037.730	4.182	4.182	0.000	61749991	1090.696
Aroclor-1016 {5}	3.760	3.760	0.000	110856608	1020.523	4.456	4.456	0.000	80313500	1083.678
Sum Aroclor-1016				747165289	5231.551				512121881	5523.814
Average Aroclor-1016					1046.310					1104.763
Aroclor-1260	4.635	4.635	0.000	221476118	1001.689	5.379	5.379	0.000	155042815	1050.314
Aroclor-1260 {2}	5.105	5.105	0.000	170045455	987.343	5.524	5.524	0.000	190890166	1050.878
Aroclor-1260 {3}	5.278	5.278	0.000	183544754	991.787	5.641	5.641	0.000	143820844	1047.443
Aroclor-1260 {4}	5.492	5.492	0.000	415487036	1004.996	5.846	5.846	0.000	121016912	1047.893
Aroclor-1260 {5}	5.689	5.689	0.000	222780302	981.805	6.233	6.233	0.000	302705347	1057.136
Sum Aroclor-1260				1213333664	4967.620				913476083	5253.664
Average Aroclor-1260					993.524					1050.733

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2303.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2303.D



Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_1

Injection Date: 23−MAR−14 08:53

Data File: 032314.S\E9c2304.D

Init. Cal. Date(s): NA

Lab Sample ID WAR131205−54

Method: 032314.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 1

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1254	178551.3	158551.4	1000	−11.2	15		Averaged
Aroclor−1254(2)	244325.1	217661.82	1000	−10.91	15		Averaged
Aroclor−1254(3)	303586.73	274961.69	1000	−9.43	15		Averaged
Aroclor−1254(4)	232368.07	208930.1	1000	−10.09	15		Averaged
Aroclor−1254(5)	123259.03	110591.89	1000	−10.28	15		Averaged

Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_2

Injection Date: 23−MAR−14 08:53

Data File: 032314.S\E9c2304.D

Init. Cal. Date(s): NA

Lab Sample ID WAR131205−54

Method: 032314.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 2

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1254	156493.31	141504.76	1000	−9.58	15		Averaged
Aroclor−1254(2)	120792.31	109408.87	1000	−9.42	15		Averaged
Aroclor−1254(3)	219122.53	201868.75	1000	−7.87	15		Averaged
Aroclor−1254(4)	154898.39	142737.14	1000	−7.85	15		Averaged
Aroclor−1254(5)	100188.93	90013.92	1000	−10.16	15		Averaged

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2304.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 08:53 (#1); 23 Mar 2014 8:53 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR131205-54|CCV|1|SVA|1|1254
Misc : |MIX[B]
ALS Vial : 4 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:07 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

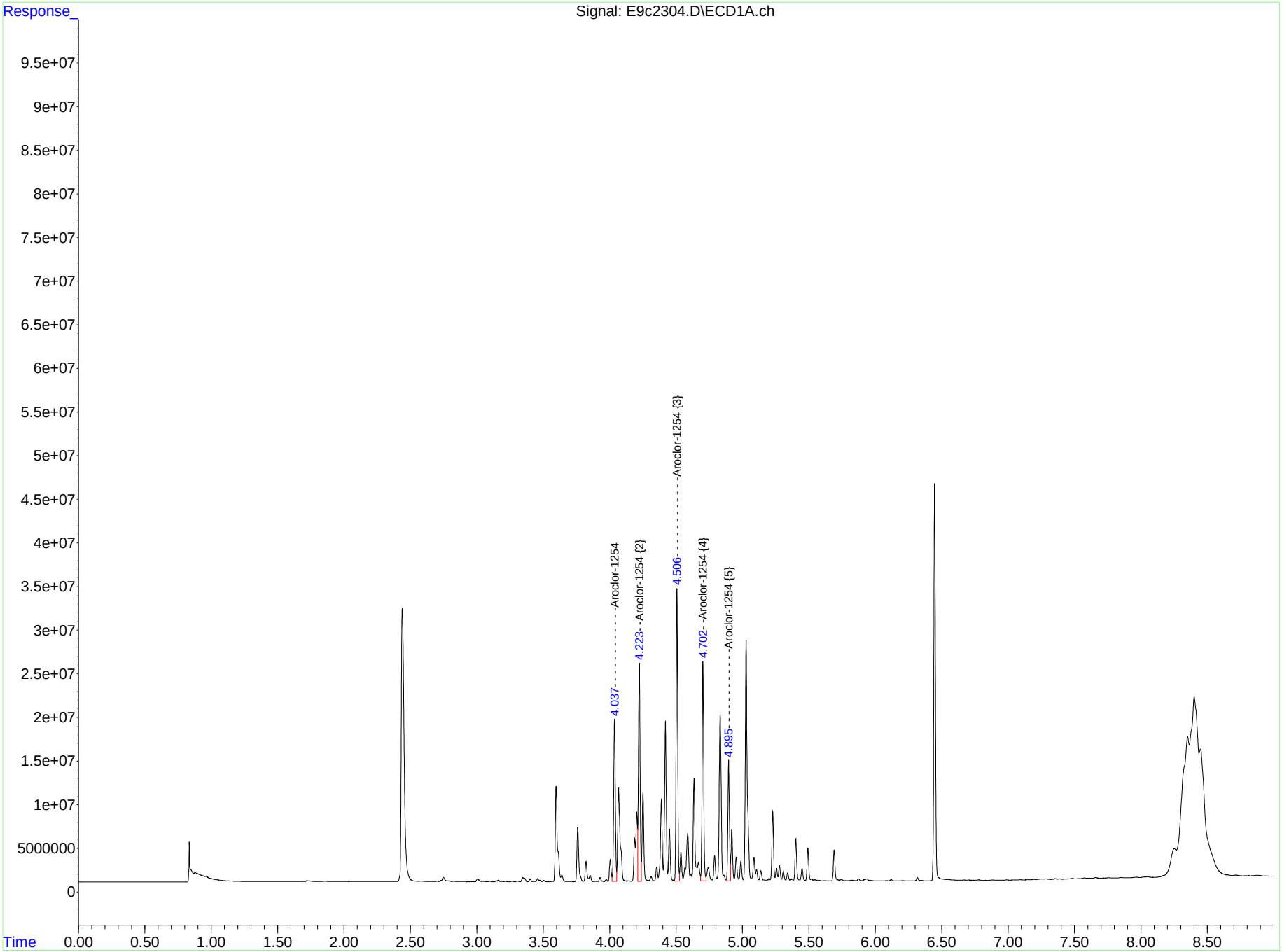
System Monitoring Compounds

Target Compounds

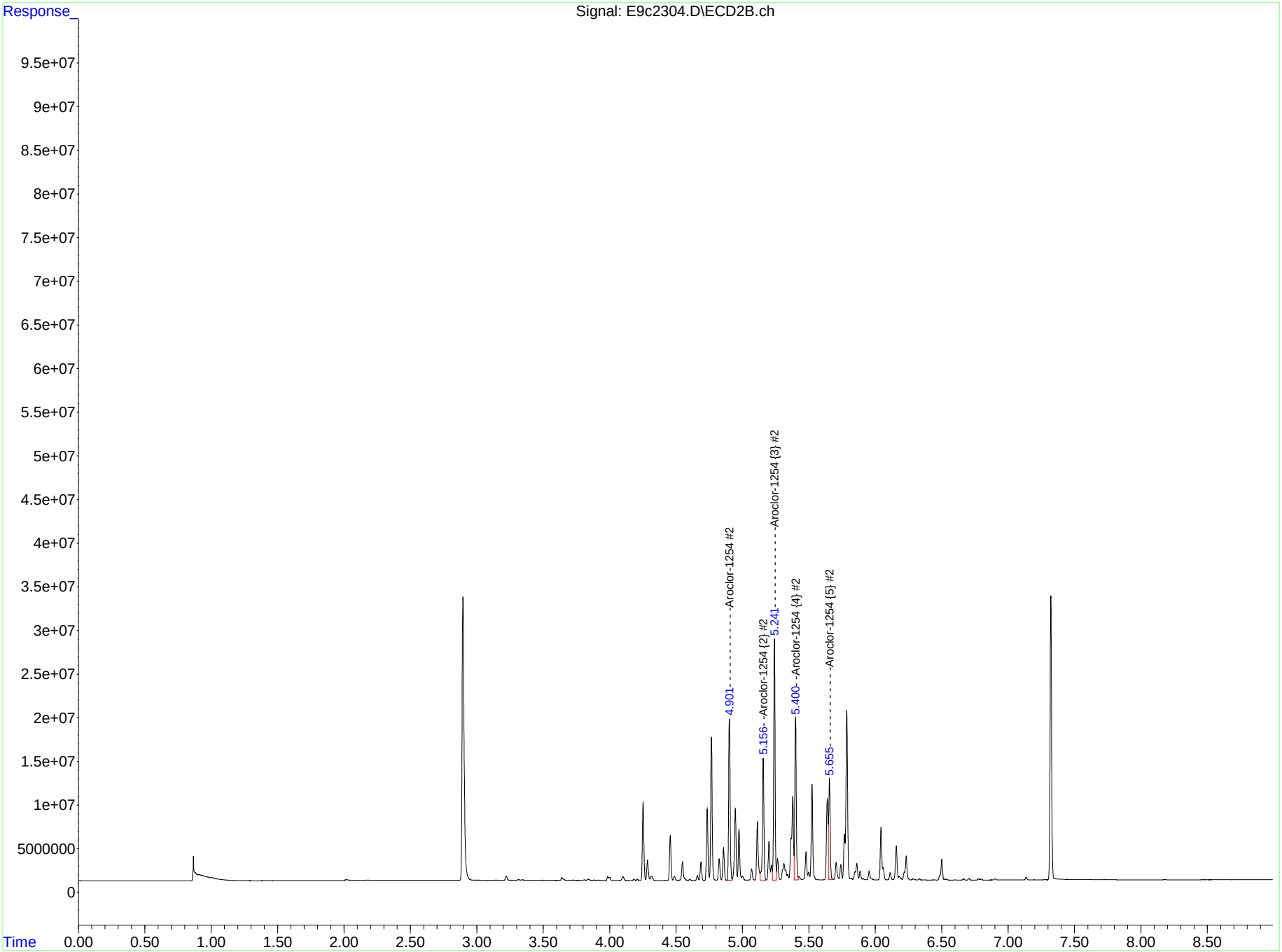
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1254	4.037	4.037	0.000	158551399	887.988	4.902	4.902	0.000	141504763	904.222
Aroclor-1254 {2}	4.224	4.224	0.000	217661818	890.870	5.156	5.156	0.000	109408866	905.760
Aroclor-1254 {3}	4.507	4.507	0.000	274961689	905.711	5.241	5.241	0.000	201868754	921.260
Aroclor-1254 {4}	4.702	4.702	0.000	208930104	899.134	5.400	5.400	0.000	142737138	921.489
Aroclor-1254 {5}	4.896	4.896	0.000	110591893	897.232	5.655	5.655	0.000	90013917	898.442
Sum Aroclor-1254				970696902	4480.934				685533437	4551.173
Average Aroclor-1254					896.187					910.235

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2304.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2304.D



Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2305.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 09:04 (#1); 23 Mar 2014 9:04 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR131111-42|CCV|1|SVA|1|1242
Misc : |MIX[D]
ALS Vial : 5 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:10 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

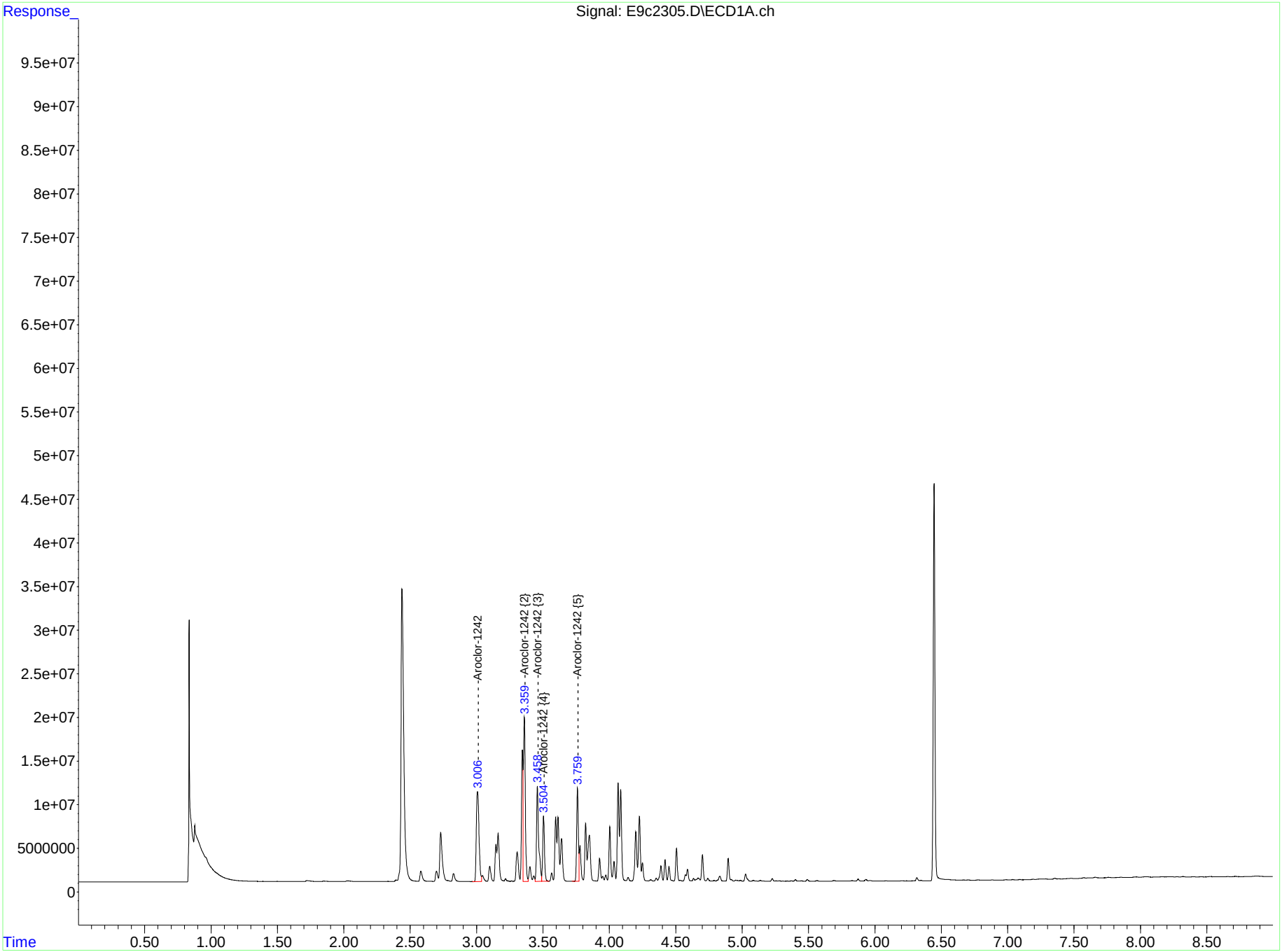
System Monitoring Compounds

Target Compounds

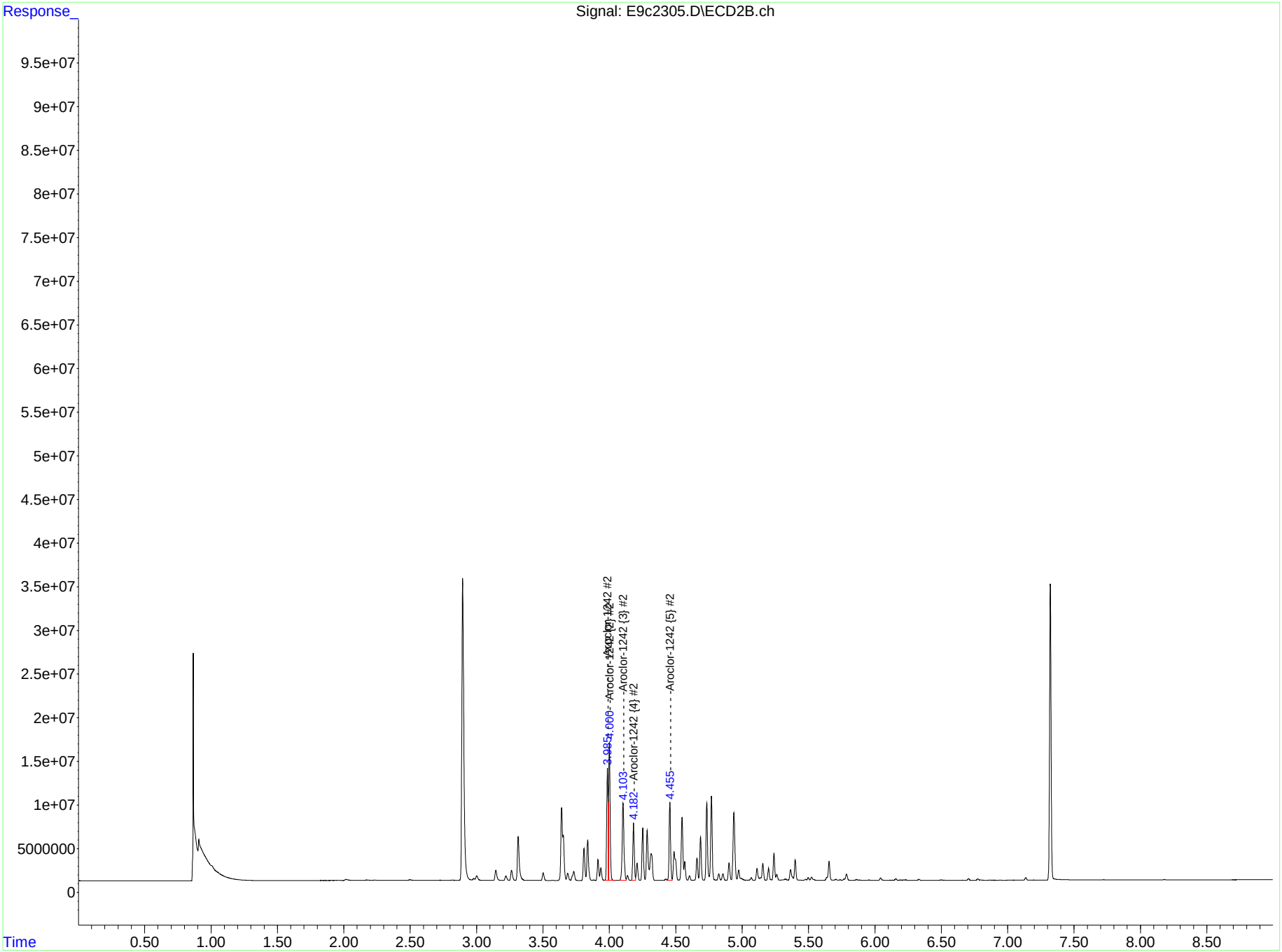
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1242	3.007	3.007	0.000	145343829	953.094	3.986	3.986	0.000	92617470	972.399
Aroclor-1242 {2}	3.360	3.360	0.000	184566487	959.017	4.000	4.000	0.000	124073362	982.925
Aroclor-1242 {3}	3.458	3.458	0.000	120496146	937.334	4.103	4.103	0.000	82225032	951.931
Aroclor-1242 {4}	3.504	3.504	0.000	69952009	943.184	4.182	4.182	0.000	50297789	946.964
Aroclor-1242 {5}	3.760	3.760	0.000	93376453	932.894	4.456	4.456	0.000	67411150	950.878
Sum Aroclor-1242				613734924	4725.522				416624804	4805.097
Average Aroclor-1242					945.104					961.019

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2305.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2305.D



Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2306.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 09:16 (#1); 23 Mar 2014 9:16 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR131230-48|CCV|1|SVA|1|1248
Misc : |MIX[E]
ALS Vial : 6 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:13 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

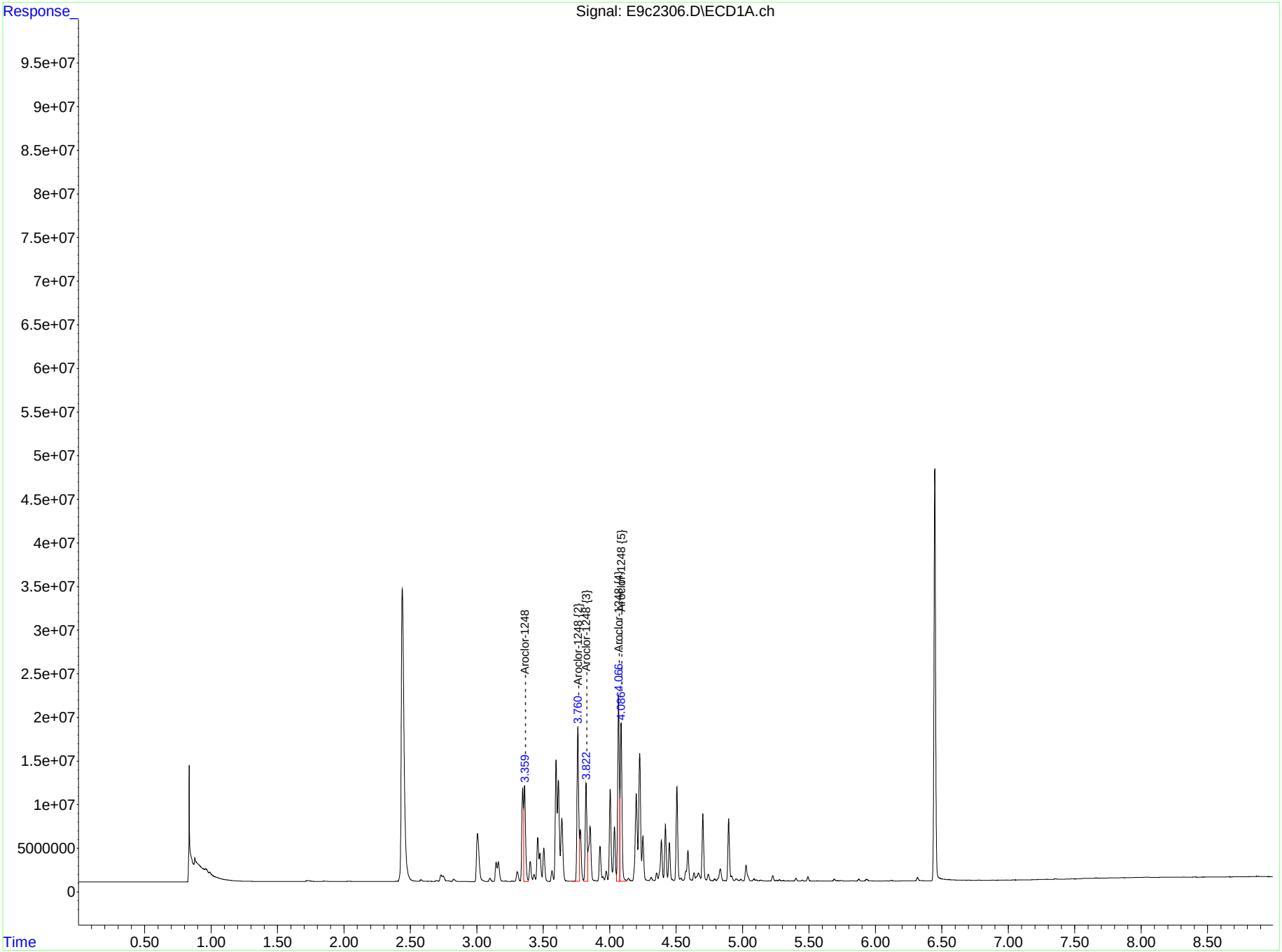
System Monitoring Compounds

Target Compounds

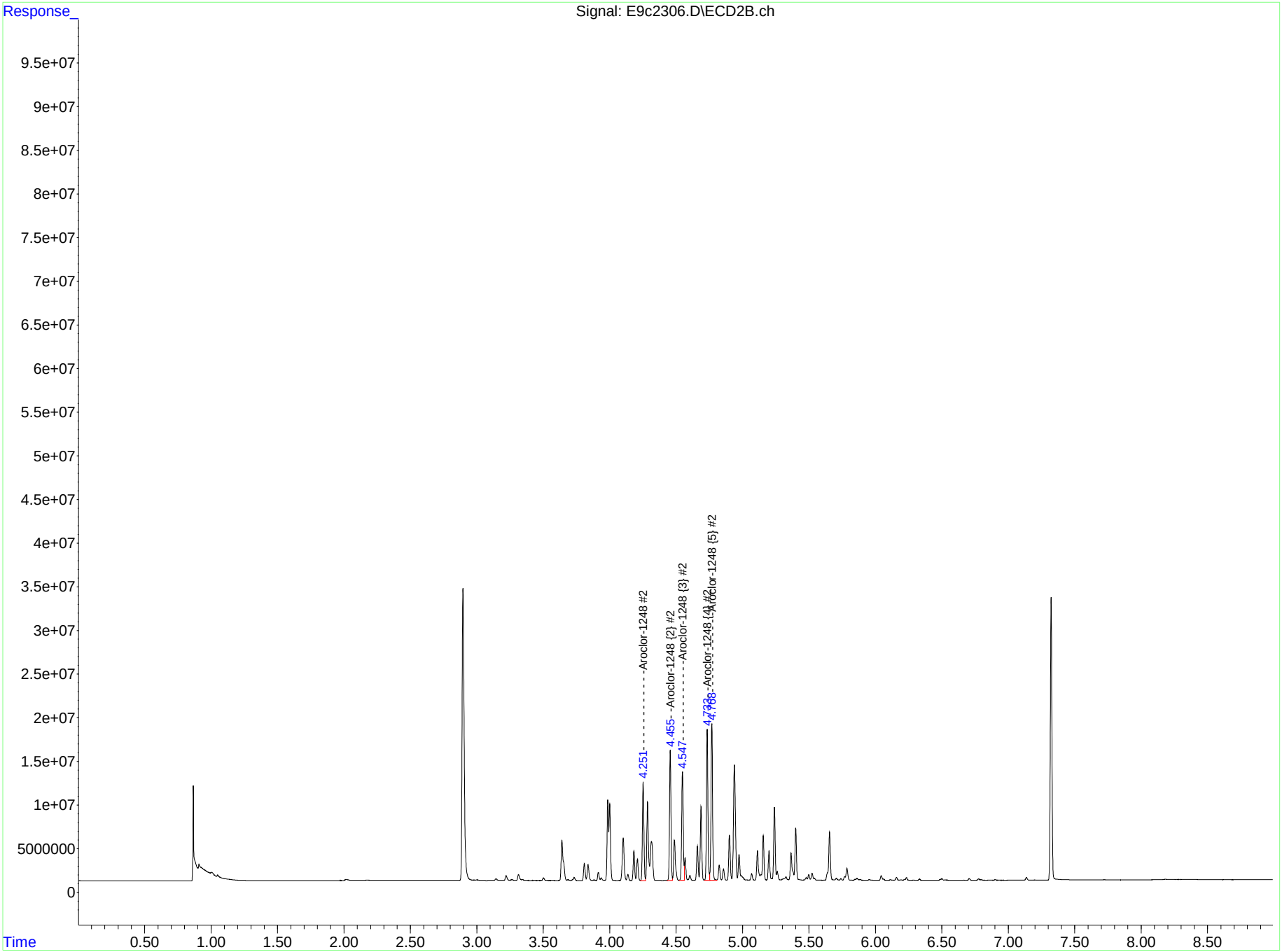
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1248	3.359	3.359	0.000	101422562	891.972	4.252	4.252	0.000	88156020	913.116
Aroclor-1248 {2}	3.760	3.760	0.000	156849192	908.357	4.456	4.456	0.000	111972147	930.005
Aroclor-1248 {3}	3.822	3.822	0.000	100100950	902.441	4.548	4.548	0.000	101374417	924.755
Aroclor-1248 {4}	4.067	4.067	0.000	181204923	900.663	4.734	4.734	0.000	128235522	922.263
Aroclor-1248 {5}	4.086	4.086	0.000	160556436	903.071	4.769	4.769	0.000	143562387	926.317
Sum Aroclor-1248				700134063	4506.504				573300493	4616.456
Average Aroclor-1248					901.301					923.291

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2306.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2306.D



Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2309.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 09:50 (#1); 23 Mar 2014 9:50 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR140208-21|CCV|1|SVA|1|1221
Misc : |MIX[J]
ALS Vial : 9 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:22 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

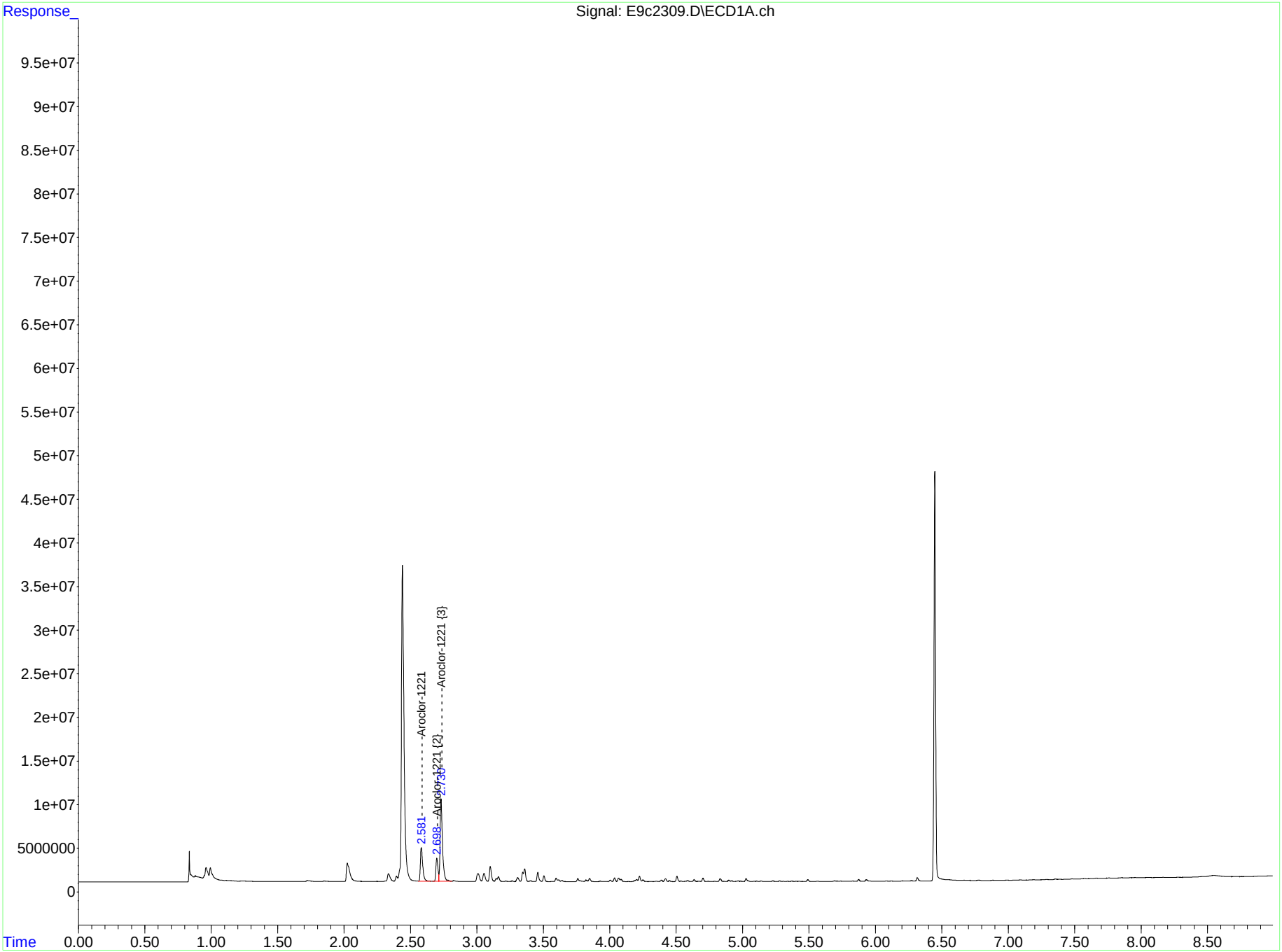
System Monitoring Compounds

Target Compounds

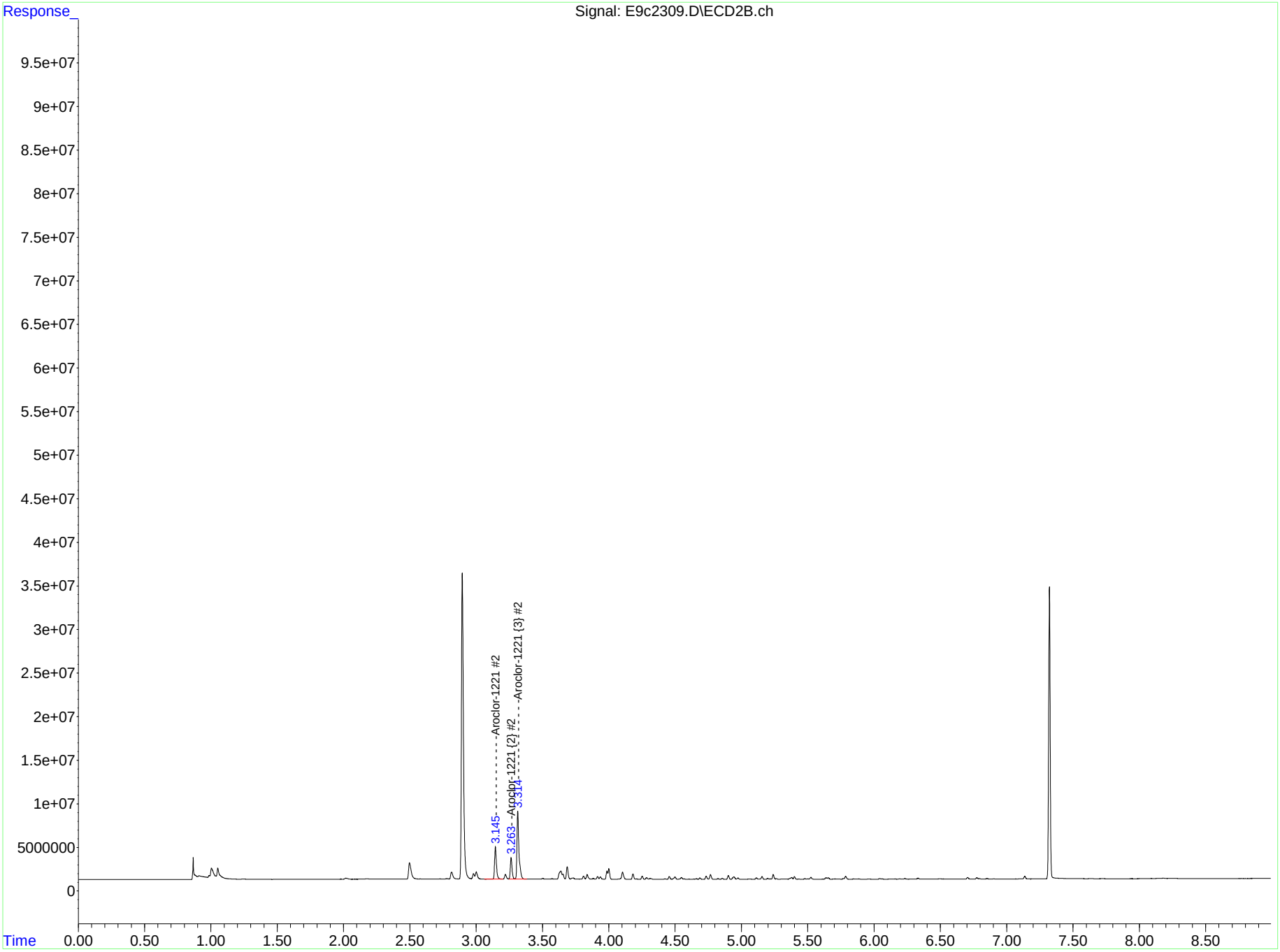
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1221	2.582	2.582	0.000	47554054	870.505	3.145	3.145	0.000	35340435	869.331
Aroclor-1221 {2}	2.698	2.698	0.000	27626554	881.164	3.264	3.264	0.000	22366230	866.982
Aroclor-1221 {3}	2.730	2.730	0.000	117300539	869.856	3.314	3.314	0.000	79997830	871.460
Sum Aroclor-1221				192481147	2621.526				137704496	2607.773
Average Aroclor-1221					873.842					869.258

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2309.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2309.D



Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2310.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 10:01 (#1); 23 Mar 2014 10:01 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR140208-32|CCV|1|SVA|1|1232
Misc : |MIX[F]
ALS Vial : 10 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:25 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

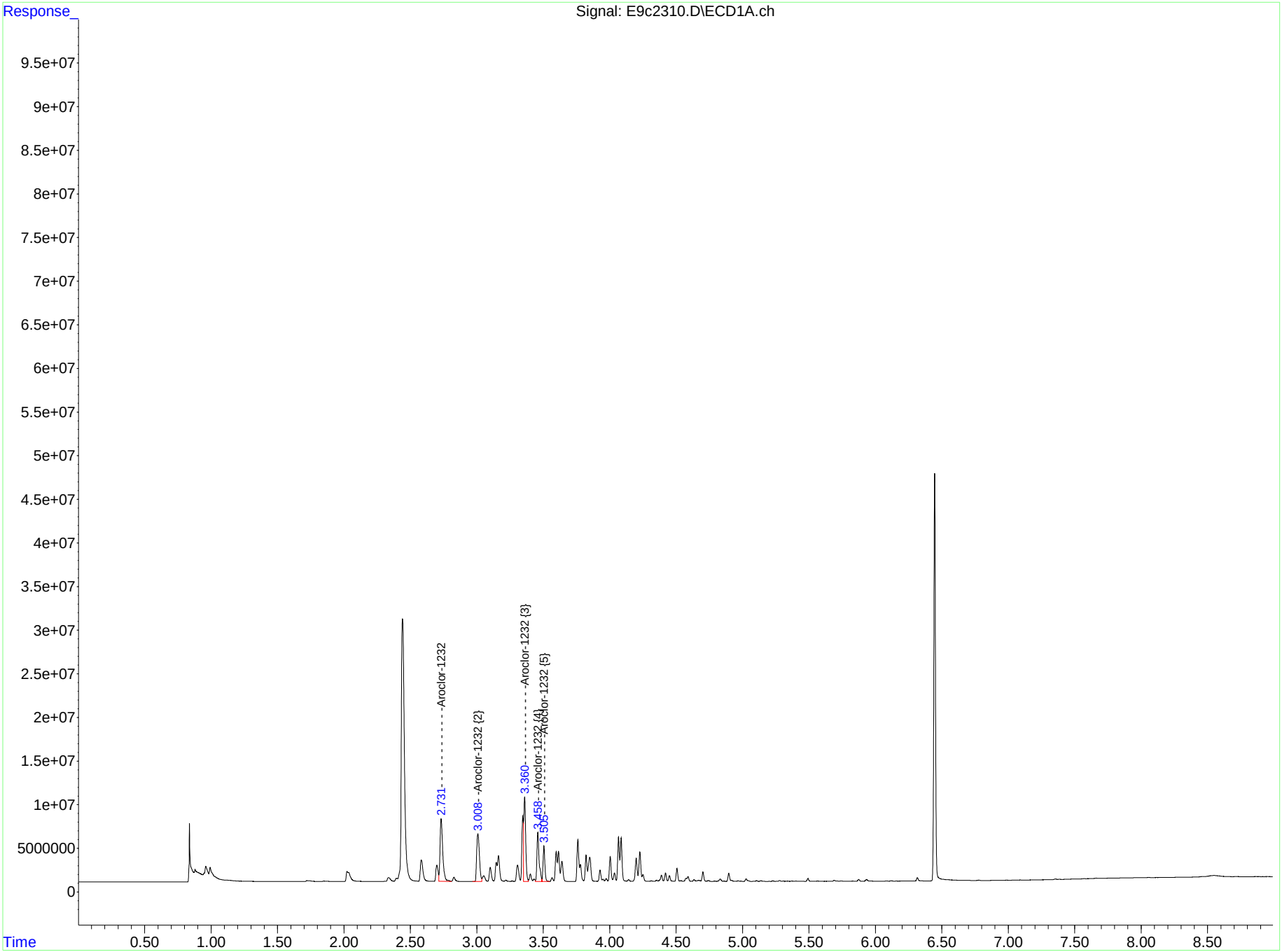
System Monitoring Compounds

Target Compounds

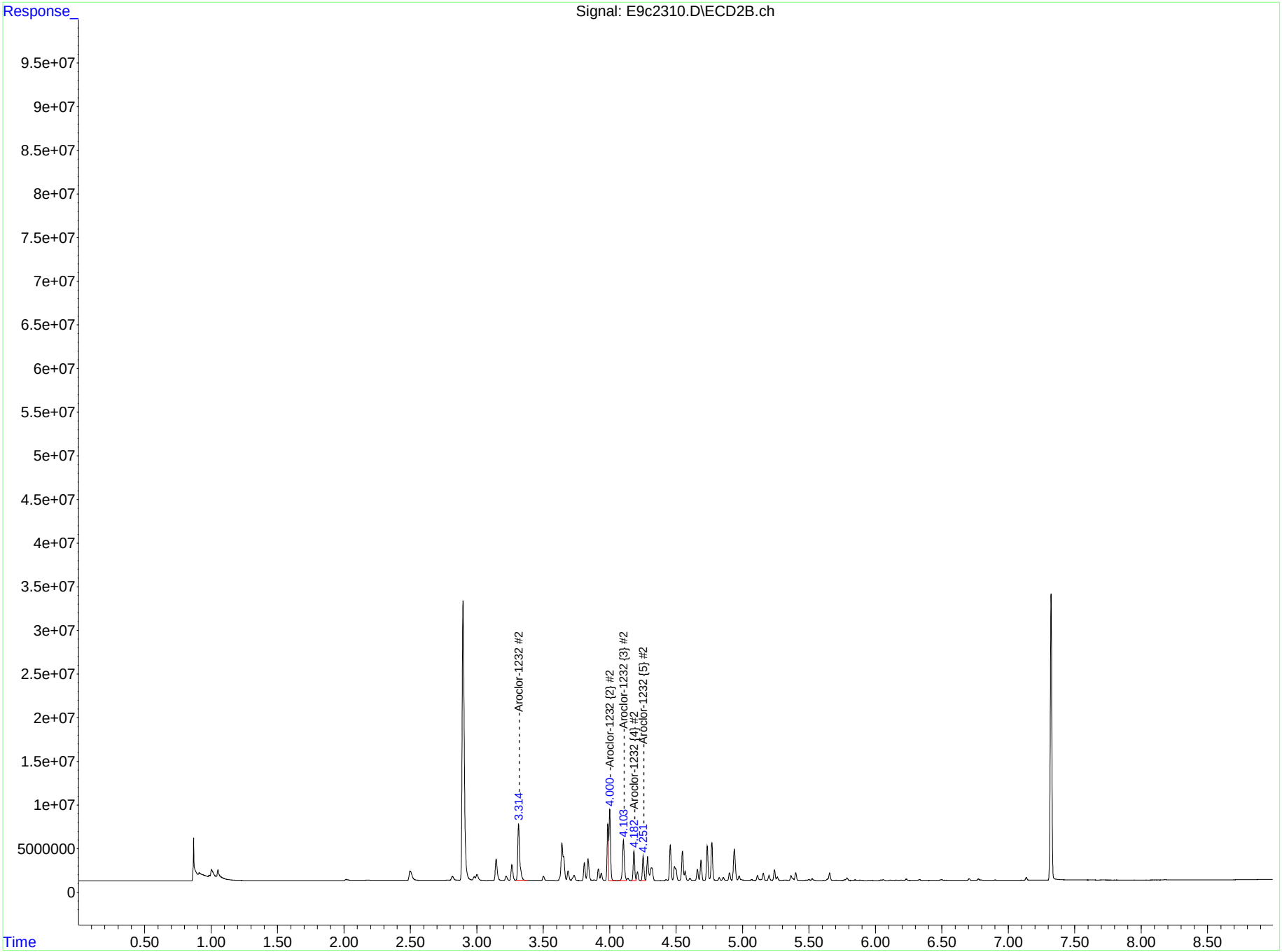
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1232	2.731	2.731	0.000	100854165	952.749	3.314	3.314	0.000	67098904	967.459
Aroclor-1232 {2}	3.008	3.008	0.000	77719881	955.960	4.001	4.001	0.000	64193685	965.102
Aroclor-1232 {3}	3.360	3.360	0.000	98974670	951.952	4.103	4.103	0.000	43856074	973.360
Aroclor-1232 {4}	3.459	3.459	0.000	63848783	951.555	4.182	4.182	0.000	27016161	975.791
Aroclor-1232 {5}	3.505	3.505	0.000	37729224	950.025	4.252	4.252	0.000	22329897	976.456
Sum Aroclor-1232				379126723	4762.241				224494721	4858.168
Average Aroclor-1232					952.448					971.634

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2310.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2310.D



Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_1

Injection Date: 23−MAR−14 12:41

Data File: 032314.S\E9c2322.D

Init. Cal. Date(s): NA

Lab Sample ID WAR140205−60

Method: 032314.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 1

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1016	164776.11	187208.46	1000	13.61	15		Averaged
Aroclor−1016(2)	215523.18	248234.62	1000	15.18	15	*	Averaged
Aroclor−1016(3)	140394.37	156104.39	1000	11.19	15		Averaged
Aroclor−1016(4)	81923.82	91585.09	1000	11.79	15		Averaged
Aroclor−1016(5)	108627.21	118388.37	1000	8.99	15		Averaged
Aroclor−1260	221102.62	237587.65	1000	7.46	15		Averaged
Aroclor−1260(2)	172225.32	181443.25	1000	5.35	15		Averaged
Aroclor−1260(3)	185064.67	194972.73	1000	5.35	15		Averaged
Aroclor−1260(4)	413421.54	446798.71	1000	8.07	15		Averaged
Aroclor−1260(5)	226909.01	241155.27	1000	6.28	15		Averaged
4cmx(Surr)	4524225.69	4886129.59	100	8	15		Averaged
Decachlorobiphenyl(Surr)	3842027.97	4053596.72	100	5.51	15		Averaged

Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_2

Injection Date: 23−MAR−14 12:41

Data File: 032314.S\E9c2322.D

Init. Cal. Date(s): NA

Lab Sample ID WAR140205−60

Method: 032314.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 2

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1016	102495.9	115928.66	1000	13.11	15		Averaged
Aroclor−1016(2)	137560.76	155927.1	1000	13.35	15		Averaged
Aroclor−1016(3)	91039.94	100798	1000	10.72	15		Averaged
Aroclor−1016(4)	56615.22	62110.04	1000	9.71	15		Averaged
Aroclor−1016(5)	74111.99	80859.82	1000	9.1	15		Averaged
Aroclor−1260	147615.64	154041.14	1000	4.35	15		Averaged
Aroclor−1260(2)	181648.2	190784.05	1000	5.03	15		Averaged
Aroclor−1260(3)	137306.64	143148.33	1000	4.25	15		Averaged
Aroclor−1260(4)	115486	119546.84	1000	3.52	15		Averaged
Aroclor−1260(5)	286344.83	298140.66	1000	4.12	15		Averaged
4cmx(Surr)	3062596.53	3456894.34	100	12.87	15		Averaged
Decachlorobiphenyl(Surr)	2487202.02	2543900.8	100	2.28	15		Averaged

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2322.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 12:41 (#1); 23 Mar 2014 12:41 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR140205-60|CCV|1|SVA|1|1660
Misc : |MIX[A]
ALS Vial : 22 Sample Multiplier: 1

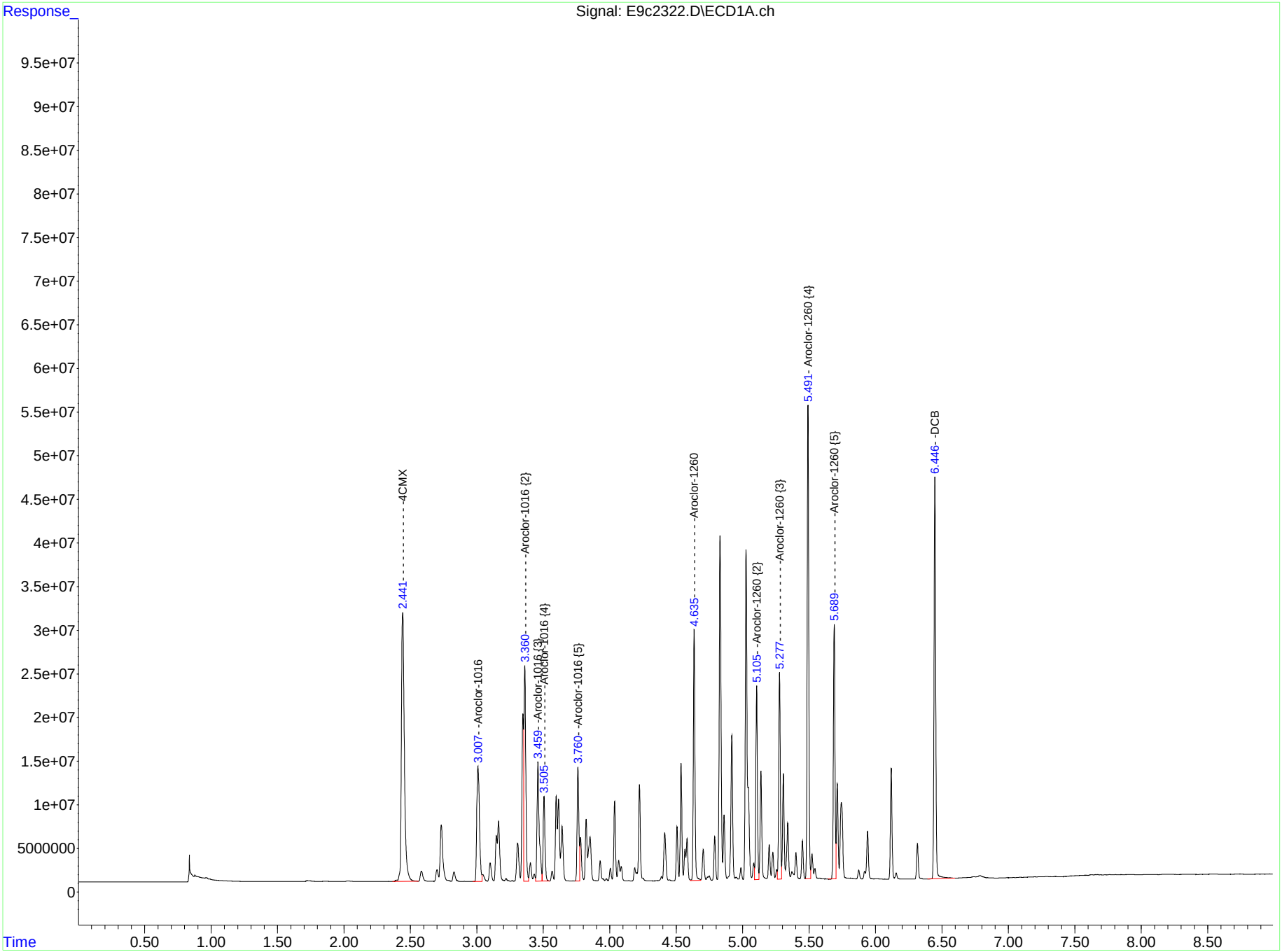
Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 13:23:33 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

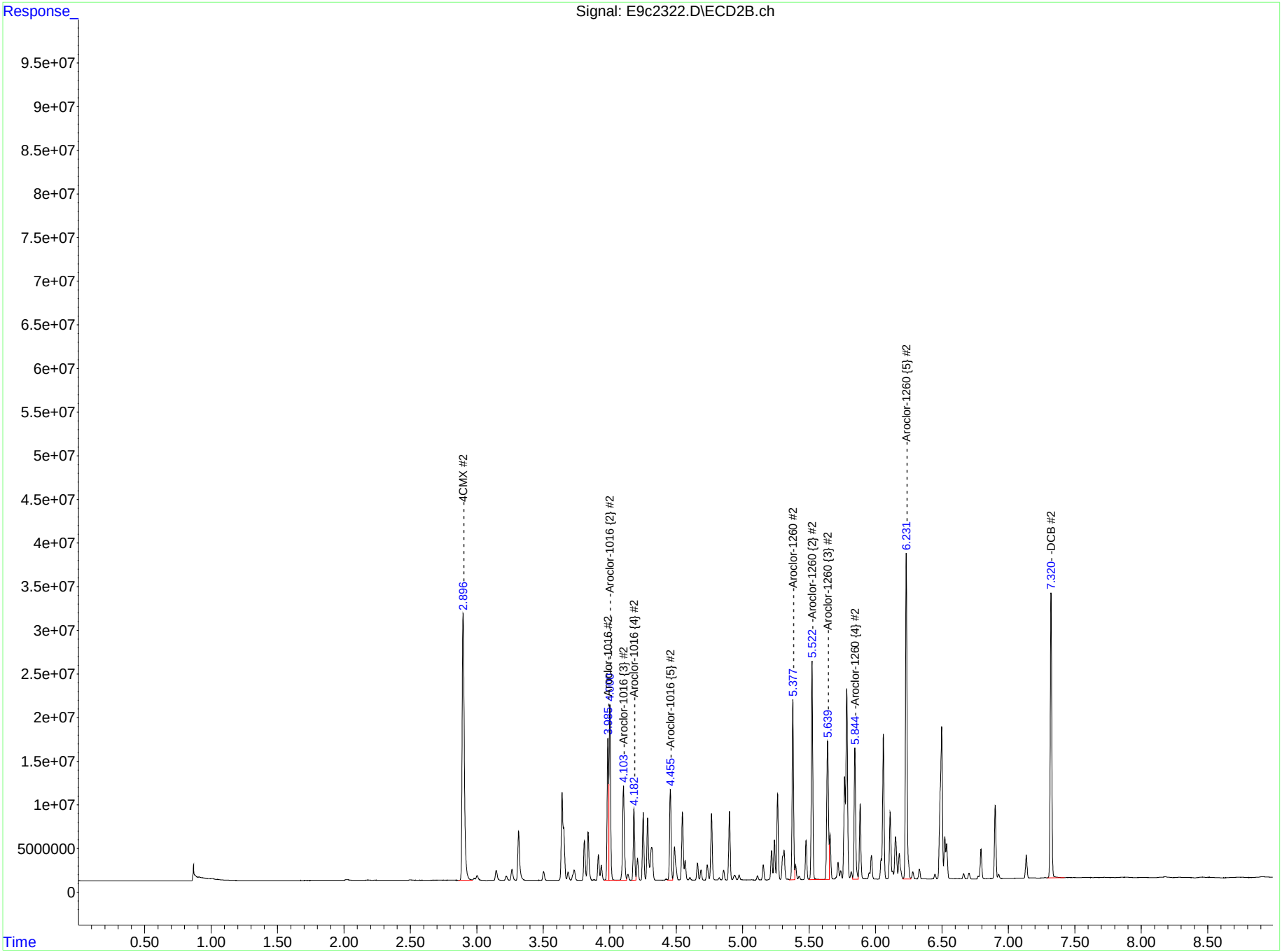
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.442	0.003	488612959	107.999	2.896	2.896	0.000	345689434	112.875
DCB	6.447	6.447	0.000	405359672	105.507	7.323	7.321	-0.002	254390080	102.280
Target Compounds										
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1016	3.007	3.008	0.001	187208459	1136.138	3.986	3.986	0.000	115928658	1131.057
Aroclor-1016 {2}	3.360	3.360	0.000	248234617	1151.777	4.001	4.001	0.000	155927096	1133.514
Aroclor-1016 {3}	3.459	3.459	0.000	156104388	1111.899	4.103	4.103	0.000	100798002	1107.184
Aroclor-1016 {4}	3.505	3.505	0.000	91585091	1117.930	4.182	4.182	0.000	62110039	1097.056
Aroclor-1016 {5}	3.760	3.761	0.001	118388374	1089.859	4.456	4.456	0.000	80859818	1091.049
Sum Aroclor-1016				801520929	5607.604				515623613	5559.860
Average Aroclor-1016					1121.521					1111.972
Aroclor-1260	4.635	4.635	0.000	237587646	1074.558	5.379	5.378	-0.001	154041140	1043.529
Aroclor-1260 {2}	5.105	5.106	0.001	181443251	1053.523	5.524	5.522	-0.002	190784053	1050.294
Aroclor-1260 {3}	5.278	5.278	0.000	194972729	1053.538	5.641	5.640	-0.001	143148333	1042.545
Aroclor-1260 {4}	5.492	5.492	0.000	446798711	1080.734	5.846	5.845	-0.001	119546842	1035.163
Aroclor-1260 {5}	5.689	5.689	0.000	241155270	1062.784	6.233	6.231	-0.002	298140660	1041.194
Sum Aroclor-1260				1301957606	5325.137				905661028	5212.725
Average Aroclor-1260					1065.027					1042.545

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2322.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2322.D



Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_1

Injection Date: 23−MAR−14 15:28

Data File: 032314.S\E9c2334.D

Init. Cal. Date(s): NA

Lab Sample ID WAR140205−60

Method: 032314.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 1

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1016	164776.11	187252.86	1000	13.64	15		Averaged
Aroclor−1016(2)	215523.18	249733.79	1000	15.87	15	*	Averaged
Aroclor−1016(3)	140394.37	157474.33	1000	12.17	15		Averaged
Aroclor−1016(4)	81923.82	92354	1000	12.73	15		Averaged
Aroclor−1016(5)	108627.21	118492.98	1000	9.08	15		Averaged
Aroclor−1260	221102.62	234239.37	1000	5.94	15		Averaged
Aroclor−1260(2)	172225.32	179126.22	1000	4.01	15		Averaged
Aroclor−1260(3)	185064.67	191766.68	1000	3.62	15		Averaged
Aroclor−1260(4)	413421.54	439853.16	1000	6.39	15		Averaged
Aroclor−1260(5)	226909.01	237259.58	1000	4.56	15		Averaged
4cmx(Surr)	4524225.69	4924983.82	100	8.86	15		Averaged
Decachlorobiphenyl(Surr)	3842027.97	3991507.49	100	3.89	15		Averaged

Continuing Calibration Summary

Client SDG: 2014−2961

Instrument ID: ECD9A.I_2

Injection Date: 23−MAR−14 15:28

Data File: 032314.S\E9c2334.D

Init. Cal. Date(s): NA

Lab Sample ID WAR140205−60

Method: 032314.S\ECD9_8082_031714.m

Column ID: RTX−CLPEST 2

Quant Type: ESTD

Compound	AVECF / Amount	CF CCV	Nominal CCV	%D / %Drift	Max	Drift Q	Curve Type
Aroclor−1016	102495.9	115573.95	1000	12.76	15		Averaged
Aroclor−1016(2)	137560.76	157504.81	1000	14.5	15		Averaged
Aroclor−1016(3)	91039.94	100903.39	1000	10.83	15		Averaged
Aroclor−1016(4)	56615.22	62541.73	1000	10.47	15		Averaged
Aroclor−1016(5)	74111.99	80573.28	1000	8.72	15		Averaged
Aroclor−1260	147615.64	151791.22	1000	2.83	15		Averaged
Aroclor−1260(2)	181648.2	189033.3	1000	4.07	15		Averaged
Aroclor−1260(3)	137306.64	142294.66	1000	3.63	15		Averaged
Aroclor−1260(4)	115486	118643.73	1000	2.73	15		Averaged
Aroclor−1260(5)	286344.83	299171.93	1000	4.48	15		Averaged
4cmx(Surr)	3062596.53	3466297.68	100	13.18	15		Averaged
Decachlorobiphenyl(Surr)	2487202.02	2484975.51	100	−0.09	15		Averaged

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2334.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 15:28 (#1); 23 Mar 2014 15:28 (#2)
Operator : YS1 InstName : ECD9
Sample : |WAR140205-60|CCV|1|SVA|1|1660
Misc : MIX[A]
ALS Vial : 34 Sample Multiplier: 1

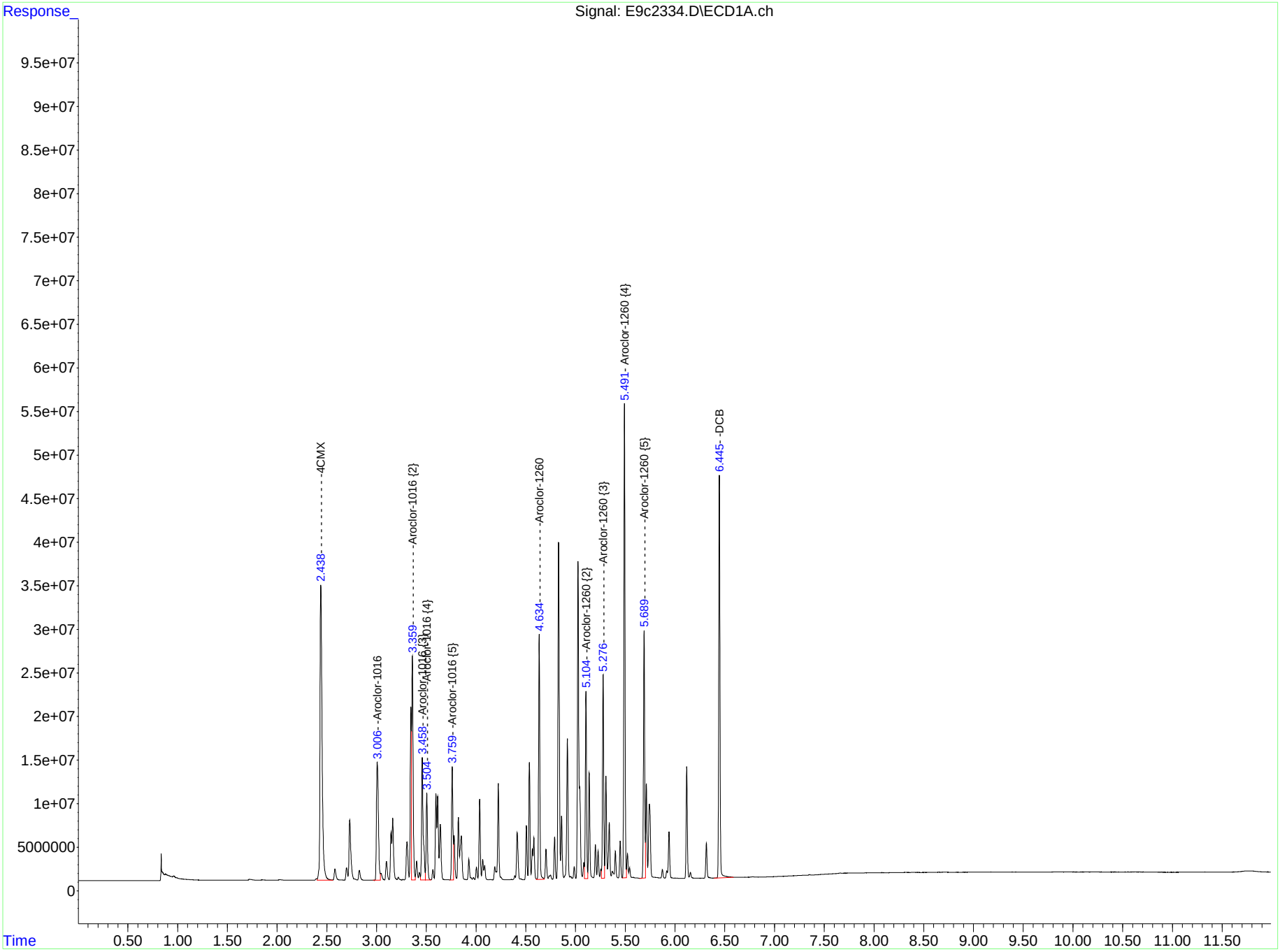
Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 24 06:19:57 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

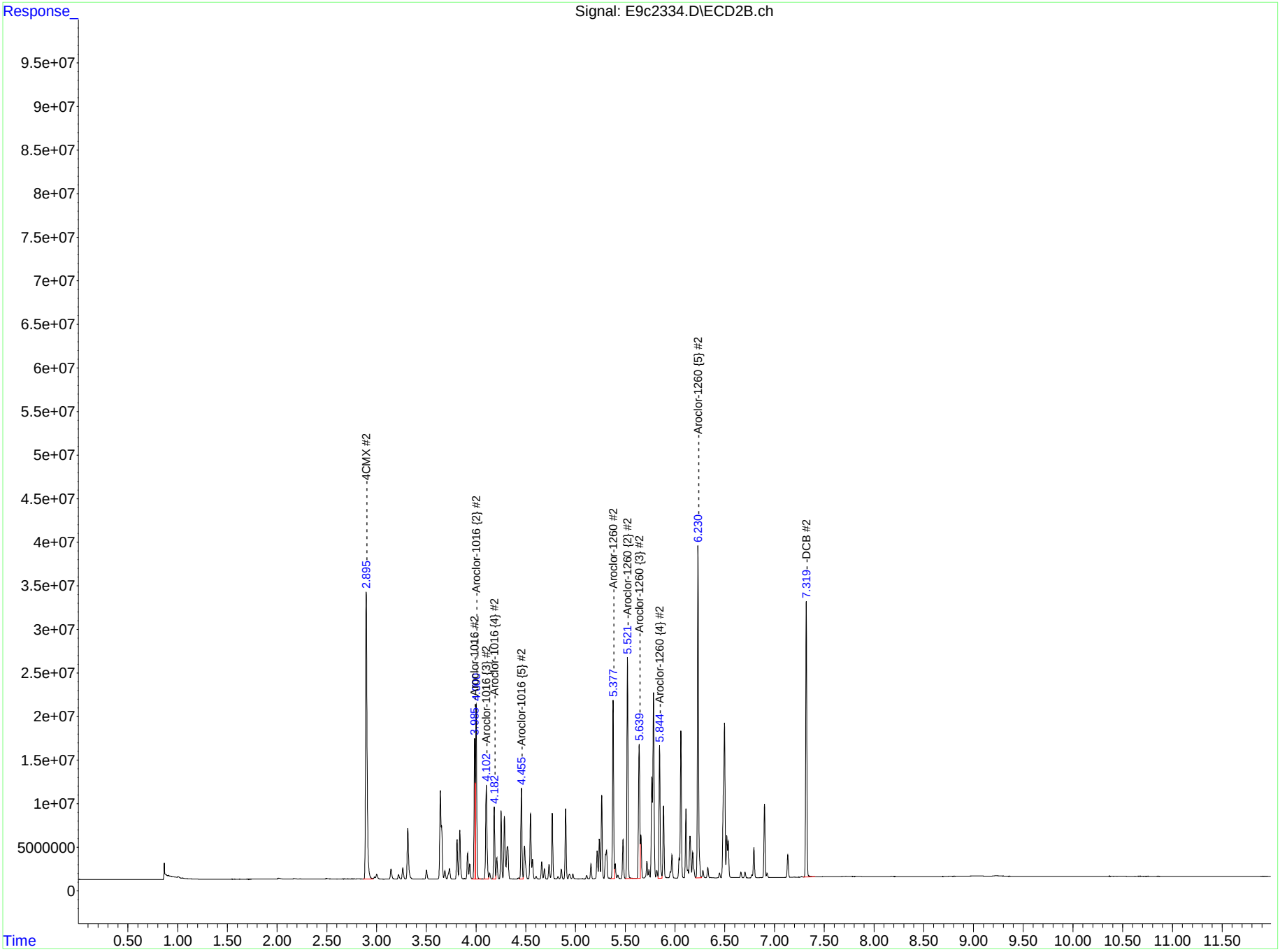
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.439	0.000	492498382	108.858	2.896	2.895	-0.001	346629768	113.182
DCB	6.447	6.445	-0.002	399150749	103.891	7.323	7.319	-0.004	248497551	99.910
Target Compounds										
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1016	3.007	3.006	-0.001	187252857	1136.408	3.986	3.985	-0.001	115573951	1127.596
Aroclor-1016 {2}	3.360	3.359	-0.001	249733789	1158.733	4.001	4.000	-0.001	157504806	1144.984
Aroclor-1016 {3}	3.459	3.458	-0.001	157474331	1121.657	4.103	4.103	0.000	100903385	1108.342
Aroclor-1016 {4}	3.505	3.504	-0.001	92354002	1127.316	4.182	4.182	0.000	62541734	1104.681
Aroclor-1016 {5}	3.760	3.760	0.000	118492983	1090.822	4.456	4.455	-0.001	80573278	1087.183
Sum Aroclor-1016				805307962	5634.936				517097155	5572.785
Average Aroclor-1016					1126.987					1114.557
Aroclor-1260	4.635	4.634	-0.001	234239369	1059.415	5.379	5.377	-0.002	151791218	1028.287
Aroclor-1260 {2}	5.105	5.104	-0.001	179126217	1040.069	5.524	5.522	-0.002	189033302	1040.656
Aroclor-1260 {3}	5.278	5.277	-0.001	191766678	1036.214	5.641	5.639	-0.002	142294655	1036.328
Aroclor-1260 {4}	5.492	5.491	-0.001	439853156	1063.934	5.846	5.844	-0.002	118643725	1027.343
Aroclor-1260 {5}	5.689	5.689	0.000	237259580	1045.616	6.233	6.231	-0.002	299171930	1044.796
Sum Aroclor-1260				1282245000	5245.247				900934830	5177.409
Average Aroclor-1260					1049.049					1035.482

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2334.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2334.D



Analytical Sequence

Lab Name: GEL Laboratories LLC **Client SDG:** 2014−2961

GC Column: RTX−CLPEST 1

Instrument ID: ECD9A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples, and Standards is given below:

Mean Surrogate RT From Initial Calibration: **RT Range Based on Calibration Verification:**				2.44 2.41 2.47 #	6.46 6.43 6.49 #
File	**Sample Number**	**Lab Sample ID**	**Analysis Date**	**4cmx**	**Decachlorobiphenyl**
E9c1707.D	ICAL	WAR140317−01	17−MAR−14 12:09	2.45	6.46
E9c1708.D	ICAL	WAR140317−02	17−MAR−14 12:20	2.44	6.46
E9c1709.D	ICAL	WAR140317−03	17−MAR−14 12:32	2.44	6.46
E9c1710.D	ICAL	WAR140317−04	17−MAR−14 12:43	2.44	6.46
E9c1711.D	ICAL	IAR140317−01	17−MAR−14 12:55	2.44	6.46
E9c1712.D	ICV	WAR140205−60	17−MAR−14 13:06	2.44	6.46

Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC **Client SDG:** 2014−2961

GC Column: RTX−CLPEST 2

Instrument ID: ECD9A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples, and Standards is given below:

Mean Surrogate RT From Initial Calibration: **RT Range Based on Calibration Verification:**				2.9 2.87 2.93 #	7.33 7.3 7.36 #
File	**Sample Number**	**Lab Sample ID**	**Analysis Date**	**4cmx**	**Decachlorobiphenyl**
E9c1707.D	ICAL	WAR140317−01	17−MAR−14 12:09	2.9	7.33
E9c1708.D	ICAL	WAR140317−02	17−MAR−14 12:20	2.9	7.34
E9c1709.D	ICAL	WAR140317−03	17−MAR−14 12:32	2.9	7.33
E9c1710.D	ICAL	WAR140317−04	17−MAR−14 12:43	2.9	7.33
E9c1711.D	ICAL	IAR140317−01	17−MAR−14 12:55	2.9	7.33
E9c1712.D	ICV	WAR140205−60	17−MAR−14 13:06	2.9	7.33

Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC **Client SDG:** 2014−2961

GC Column: RTX−CLPEST 1

Instrument ID: ECD9A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples, and Standards is given below:

Mean Surrogate RT From Initial Calibration: RT Range Based on Calibration Verification:				#	#
File	**Sample Number**	**Lab Sample ID**	**Analysis Date**	**4cmx**	**Decachlorobiphenyl**
E9c2009.D	ICAL	WAR140318−05	20−MAR−14 06:54	2.44	6.45
E9c2010.D	ICAL	WAR140318−06	20−MAR−14 07:05	2.44	6.45
E9c2011.D	ICAL	WAR140318−07	20−MAR−14 07:17	2.44	6.45
E9c2012.D	ICAL	WAR140318−08	20−MAR−14 07:28	2.44	6.45
E9c2013.D	ICAL	IAR131113−02	20−MAR−14 07:39	2.44	6.45
E9c2014.D	ICV	WAR131205−54	20−MAR−14 08:04	2.45	6.45

Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC **Client SDG:** 2014−2961

GC Column: RTX−CLPEST 2

Instrument ID: ECD9A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples, and Standards is given below:

Mean Surrogate RT From Initial Calibration: RT Range Based on Calibration Verification:				#	#
File	**Sample Number**	**Lab Sample ID**	**Analysis Date**	**4cmx**	**Decachlorobiphenyl**
E9c2009.D	ICAL	WAR140318−05	20−MAR−14 06:54	2.9	7.33
E9c2010.D	ICAL	WAR140318−06	20−MAR−14 07:05	2.9	7.33
E9c2011.D	ICAL	WAR140318−07	20−MAR−14 07:17	2.9	7.33
E9c2012.D	ICAL	WAR140318−08	20−MAR−14 07:28	2.9	7.32
E9c2013.D	ICAL	IAR131113−02	20−MAR−14 07:39	2.9	7.33
E9c2014.D	ICV	WAR131205−54	20−MAR−14 08:04	2.9	7.33

Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC **Client SDG:** 2014−2961

GC Column: RTX−CLPEST 1

Instrument ID: ECD9A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples, and Standards is given below:

Mean Surrogate RT From Initial Calibration: RT Range Based on Calibration Verification:				2.44 2.41 2.47 #	6.45 6.42 6.48 #
File	**Sample Number**	**Lab Sample ID**	**Analysis Date**	**4cmx**	**Decachlorobiphenyl**
E9c2301.D	CCB	WAR140115−88	23−MAR−14 08:19	2.44	6.45
E9c2302.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 08:30	0	0
E9c2303.D	CCV	WAR140205−60	23−MAR−14 08:42	2.44	6.45
E9c2304.D	CCV	WAR131205−54	23−MAR−14 08:53	2.44	6.45
E9c2305.D	CCV	WAR131111−42	23−MAR−14 09:04	2.44	6.45
E9c2306.D	CCV	WAR131230−48	23−MAR−14 09:16	2.44	6.45
E9c2307.D	CCV	WAR131120−62	23−MAR−14 09:27	2.44	6.45
E9c2308.D	CCV	WAR140208−68	23−MAR−14 09:38	2.44	6.45
E9c2309.D	CCV	WAR140208−21	23−MAR−14 09:50	2.44	6.45
E9c2310.D	CCV	WAR140208−32	23−MAR−14 10:01	2.44	6.45
E9c2311.D	CCB	WAR140115−88	23−MAR−14 10:12	2.44	6.45
E9c2312.D	MB	1203052771	23−MAR−14 10:24	2.44	6.45
E9c2313.D	BLK01LCS	1203052774	23−MAR−14 10:35	2.44	6.45
E9c2314.D	CACV−14−49260	344334001	23−MAR−14 10:47	2.44	6.45
E9c2315.D	CACV−14−49263	344334002	23−MAR−14 11:01	2.44	6.44
E9c2316.D	CACV−14−49261	344334003	23−MAR−14 11:16	2.44	6.45
E9c2317.D	CACV−14−49262	344334004	23−MAR−14 11:30	2.45	6.44
E9c2318.D	CAWA−14−49271	344334008	23−MAR−14 11:45	2.44	6.45
E9c2319.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 11:59	2.44	6.45
E9c2320.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 12:13	2.45	6.45
E9c2321.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 12:27	2.44	6.45
E9c2322.D	CCV	WAR140205−60	23−MAR−14 12:41	2.44	6.45
E9c2323.D	CCB	WAR140115−88	23−MAR−14 12:53	2.44	6.45
E9c2324.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 13:04	2.44	6.45
E9c2325.D	CAPU−14−56568MS	1203052772	23−MAR−14 13:18	2.44	6.45
E9c2326.D	CAPU−14−56568MSD	1203052773	23−MAR−14 13:33	2.44	6.45
E9c2327.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 13:47	2.44	6.45
E9c2328.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:02	2.44	6.45
E9c2329.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:16	2.44	6.45

Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC **Client SDG:** 2014−2961

GC Column: RTX−CLPEST 1

Instrument ID: ECD9A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples, and Standards is given below:

Mean Surrogate RT From Initial Calibration: **RT Range Based on Calibration Verification:**				2.44 2.41 2.47 #	6.45 6.42 6.48 #
	Sample Number	**Lab Sample ID**	**Analysis Date**	**4cmx**	**Decachlorobiphenyl**
E9c2330.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:31	2.44	6.45
E9c2331.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:45	2.44	6.45
E9c2332.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:59	2.44	6.45
E9c2333.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 15:14	2.44	6.44
E9c2334.D	CCV	WAR140205−60	23−MAR−14 15:28	2.44	6.45
E9c2335.D	CCB	WAR140115−88	23−MAR−14 15:43	2.44	6.45

Column used to flag retention time values with an asterisk.

Lab Name: GEL Laboratories LLC **Client SDG:** 2014−2961

GC Column: RTX−CLPEST 2

Instrument ID: ECD9A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples, and Standards is given below:

Mean Surrogate RT From Initial Calibration: **RT Range Based on Calibration Verification:**				2.9 2.87 2.93 #	7.32 7.29 7.35 #
File	**Sample Number**	**Lab Sample ID**	**Analysis Date**	**4cmx**	**Decachlorobiphenyl**
E9c2301.D	CCB	WAR140115−88	23−MAR−14 08:19	2.9	7.32
E9c2302.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 08:30	0	0
E9c2303.D	CCV	WAR140205−60	23−MAR−14 08:42	2.9	7.32
E9c2304.D	CCV	WAR131205−54	23−MAR−14 08:53	2.9	7.32
E9c2305.D	CCV	WAR131111−42	23−MAR−14 09:04	2.9	7.32
E9c2306.D	CCV	WAR131230−48	23−MAR−14 09:16	2.9	7.32
E9c2307.D	CCV	WAR131120−62	23−MAR−14 09:27	2.9	7.32
E9c2308.D	CCV	WAR140208−68	23−MAR−14 09:38	2.9	7.32
E9c2309.D	CCV	WAR140208−21	23−MAR−14 09:50	2.9	7.32
E9c2310.D	CCV	WAR140208−32	23−MAR−14 10:01	2.9	7.32
E9c2311.D	CCB	WAR140115−88	23−MAR−14 10:12	2.9	7.32
E9c2312.D	MB	1203052771	23−MAR−14 10:24	2.9	7.32
E9c2313.D	BLK01LCS	1203052774	23−MAR−14 10:35	2.9	7.32
E9c2314.D	CACV−14−49260	344334001	23−MAR−14 10:47	2.9	7.32
E9c2315.D	CACV−14−49263	344334002	23−MAR−14 11:01	2.9	7.32
E9c2316.D	CACV−14−49261	344334003	23−MAR−14 11:16	2.9	7.32
E9c2317.D	CACV−14−49262	344334004	23−MAR−14 11:30	2.9	7.32
E9c2318.D	CAWA−14−49271	344334008	23−MAR−14 11:45	2.9	7.32
E9c2319.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 11:59	2.9	7.32
E9c2320.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 12:13	2.9	7.32
E9c2321.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 12:27	2.9	7.32
E9c2322.D	CCV	WAR140205−60	23−MAR−14 12:41	2.9	7.32
E9c2323.D	CCB	WAR140115−88	23−MAR−14 12:53	2.9	7.32
E9c2324.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 13:04	2.9	7.32
E9c2325.D	CAPU−14−56568MS	1203052772	23−MAR−14 13:18	2.9	7.32
E9c2326.D	CAPU−14−56568MSD	1203052773	23−MAR−14 13:33	2.9	7.32
E9c2327.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 13:47	2.9	7.32
E9c2328.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:02	2.9	7.32
E9c2329.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:16	2.9	7.32

Column used to flag retention time values with an asterisk.

Analytical Sequence

Lab Name: GEL Laboratories LLC **Client SDG:** 2014−2961

GC Column: RTX−CLPEST 2

Instrument ID: ECD9A.

Analytical Sequence for Performance Evaluation Mixtures, Blanks, Samples, and Standards is given below:

Mean Surrogate RT From Initial Calibration: **RT Range Based on Calibration Verification:**				2.9 2.87 2.93 #	7.32 7.29 7.35 #
	Sample Number	**Lab Sample ID**	**Analysis Date**	**4cmx**	**Decachlorobiphenyl**
E9c2330.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:31	2.9	7.32
E9c2331.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:45	2.9	7.32
E9c2332.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 14:59	2.9	7.32
E9c2333.D	ZZZZZZZ	ZZZZZZZ	23−MAR−14 15:14	2.9	7.32
E9c2334.D	CCV	WAR140205−60	23−MAR−14 15:28	2.9	7.32
E9c2335.D	CCB	WAR140115−88	23−MAR−14 15:43	2.9	7.32

Column used to flag retention time values with an asterisk.

Quality Control Data

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203052771**				
Client Sample:	**QC for batch 1373626**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**MB for batch 1373626**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 10:24**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2312.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2312.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.33	ug/kg	1.11	3.33	1
11104−28−2	Aroclor−1221	U	3.33	ug/kg	1.11	3.33	1
11141−16−5	Aroclor−1232	U	3.33	ug/kg	1.11	3.33	1
53469−21−9	Aroclor−1242	U	3.33	ug/kg	1.11	3.33	1
12672−29−6	Aroclor−1248	U	3.33	ug/kg	1.11	3.33	1
11097−69−1	Aroclor−1254	U	3.33	ug/kg	1.11	3.33	1
11096−82−5	Aroclor−1260	U	3.33	ug/kg	1.11	3.33	1

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2312.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 10:24 (#1); 23 Mar 2014 10:24 (#2)
Operator : YS1 InstName : ECD9
Sample : |1203052771|1373644|1|SVA|1|MB|||
Misc : |ECD8241_1S|SOIL|QC A|||
ALS Vial : 12 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:30 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.443	0.004	728036084	160.919	2.896	2.897	0.001	524911159	171.394
DCB	6.447	6.447	0.000	658852894	171.486	7.323	7.322	-0.001	433955718	174.475

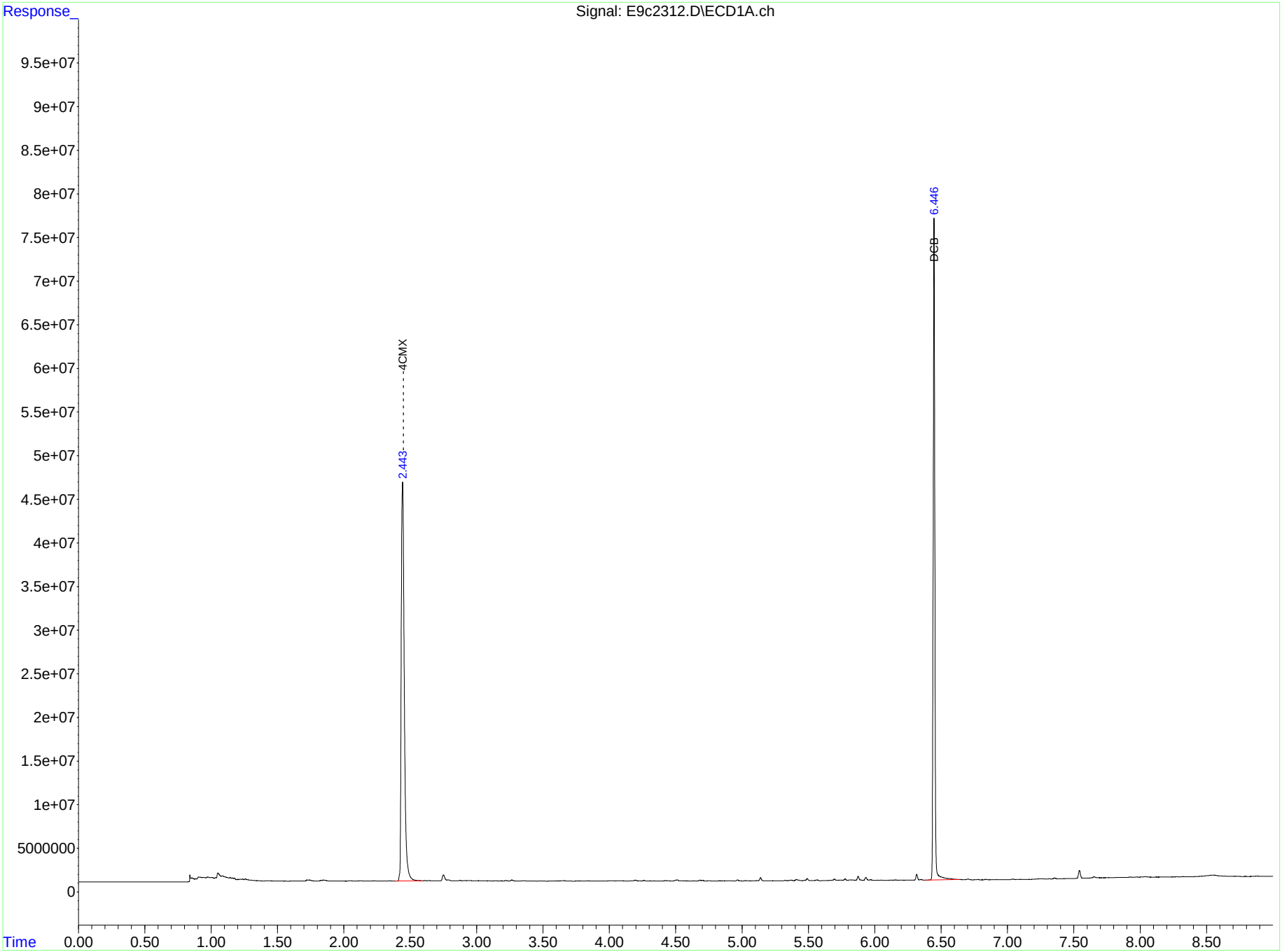
Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	80.46%	85.70%
DCB	200.000	No Limits	85.74%	87.24%

Target Compounds

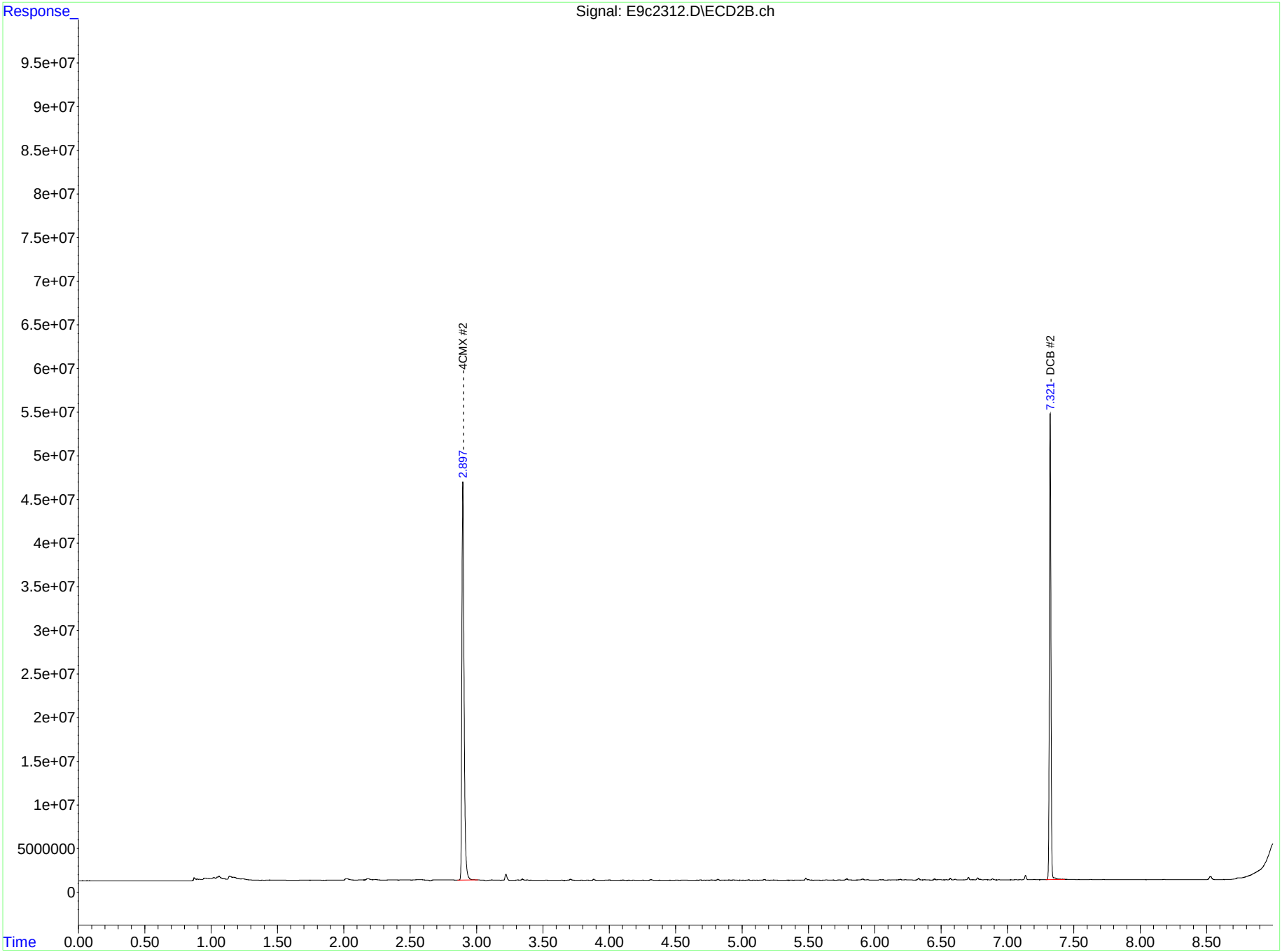
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2312.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2312.D



PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−2961**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203052774**				
Client Sample:	**QC for batch 1373626**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**LCS for batch 1373626**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 10:35**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2313.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2313.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016		22.9	ug/kg	1.11	3.33	2
11104−28−2	Aroclor−1221	U	3.33	ug/kg	1.11	3.33	1
11141−16−5	Aroclor−1232	U	3.33	ug/kg	1.11	3.33	1
53469−21−9	Aroclor−1242	U	3.33	ug/kg	1.11	3.33	1
12672−29−6	Aroclor−1248	U	3.33	ug/kg	1.11	3.33	1
11097−69−1	Aroclor−1254	U	3.33	ug/kg	1.11	3.33	1
11096−82−5	Aroclor−1260		28.1	ug/kg	1.11	3.33	2

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2313.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 10:35 (#1); 23 Mar 2014 10:35 (#2)
Operator : YS1 InstName : ECD9
Sample : |1203052774|1373644|1|SVA|1|LCS|||
Misc : |ECD8241_1S|SOIL|QC A|||
ALS Vial : 13 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 11:36:32 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.440	0.001	657685939	145.370	2.896	2.896	0.000	479439306	156.547
DCB	6.447	6.446	-0.001	599438249	156.021	7.323	7.321	-0.002	388086491	156.033

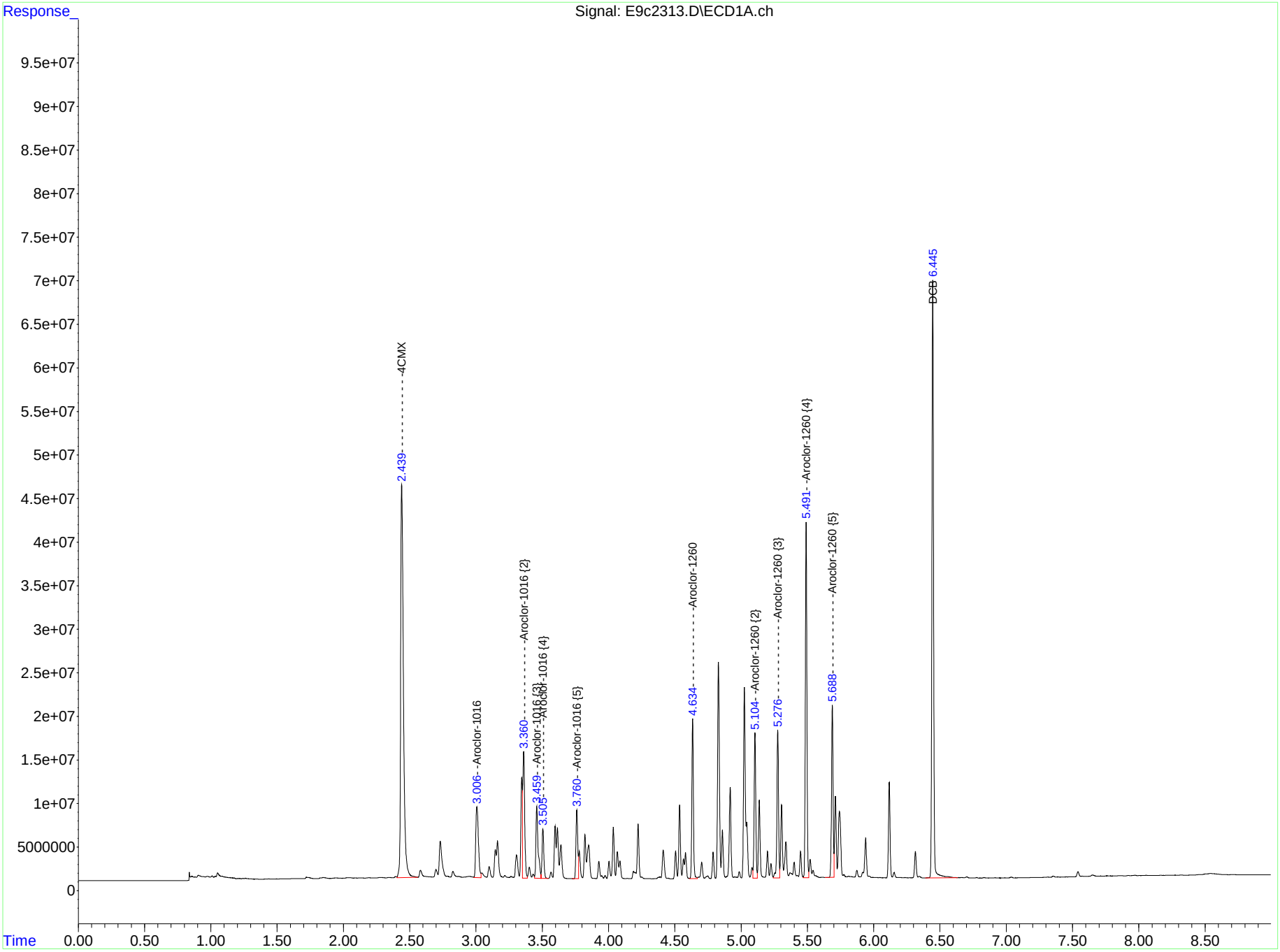
Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	72.69%	78.27%
DCB	200.000	No Limits	78.01%	78.02%

Target Compounds

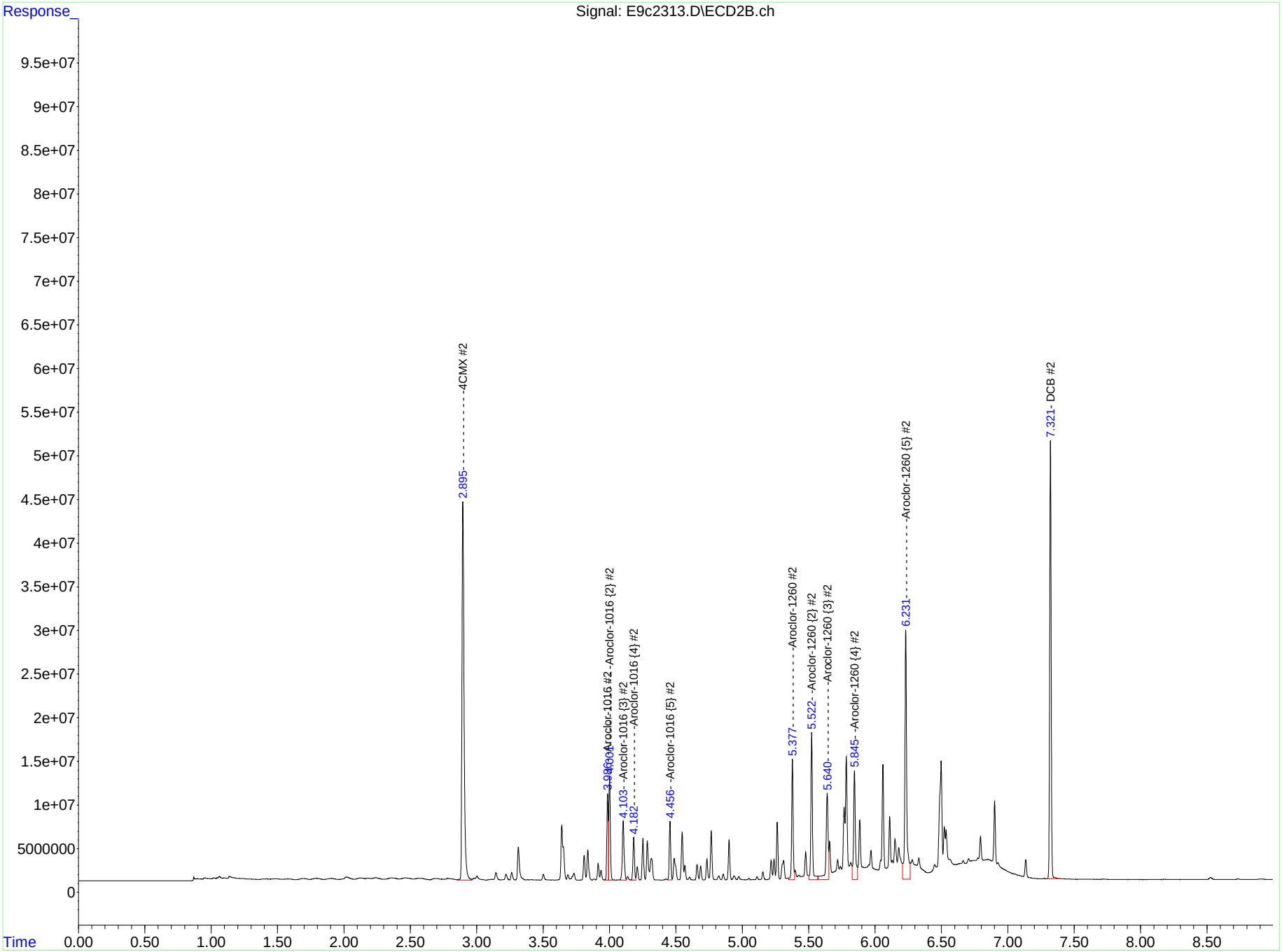
Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1016	3.007	3.007	0.000	113284293	687.504	3.986	3.986	0.000	70487591	687.711
Aroclor-1016 {2}	3.360	3.360	0.000	145461557	674.923	4.001	4.001	0.000	94366964	686.002
Aroclor-1016 {3}	3.459	3.459	0.000	93230685	664.063	4.103	4.103	0.000	63242446	694.667
Aroclor-1016 {4}	3.505	3.505	0.000	53373516	651.502	4.182	4.183	0.001	38295454	676.416
Aroclor-1016 {5}	3.760	3.761	0.001	72213652	664.784	4.456	4.456	0.000	51036740	688.643
Sum Aroclor-1016				477563702	3342.776				317429195	3433.440
Average Aroclor-1016					668.555					686.688
Aroclor-1260	4.635	4.634	-0.001	148710967	672.588	5.379	5.378	-0.001	104375872	707.079
Aroclor-1260 {2}	5.105	5.105	0.000	138661752	805.118	5.524	5.523	-0.001	137491706	756.912
Aroclor-1260 {3}	5.278	5.277	-0.001	145078951	783.936	5.641	5.640	-0.001	108156389	787.700
Aroclor-1260 {4}	5.492	5.491	-0.001	325860024	788.203	5.846	5.845	-0.001	116838448	1011.711
Aroclor-1260 {5}	5.689	5.689	0.000	161827049	713.180	6.233	6.232	-0.001	275586814	962.430
Sum Aroclor-1260				920138743	3763.026				742449228	4225.831
Average Aroclor-1260					752.605					845.166

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2313.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2313.D



Miscellaneous

Quantitation (Manual Int.) Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2324.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 13:04 (#1); 23 Mar 2014 13:04 (#2)
Operator : YS1 InstName : ECD9
Sample : |344589004|1373644|1|SVA|1|ARSL|||
Misc : |ECD8241_1S|SOIL|CAPU-14-56568|||
ALS Vial : 24 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 13:26:49 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.444	0.005	632805189	139.870	2.896	2.897	0.001	425425853	138.910
DCB	6.447	6.448	0.001	572706965	149.064	7.323	7.322	-0.001	390754735	157.106m

Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	69.94%	69.45%
DCB	200.000	No Limits	74.53%	78.55%

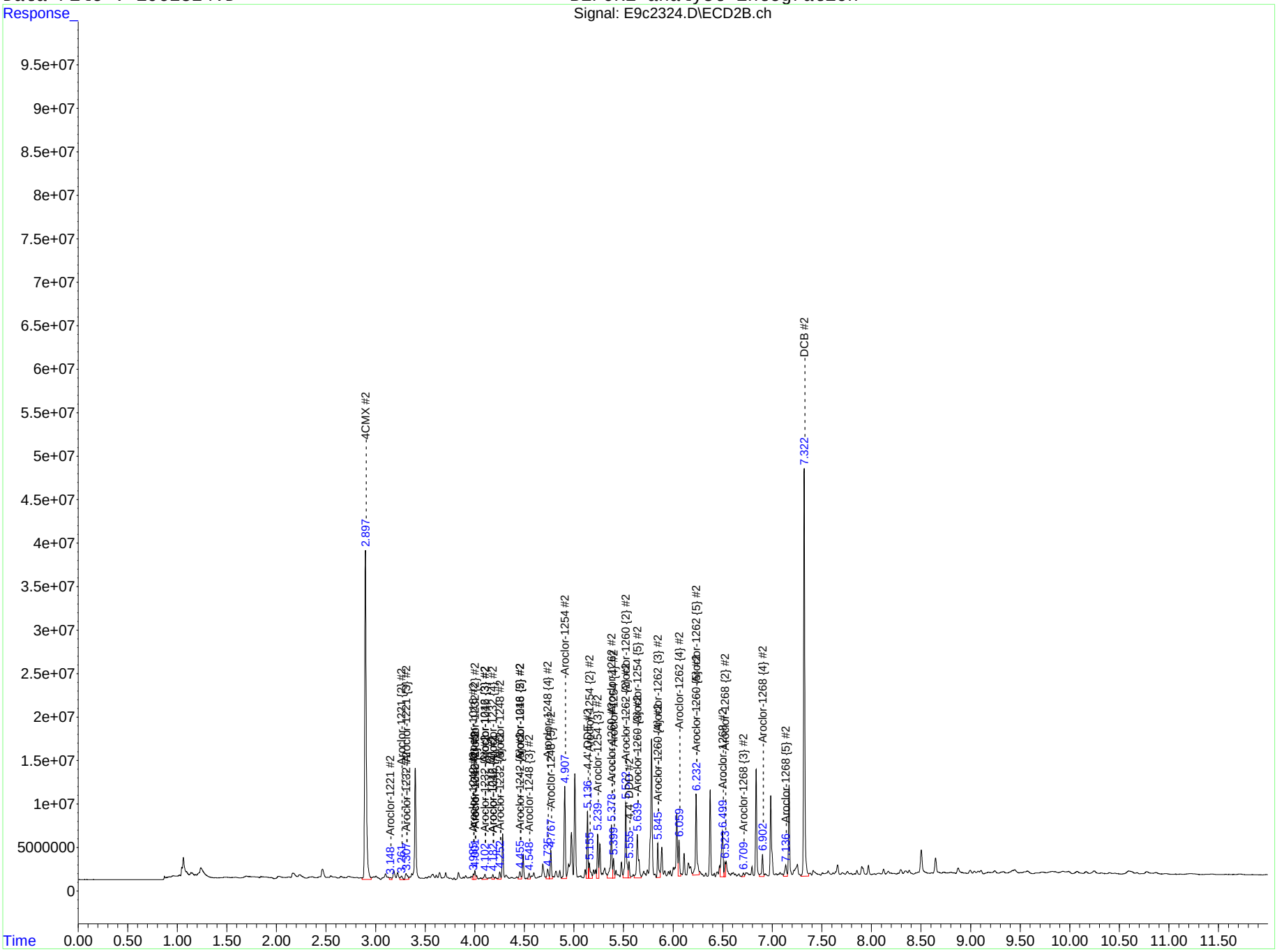
Target Compounds

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1254	4.037	4.037	0.000	29228469	163.698	4.902	4.903	0.001	27598982	176.359m
Aroclor-1254 {2}	4.224	4.223	-0.001	42540016	174.112	5.156	5.156	0.000	19900646	164.751
Aroclor-1254 {3}	4.507	4.506	-0.001	58881584	193.953	5.241	5.240	-0.001	39843519	181.832
Aroclor-1254 {4}	4.702	4.701	-0.001	33716727	145.101	5.400	5.399	-0.001	18257805	117.870
Aroclor-1254 {5}	4.896	4.895	-0.001	18567253	150.636	5.655	5.655	0.000	14130906	141.043m
Sum Aroclor-1254				182934049	827.500				119731858	781.854
Average Aroclor-1254					165.500					156.371
Aroclor-1260	4.635	4.634	-0.001	101553531	459.305	5.379	5.378	-0.001	61972611	419.824
Aroclor-1260 {2}	5.105	5.104	-0.001	73651822	427.648	5.524	5.522	-0.002	82351231	453.356m
Aroclor-1260 {3}	5.278	5.277	-0.001	55902964	302.073	5.641	5.639	-0.002	44481069	323.954m
Aroclor-1260 {4}	5.492	5.492	0.000	120282028	290.943	5.846	5.845	-0.001	30268211	262.094m
Aroclor-1260 {5}	5.689	5.689	0.000	66984763	295.205	6.233	6.232	-0.001	89609077	312.941
Sum Aroclor-1260				418375108	1775.174				308682200	1772.169
Average Aroclor-1260					355.035					354.434

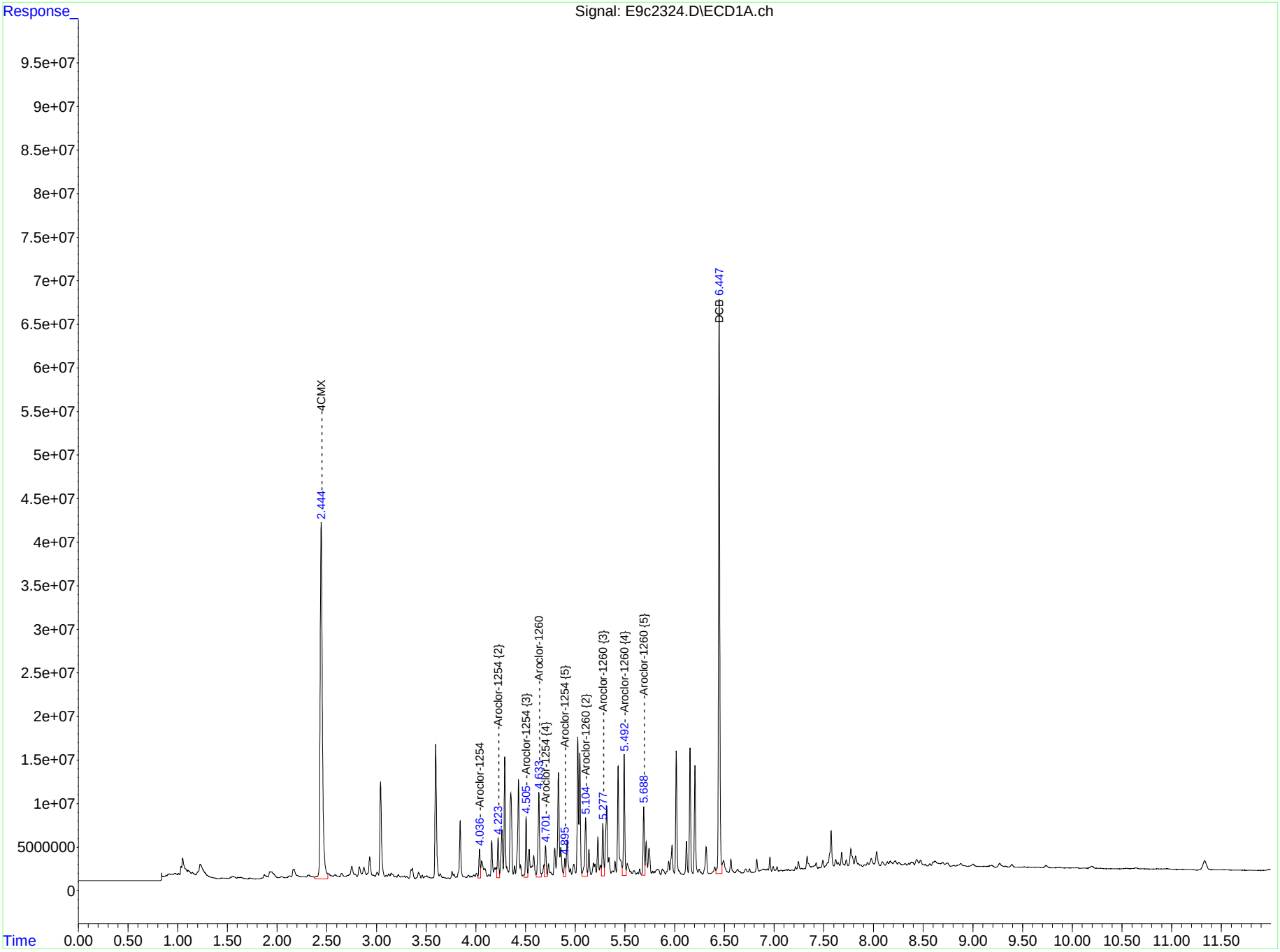
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2324.D

BEFORE analyst integration

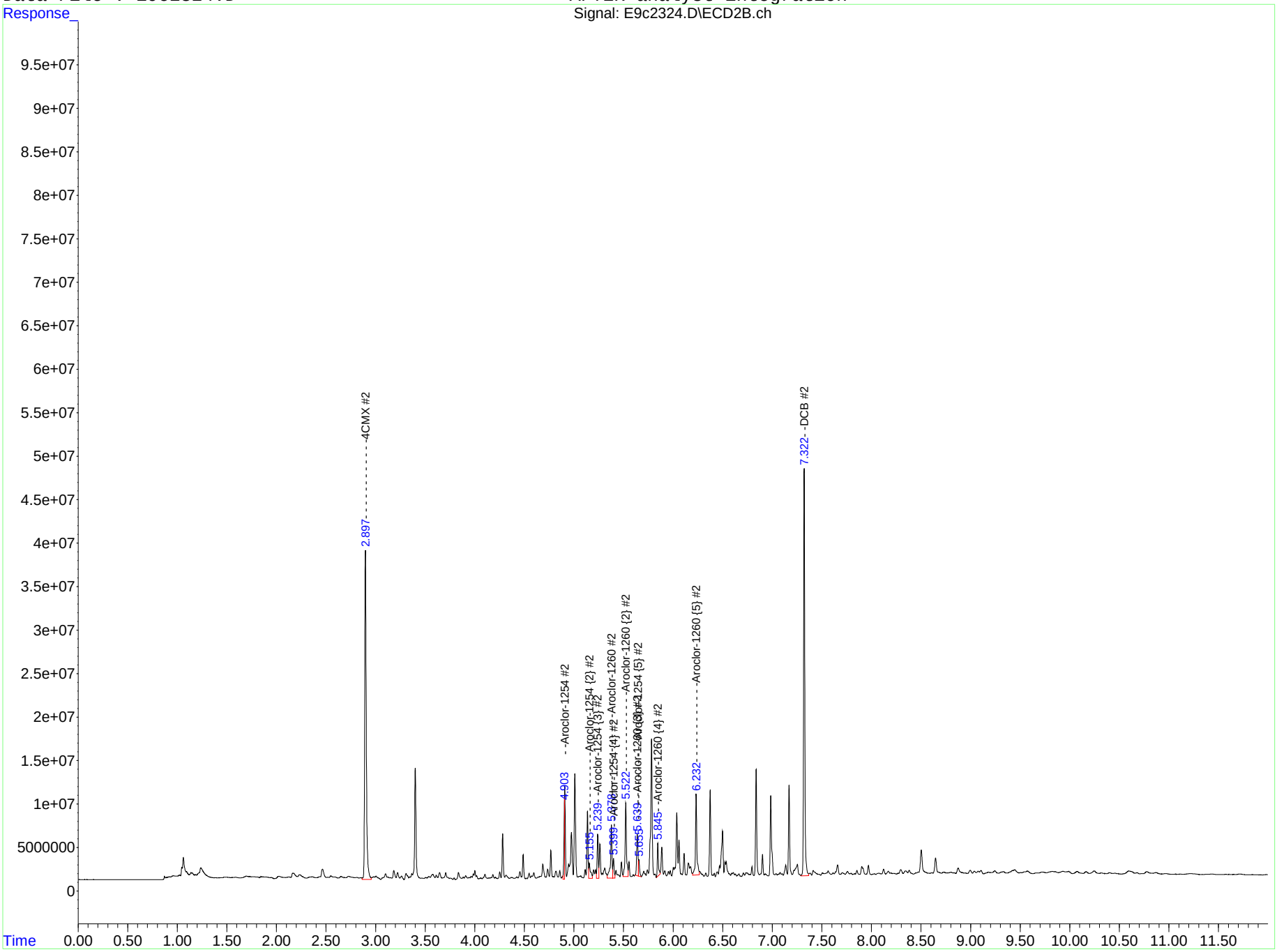


Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2324.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2324.D

AFTER analyst integration



Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2325.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 13:18 (#1); 23 Mar 2014 13:18 (#2)
Operator : YS1 InstName : ECD9
Sample : |1203052772|1373644|1|SVA|1|MS|||
Misc : |ECD8241_1S|SOIL|QC A|||
ALS Vial : 25 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 14:17:30 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.442	0.003	666348775	147.285	2.896	2.896	0.000	454282715	148.333
DCB	6.447	6.446	-0.001	583267087	151.812	7.323	7.320	-0.003	413684100	166.325

Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	73.64%	74.17%
DCB	200.000	No Limits	75.91%	83.16%

Target Compounds

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1016	3.007	3.008	0.001	121006625	734.370	3.986	3.986	0.000	74393416	725.818
Aroclor-1016 {2}	3.360	3.361	0.001	163621726	759.184	4.001	4.001	0.000	97813959	711.060
Aroclor-1016 {3}	3.459	3.459	0.000	94465290	672.857	4.103	4.103	0.000	68848956	756.250
Aroclor-1016 {4}	3.505	3.506	0.001	54589490	666.345	4.182	4.182	0.000	41325110	729.929
Aroclor-1016 {5}	3.760	3.760	0.000	76718270	706.253	4.456	4.455	-0.001	56719272	765.318
Sum Aroclor-1016				510401401	3539.008				339100713	3688.376
Average Aroclor-1016					707.802					737.675
Aroclor-1254	4.037	4.036	-0.001	79299316	444.126	4.902	4.907	0.005	263522832	1683.924
Aroclor-1254 {2}	4.224	4.223	-0.001	105342203	431.156	5.156	5.155	-0.001	17730231	146.783
Aroclor-1254 {3}	4.507	4.505	-0.002	79516146	261.922	5.241	5.238	-0.003	54536783	248.887
Aroclor-1254 {4}	4.702	4.701	-0.001	60077976	258.547	5.400	5.398	-0.002	21865827	141.162
Aroclor-1254 {5}	4.896	4.894	-0.002	18299231	148.462	5.655	5.656	0.001	41046588	409.692
Sum Aroclor-1254				342534872	1544.213				398702261	2630.448 #
Average Aroclor-1254					308.843					526.090 #
Aroclor-1260	4.635	4.634	-0.001	252160489	1140.468	5.379	5.377	-0.002	158126114	1071.202
Aroclor-1260 {2}	5.105	5.104	-0.001	203367439	1180.822	5.524	5.522	-0.002	212763523	1171.294
Aroclor-1260 {3}	5.278	5.276	-0.002	198949394	1075.026	5.641	5.638	-0.003	140839827	1025.732
Aroclor-1260 {4}	5.492	5.491	-0.001	456701367	1104.687	5.846	5.844	-0.002	119664517	1036.182

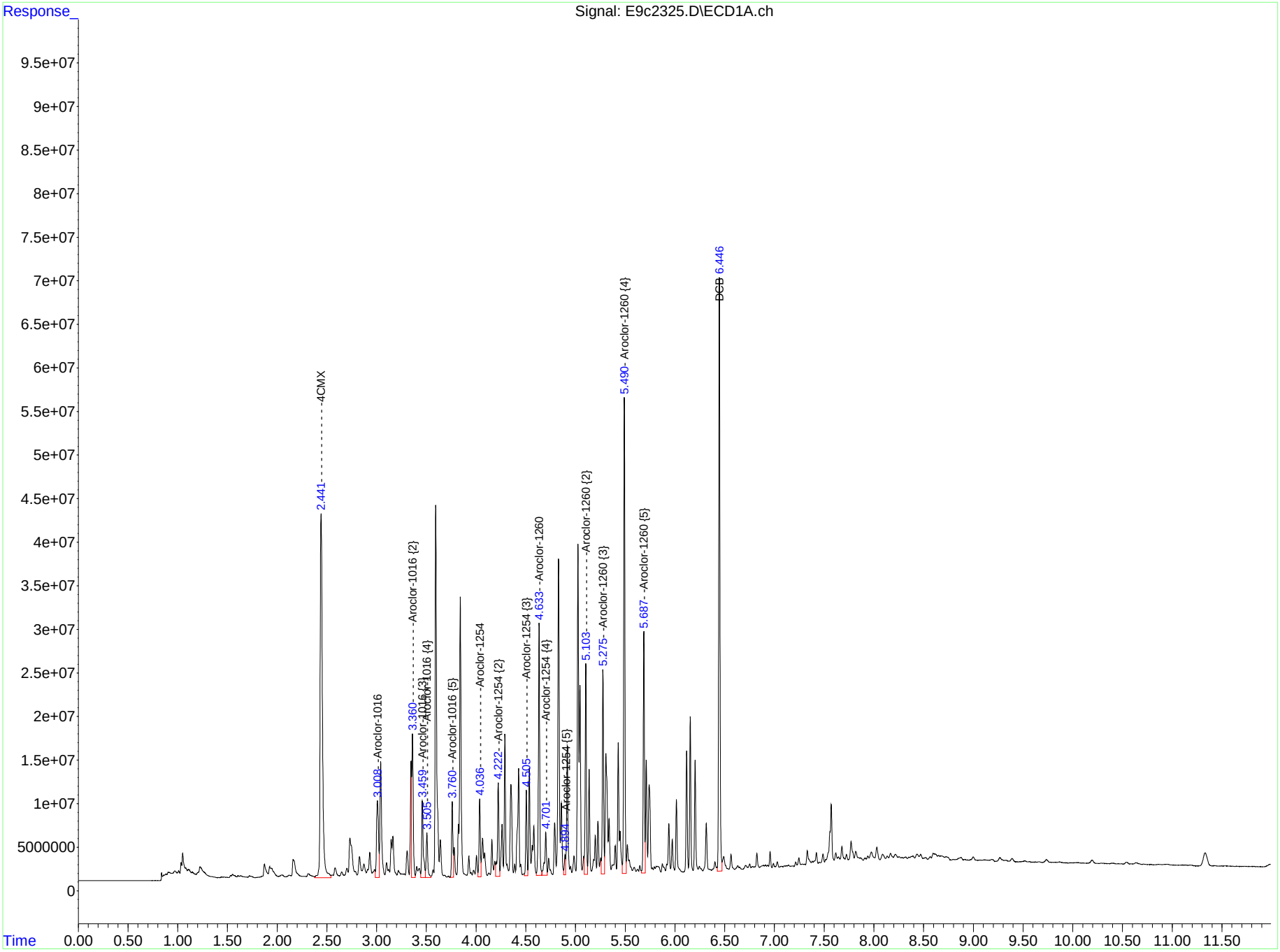
Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2325.D

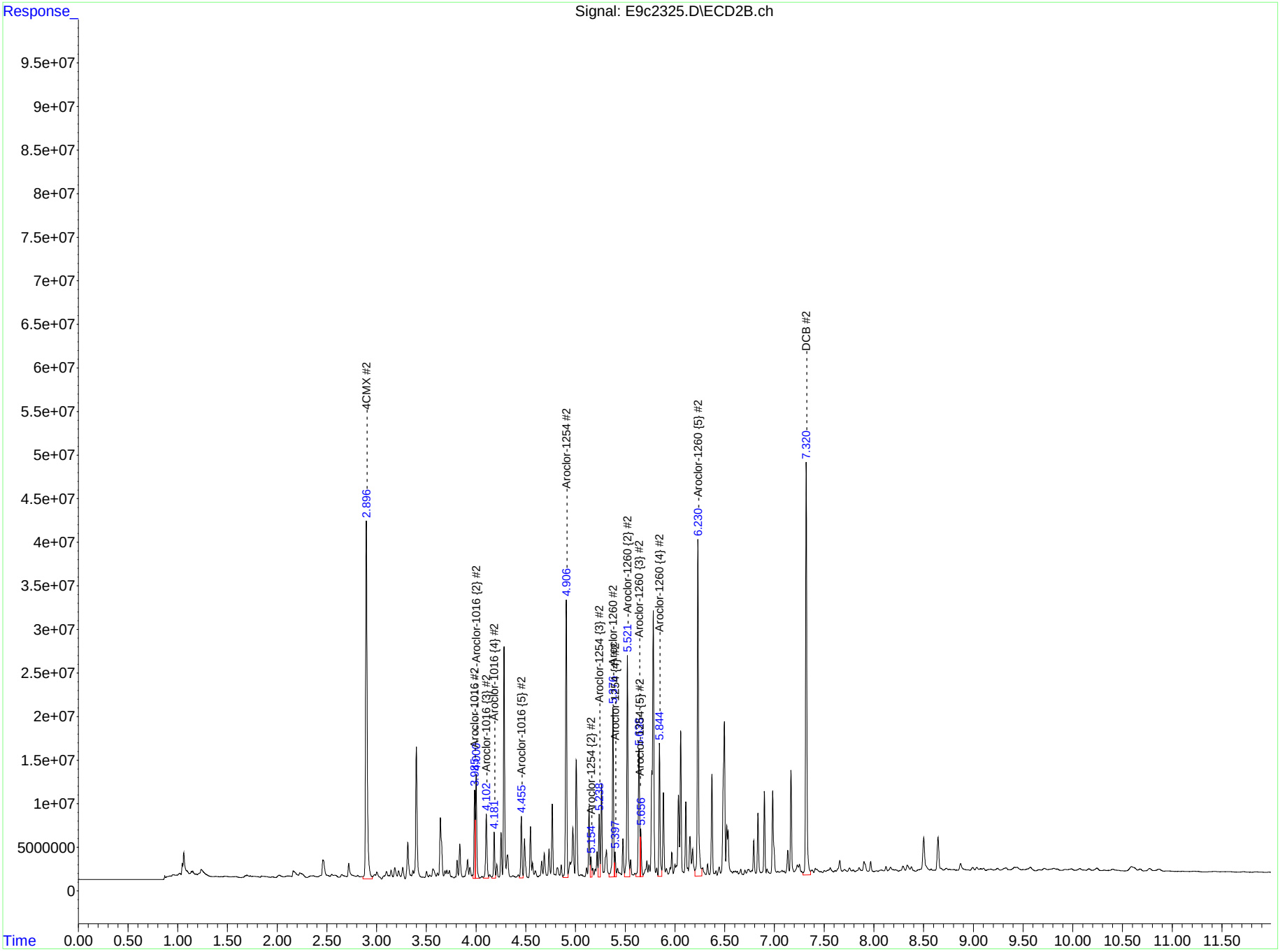
Aroclor-1260 {5}	5.689	5.687	-0.002	226727776	999.201	6.233	6.231	-0.002	332612806	1161.581
Sum Aroclor-1260				1337906466	5500.205				964006787	5465.991
Average Aroclor-1260					1100.041					1093.198

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2325.D



Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2325.D



Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2326.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 23 Mar 2014 13:33 (#1); 23 Mar 2014 13:33 (#2)
Operator : YS1 InstName : ECD9
Sample : |1203052773|1373644|1|SVA|1|MSD|||
Misc : |ECD8241_1S|SOIL|QC A|||
ALS Vial : 26 Sample Multiplier: 1

Integration Files signal 1: autoint1.e signal 2: autoint2.e
Quant Time: Mar 23 14:17:59 2014
Quant Method : C:\msdchem\1\data\032314.S\ECD9_8082_031714.m
Quant Title : ECD9 SubList :
QLast Update : Fri Mar 21 11:51:54 2014
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 1.0 ul
Signal #1 Phase : RTX-CLPEST 1 Signal #2 Phase: RTX-CLPEST 2
Signal #1 Info : 250 um Signal #2 Info : 250 um

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
System Monitoring Compounds										
4CMX	2.439	2.442	0.003	664703207	146.921	2.896	2.896	0.000	436172399	142.419
DCB	6.447	6.445	-0.002	679630869	176.894	7.323	7.319	-0.004	467035813	187.776

Compound	Amount	Range	Recovery1	Recovery2
4CMX	200.000	No Limits	73.46%	71.21%
DCB	200.000	No Limits	88.45%	93.89%

Target Compounds

Compound	Exp#1	RT#1	Dlt#1	Resp#1	ug/L#1	Exp#2	RT#2	Dlt#2	Resp#2	ug/L#2
Aroclor-1016	3.007	3.008	0.001	175939416	1067.748	3.986	3.986	0.000	118487923	1156.026
Aroclor-1016 {2}	3.360	3.361	0.001	251966528	1169.092	4.001	4.001	0.000	157747418	1146.747
Aroclor-1016 {3}	3.459	3.460	0.001	138242338	984.672	4.103	4.103	0.000	110155617	1209.970
Aroclor-1016 {4}	3.505	3.505	0.000	78959566	963.817	4.182	4.182	0.000	68200837	1204.638
Aroclor-1016 {5}	3.760	3.761	0.001	125615953	1156.395	4.456	4.456	0.000	94024094	1268.676
Sum Aroclor-1016				770723803	5341.724				548615889	5986.057
Average Aroclor-1016					1068.345					1197.211
Aroclor-1254	4.037	4.036	-0.001	87574162	490.471	4.902	4.904	0.002	132868320	849.035
Aroclor-1254 {2}	4.224	4.224	0.000	140159477	573.660	5.156	5.154	-0.002	36116181	298.994
Aroclor-1254 {3}	4.507	4.505	-0.002	101423551	334.084	5.241	5.238	-0.003	67577333	308.400
Aroclor-1254 {4}	4.702	4.700	-0.002	80802612	347.735	5.400	5.398	-0.002	32058560	206.965
Aroclor-1254 {5}	4.896	4.894	-0.002	32207161	261.297	5.655	5.655	0.000	51164800	510.683
Sum Aroclor-1254				442166964	2007.247				319785193	2174.077
Average Aroclor-1254					401.449					434.815
Aroclor-1260	4.635	4.634	-0.001	281410570	1272.760	5.379	5.377	-0.002	181784412	1231.471
Aroclor-1260 {2}	5.105	5.103	-0.002	200014608	1161.354	5.524	5.521	-0.003	233189946	1283.745
Aroclor-1260 {3}	5.278	5.275	-0.003	224377612	1212.428	5.641	5.638	-0.003	159769103	1163.593
Aroclor-1260 {4}	5.492	5.490	-0.002	516058267	1248.262	5.846	5.844	-0.002	134437388	1164.101

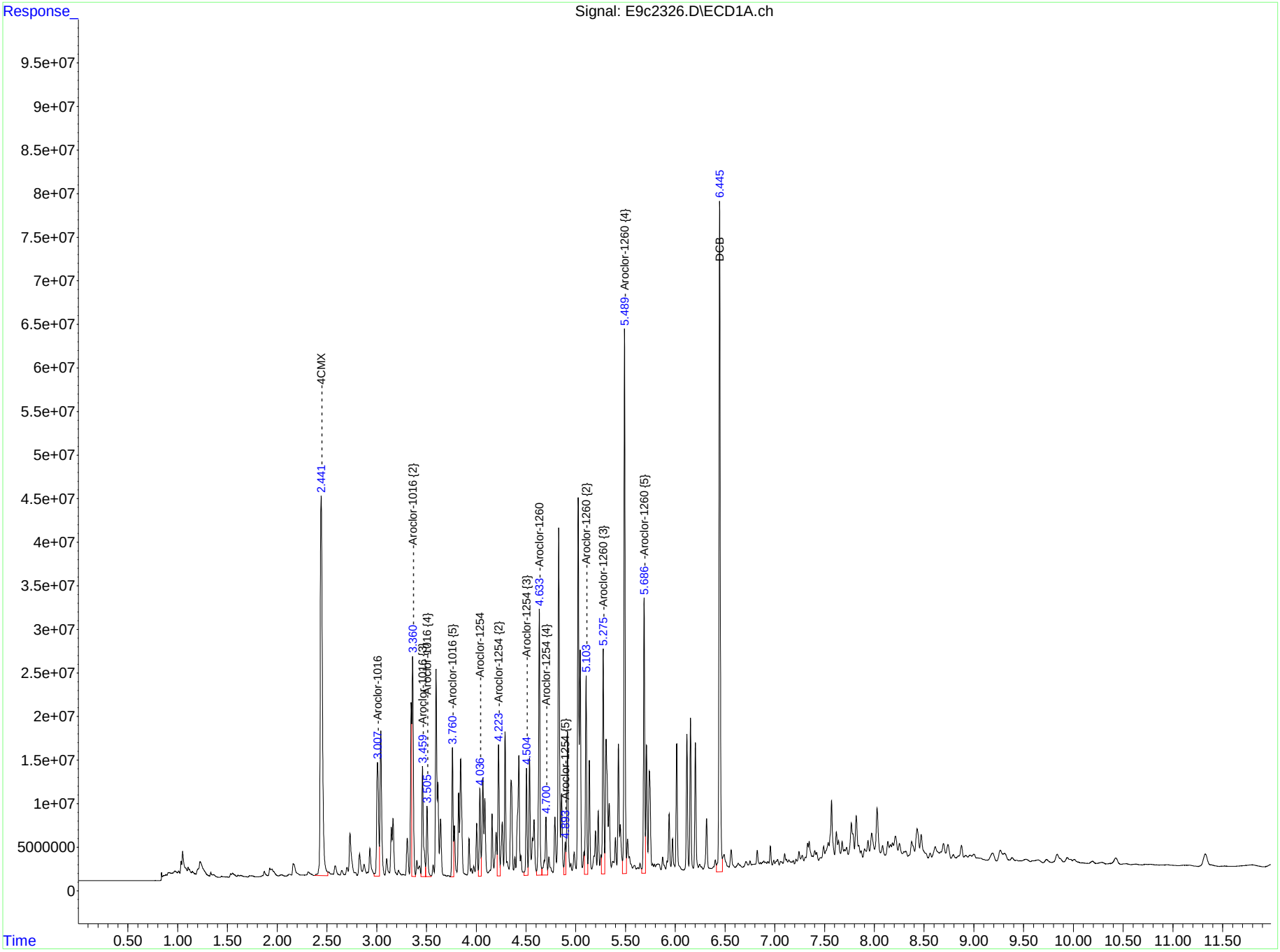
Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2326.D

Aroclor-1260 {5}	5.689	5.687	-0.002	260348808	1147.371	6.233	6.230	-0.003	375400651	1311.009
Sum Aroclor-1260				1482209866	6042.175				1084581500	6153.920
Average Aroclor-1260					1208.435					1230.784

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int. (A) = Over the calibration range (d) = deleted

Data Path : C:\msdchem\1\data\032314.S\
Data File : E9c2326.D



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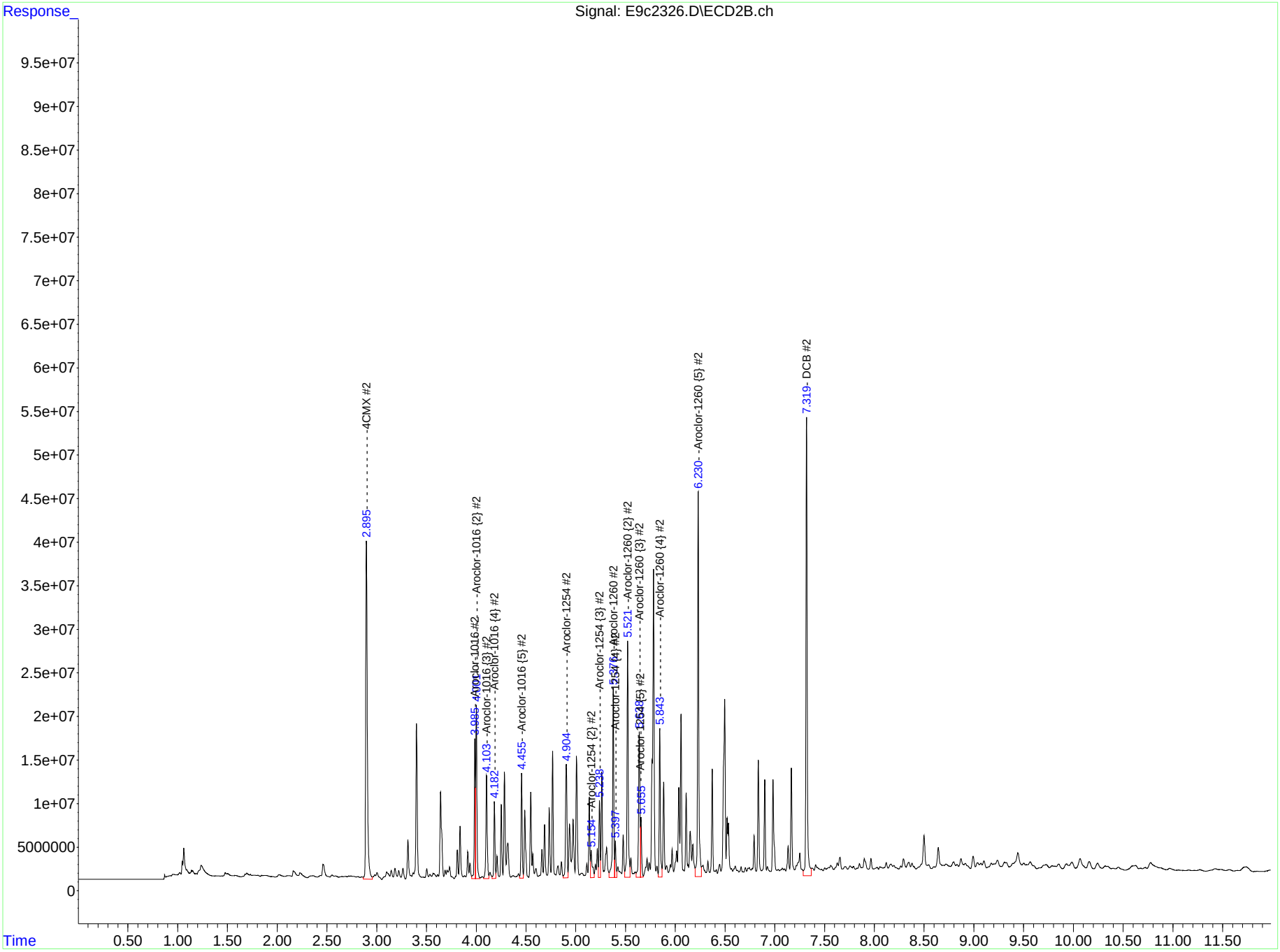
Data File : E9c2326.D



Prep Logbook

Automated Soxhlet Extraction

Batch ID: 1373626 **Verified by:** _____

Analyst: Sirena White

Method: SW846 3541

Lab SOP: GL−OA−E−066 REV# 5

Instrument: Semi−Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Clean Up 1	Clean Up Amount 1 (mL)	Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
1203052771 MB	21−MAR−2014 09:40:00	30.03	H2SO4/KMnO4	2	9	1	0.0333
1203052774 LCS	21−MAR−2014 09:40:00	30.03	H2SO4/KMnO4	2	9	1	0.0333
344334001	21−MAR−2014 09:40:00	30.04	H2SO4/KMnO4	2	9	1	0.03329
344334002	21−MAR−2014 09:40:00	30.06	H2SO4/KMnO4	2	9	1	0.03327
344334003	21−MAR−2014 09:40:00	30	H2SO4/KMnO4	2	9	1	0.03333
344334004	21−MAR−2014 09:40:00	30.02	H2SO4/KMnO4	2	9	1	0.03331
344334008	21−MAR−2014 09:40:00	30.08	H2SO4/KMnO4	2	9	1	0.03324
344589001	21−MAR−2014 09:40:00	30.04	H2SO4/KMnO4	2	9	1	0.03329
344589002	21−MAR−2014 09:40:00	30	H2SO4/KMnO4	2	9	1	0.03333
344589003	21−MAR−2014 09:40:00	30.31	H2SO4/KMnO4	2	9	1	0.03299
344589004	21−MAR−2014 09:40:00	30.06	H2SO4/KMnO4	2	9	1	0.03327
1203052772 MS (344589004)	21−MAR−2014 09:40:00	30.01	H2SO4/KMnO4	2	9	1	0.03332
1203052773 MSD (344589004)	21−MAR−2014 09:40:00	30.09	H2SO4/KMnO4	2	9	1	0.03323
344589005	21−MAR−2014 09:40:00	30.1	H2SO4/KMnO4	2	9	1	0.03322
344589006	21−MAR−2014 09:40:00	30.03	H2SO4/KMnO4	2	9	1	0.0333
344589007	21−MAR−2014 09:40:00	30.04	H2SO4/KMnO4	2	9	1	0.03329
344589008	21−MAR−2014 09:40:00	30.1	H2SO4/KMnO4	2	9	1	0.03322
344589009	21−MAR−2014 09:40:00	30.06	H2SO4/KMnO4	2	9	1	0.03327
344675001	21−MAR−2014 09:40:00	30.13	H2SO4/KMnO4	2	9	1	0.03319
344675002	21−MAR−2014 09:40:00	30.17	H2SO4/KMnO4	2	9	1	0.03315
344675003	21−MAR−2014 09:40:00	30.13	H2SO4/KMnO4	2	9	1	0.03319
344675004	21−MAR−2014 09:40:00	30.35	H2SO4/KMnO4	2	9	1	0.03295

Type	Sample Id	Description	Serial Number	Spike Amt	Units

Comments:

Prep Logbook

Batch ID: 1373626 **Verified by:** _____

Analyst: Sirena White

Method: SW846 3541

Lab SOP: GL−OA−E−066 REV# 5

Instrument: Semi−Volatiles Manual

Sample ID		Run Date	Aliquot (g)	Clean Up 1	Clean Up Amount 1 (mL)	Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
LCS	1203052774	PCB Laboratory Control		WE140227−06	1	mL		
MS	1203052772	PCB Laboratory Control		WE140227−06	1	mL		
MSD	1203052773	PCB Laboratory Control		WE140227−06	1	mL		
SURR	All	PEST LOW LEVEL SURROGATE 200 UG/L		WE140226−01	1	mL		
REGNT	All	5% Potassium Permanganate		2068449	5	mL		
REGNT	All	Hexane		2075069−B4	120	mL		
REGNT	All	1:1 sulfuric acid		2078359	5	mL		
SOURC	All	SODIUM SULFATE		2051933	30	g		

Final Solvent: Hexane
Verified by: CR
Clean−up Initials: SJW
Clean−up SOP: GL−OA−E−037 REV.1
Clean−up date: 03/21/2014

Prior to Clean−up: 2mL

ORGANIC RUN LOG - INSTRUMENT ID#ECD9

GEL ORGANIC RUN LOG 031714.S

DATE: 17-Mar-14 METHOD: See Data OPERATOR: JXM REVIEWED BY:

Solven ID: 2067498-B4 REVIEWED DATE:
Alumina ID : 140226A
Copper ID : 2048561-A

Calibration & QC Information:
Initial Calibration Dates: See Calibration History
Initial Calibration Std ID's: See associated data and run log Sequence Number: 031714.S
GEL SOP: GL-OA-E-040

Analysis Date	Time	Data File	Lab Sample ID	Client	Batch #	Dil. Factor	Slot#	Analyst	Comments
03/17/2014	11:01	E9c1701.D	WAR140115-88	IBK	BLANK	1	1	JXM	CLEAN
03/17/2014	11:12	E9c1702.D	WAR131205-DDT	DDT	ICS	1	2	JXM	DDT ANALOG
03/17/2014	11:24	E9c1703.D	WAR140205-60	1660	CCV	1	3	JXM	DUSE
03/17/2014	11:35	E9c1704.D	WAR131205-54	1254	CCV	1	4	JXM	PASSES BOTH COLUMNS
03/17/2014	11:46	E9c1705.D	WAR131111-42	1242	CCV	1	5	JXM	PASSES BOTH COLUMNS
03/17/2014	11:58	E9c1706.D	WAR131230-48	1248	CCV	1	6	JXM	PASSES BOTH COLUMNS
03/17/2014	12:09	E9c1707.D	WAR140317-01	1660-1	ICAL	1	7	JXM	1660 LEVEL 1
03/17/2014	12:20	E9c1708.D	WAR140317-02	1660-2	ICAL	1	8	JXM	1660 LEVEL 2
03/17/2014	12:32	E9c1709.D	WAR140317-03	1660-3	ICAL	1	9	JXM	1660 LEVEL 3
03/17/2014	12:43	E9c1710.D	WAR140317-04	1660-4	ICAL	1	10	JXM	1660 LEVEL 4
03/17/2014	12:55	E9c1711.D	IAR140317-01	1660-5	ICAL	1	11	JXM	1660 LEVEL 5
03/17/2014	13:06	E9c1712.D	WAR140205-60	1660	ICV	1	12	JXM	PASSES BOTH COLUMNS
03/17/2014	13:17	E9c1713.D	WAR131120-62	1262	CCV	1	13	JXM	PASSES BOTH COLUMNS
03/17/2014	13:28	E9c1714.D	WAR140208-68	1268	CCV	1	14	JXM	PATTERN ONLY
03/17/2014	13:39	E9c1715.D	WAR140208-32	1232	CCV	1	15	JXM	PATTERN ONLY
03/17/2014	13:50	E9c1716.D	WAR140208-21	1221	CCV	1	16	JXM	PATTERN ONLY
03/17/2014	14:02	E9c1717.D	WAR140115-88	IBK	BLANK	1	17	JXM	CLEAN
03/17/2014	14:13	E9c1718.D	343985001	PCGE	1372139	2	18	JXM	USE: HIGHER, Cu and alumina cleanup
03/17/2014	14:28	E9c1719.D	WAR140205-60	1660	CCV	1	19	JXM	PASSES BOTH COLUMNS
03/17/2014	14:39	E9c1720.D	WAR140115-88	IBK	BLANK	1	20	JXM	CLEAN
03/17/2014	14:50	E9c1721.D	1203050610	MB	1372664	1	21	JXM	USE: HIGHER, Cu and alumina cleanup
03/17/2014	15:02	E9c1722.D	1203050611	LCS	1372664	1	22	JXM	USE: HIGHER, Cu and alumina cleanup
03/17/2014	15:13	E9c1723.D	1203050612	LCSD	1372664	1	23	JXM	USE: HIGHER, Cu and alumina cleanup
03/17/2014	15:24	E9c1724.D	344333001	SONO	1372664	1	24	JXM	USE: HIGHER, Cu and alumina cleanup
03/17/2014	15:39	E9c1725.D	WAR140205-60	1660	CCV	1	25	JXM	PASSES BOTH COLUMNS
03/17/2014	15:50	E9c1726.D	WAR140115-88	IBK	BLANK	1	26	JXM	CLEAN
03/17/2014	16:02	E9c1727.D	1203050570	MB	1372648	1	27	JXM	USE: FRONT, Cu and alumina cleanup
03/17/2014	16:13	E9c1728.D	1203050571	LCS	1372648	1	28	JXM	USE: FRONT, Cu and alumina cleanup

ORGANIC RUN LOG - INSTRUMENT ID#ECD9

GEL ORGANIC RUN LOG 031714.S

03/17/2014 16:24	E9c1729.D	344164001	WCSO	1372648	1	29	JXM	USE: FRONT, Cu and alumina cleanup
03/17/2014 16:39	E9c1730.D	1203050572	MS	1372648	1	30	JXM	USE: FRONT, Cu and alumina cleanup
03/17/2014 16:53	E9c1731.D	1203050573	MSD	1372648	1	31	JXM	USE: FRONT, Cu and alumina cleanup
03/17/2014 17:08	E9c1732.D	WAR140205-60	1660	CCV	1	32	JXM	PASSES BOTH COLUMNS
03/17/2014 17:19	E9c1733.D	WAR140115-88	IBK	BLANK	1	33	JXM	CLEAN

ORGANIC RUN LOG - INSTRUMENT ID#ECD9

GEL ORGANIC RUN LOG 032014.S

DATE: 20-Mar-14 METHOD: See Data OPERATOR: YS1 REVIEWED BY:

Solven ID: 2067498-B4 REVIEWED DATE:
Alumina ID : 140226A
Copper ID : 2048561-A

Calibration & QC Information:
Initial Calibration Dates: See Calibration History
Initial Calibration Std ID's: See associated data and run log Sequence Number: 032014.S
GEL SOP: GL-OA-E-040

Analysis Date	Time	Data File	Lab Sample ID	Client	Batch #	Dil. Factor	Slot#	Analyst	Comments
03/20/2014	05:19	E9c2001.D	WAR140115-88	IBK	BLANK	1	1	YS1	CLEAN
03/20/2014	05:30	E9c2002.D	WAR131205-DDT	DDT	ICS	1	2	YS1	DDT ANALOG
03/20/2014	05:42	E9c2003.D	WAR140205-60	1660	CCV	1	3	YS1	PASSED ON BOTH COLUMNS
03/20/2014	05:53	E9c2004.D	WAR131205-54	1254	CCV	1	4	YS1	DUSE RE-ICAL
03/20/2014	06:05	E9c2005.D	WAR131111-42	1242	CCV	1	5	YS1	DUSE RE-ICAL
03/20/2014	06:16	E9c2006.D	WAR131230-48	1248	CCV	1	6	YS1	DUSE RE-ICAL
03/20/2014	06:28	E9c2007.D	WAR131120-62	1262	CCV	1	7	YS1	DUSE RE-ICAL
03/20/2014	06:42	E9c2008.D	WAR140208-68	1268	CCV	1	8	YS1	DUSE RE-ICAL
03/20/2014	06:54	E9c2009.D	WAR140318-05	1254-1	ICAL	1	9	YS1	
03/20/2014	07:05	E9c2010.D	WAR140318-06	1254-2	ICAL	1	10	YS1	
03/20/2014	07:17	E9c2011.D	WAR140318-07	1254-3	ICAL	1	11	YS1	
03/20/2014	07:28	E9c2012.D	WAR140318-08	1254-4	ICAL	1	12	YS1	
03/20/2014	07:39	E9c2013.D	IAR131113-02	1254-5	ICAL	1	13	YS1	
03/20/2014	08:04	E9c2014.D	WAR131205-54	1254	ICV	1	14	YS1	PASSED ON BOTH COLUMNS
03/20/2014	08:15	E9c2015.D	WAR140318-29	1221-1	ICAL	1	15	YS1	
03/20/2014	08:27	E9c2016.D	WAR140318-30	1221-2	ICAL	1	16	YS1	
03/20/2014	08:38	E9c2017.D	WAR140318-31	1221-3	ICAL	1	17	YS1	
03/20/2014	08:49	E9c2018.D	WAR140318-32	1221-4	ICAL	1	18	YS1	
03/20/2014	09:01	E9c2019.D	IAR131001-01	1221-5	ICAL	1	19	YS1	
03/20/2014	09:12	E9c2020.D	WAR140208-21	1221	ICV	1	20	YS1	PASSED ON BOTH COLUMNS
03/20/2014	09:23	E9c2021.D	WAR140208-09	1242-1	ICAL	1	21	YS1	
03/20/2014	09:35	E9c2022.D	WAR140208-10	1242-2	ICAL	1	22	YS1	
03/20/2014	09:46	E9c2023.D	WAR140208-11	1242-3	ICAL	1	23	YS1	
03/20/2014	09:58	E9c2024.D	WAR140208-12	1242-4	ICAL	1	24	YS1	
03/20/2014	10:09	E9c2025.D	IAR140106-01	1242-5	ICAL	1	25	YS1	
03/20/2014	10:20	E9c2026.D	WAR131111-42	1242	ICV	1	26	YS1	PASSED ON BOTH COLUMNS
03/20/2014	10:32	E9c2027.D	WAR140208-13	1248-1	ICAL	1	27	YS1	
03/20/2014	10:43	E9c2028.D	WAR140208-14	1248-2	ICAL	1	28	YS1	

ORGANIC RUN LOG - INSTRUMENT ID#ECD9

GEL ORGANIC RUN LOG 032014.S

03/20/2014 10:55	E9c2029.D	WAR140208-15	1248-3	ICAL	1	29	YS1	
03/20/2014 11:06	E9c2030.D	WAR140208-16	1248-4	ICAL	1	30	YS1	
03/20/2014 11:17	E9c2031.D	IAR131113-01	1248-5	ICAL	1	31	YS1	
03/20/2014 11:29	E9c2032.D	WAR131230-48	1248	ICV	1	32	YS1	PASSED ON BOTH COLUMNS
03/20/2014 11:40	E9c2033.D	WAR140208-17	1262-1	ICAL	1	33	YS1	
03/20/2014 11:52	E9c2034.D	WAR140208-18	1262-2	ICAL	1	34	YS1	
03/20/2014 12:05	E9c2035.D	WAR140208-19	1262-3	ICAL	1	35	YS1	
03/20/2014 12:16	E9c2036.D	WAR140208-20	1262-4	ICAL	1	36	YS1	
03/20/2014 12:28	E9c2037.D	IAR131127-01	1262-5	ICAL	1	37	YS1	
03/20/2014 12:39	E9c2038.D	WAR131120-62	1262	ICV	1	38	YS1	PASSED ON BOTH COLUMNS
03/20/2014 12:51	E9c2039.D	WAR140208-21	1268-1	ICAL	1	39	YS1	
03/20/2014 13:02	E9c2040.D	WAR140208-22	1268-2	ICAL	1	40	YS1	
03/20/2014 13:13	E9c2041.D	WAR140208-23	1268-3	ICAL	1	41	YS1	
03/20/2014 13:25	E9c2042.D	WAR140208-24	1268-4	ICAL	1	42	YS1	
03/20/2014 13:36	E9c2043.D	IAR131010-01	1268-5	ICAL	1	43	YS1	
03/20/2014 13:47	E9c2044.D	WAR140208-68	1268	ICV	1	44	YS1	PASSED ON BOTH COLUMNS
03/20/2014 13:59	E9c2045.D	WAR140208-32	1232	CCV	1	45	YS1	PATTERN ONLY
03/20/2014 14:10	E9c2046.D	WAR140115-88	IBK	BLANK	1	46	YS1	CLEAN
03/20/2014 14:22	E9c2047.D	1203052158	MB	1373411	1	47	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 14:33	E9c2048.D	1203052159	LCS	1373411	1	48	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 14:44	E9c2049.D	344235001	ARGN	1373411	2	49	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 14:59	E9c2050.D	344235002	ARGN	1373411	2	50	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 15:13	E9c2051.D	1203052160	MS	1373411	2	51	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 15:27	E9c2052.D	1203052161	MSD	1373411	2	52	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 15:42	E9c2053.D	344235003	ARGN	1373411	20	53	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 15:56	E9c2054.D	344565001	LLNL	1373411	5	54	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 16:11	E9c2055.D	344565002	LLNL	1373411	2	55	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 16:25	E9c2056.D	344565003	LLNL	1373411	2	56	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 16:40	E9c2057.D	WAR140205-60	1660	CCV	1	57	YS1	PASSED ON BOTH COLUMNS
03/20/2014 16:51	E9c2058.D	WAR140115-88	IBK	BLANK	1	58	YS1	CLEAN
03/20/2014 17:02	E9c2059.D	1203048288	MB	1371740	1	59	YS1	DUSE RE
03/20/2014 17:14	E9c2060.D	1203048289	LCS	1371740	1	60	YS1	DUSE RE LCS LOW
03/20/2014 17:25	E9c2061.D	340443001	QCQA	1371740	1	61	YS1	DUSE RE
03/20/2014 17:37	E9c2062.D	340443002	QCQA	1371740	1	62	YS1	DUSE RE
03/20/2014 17:48	E9c2063.D	340443003	QCQA	1371740	1	63	YS1	DUSE RE
03/20/2014 17:59	E9c2064.D	340443004	QCQA	1371740	1	64	YS1	DUSE RE
03/20/2014 18:11	E9c2065.D	340443005	QCQA	1371740	1	65	YS1	DUSE RE
03/20/2014 18:22	E9c2066.D	340443006	QCQA	1371740	1	66	YS1	DUSE RE
03/20/2014 18:33	E9c2067.D	340443007	QCQA	1371740	1	67	YS1	DUSE RE
03/20/2014 18:45	E9c2068.D	340443008	QCQA	1371740	1	68	YS1	DUSE RE
03/20/2014 18:56	E9c2069.D	WAR140205-60	1660	CCV	1	69	YS1	PASSED ON BOTH COLUMNS

ORGANIC RUN LOG - INSTRUMENT ID#ECD9

GEL ORGANIC RUN LOG 032014.S

03/20/2014 19:08	E9c2070.D	WAR140115-88	IBK	BLANK	1	70	YS1	CLEAN
03/20/2014 19:19	E9c2071.D	1203053455	MB	1373935	1	71	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 19:30	E9c2072.D	1203053456	LCS	1373935	1	72	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 19:42	E9c2073.D	1203053457	LCSD	1373935	1	73	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 19:53	E9c2074.D	344738004	UCOR	1373935	1	74	YS1	REPORT HIGHER. ALUMINA CLEANED
03/20/2014 20:04	E9c2075.D	WAR140205-60	1660	CCV	1	75	YS1	PASSED ON BOTH COLUMNS
03/20/2014 20:16	E9c2076.D	WAR140115-88	IBK	BLANK	1	76	YS1	CLEAN

ORGANIC RUN LOG - INSTRUMENT ID#ECD9

GEL ORGANIC RUN LOG 032314.S

DATE: 23-Mar-14 METHOD: See Data OPERATOR: YS1 REVIEWED BY:

Solven ID: 2067498-B4 REVIEWED DATE:
Alumina ID : 140226A
Copper ID : 2048561-A

Calibration & QC Information:
Initial Calibration Dates: See Calibration History
Initial Calibration Std ID's: See associated data and run log Sequence Number: 032314.S
GEL SOP: GL-OA-E-040

Analysis Date	Time	Data File	Lab Sample ID	Client	Batch #	Dil. Factor	Slot#	Analyst	Comments
03/23/2014	08:19	E9c2301.D	WAR140115-88	IBK	BLANK	1	1	YS1	CLEAN
03/23/2014	08:30	E9c2302.D	WAR131205-DDT	DDT	ICS	1	2	YS1	DDT ANALOG
03/23/2014	08:42	E9c2303.D	WAR140205-60	1660	CCV	1	3	YS1	PASSED ON BOTH COLUMNS
03/23/2014	08:53	E9c2304.D	WAR131205-54	1254	CCV	1	4	YS1	PASSED ON BOTH COLUMNS
03/23/2014	09:04	E9c2305.D	WAR131111-42	1242	CCV	1	5	YS1	PASSED ON BOTH COLUMNS
03/23/2014	09:16	E9c2306.D	WAR131230-48	1248	CCV	1	6	YS1	PASSED ON BOTH COLUMNS
03/23/2014	09:27	E9c2307.D	WAR131120-62	1262	CCV	1	7	YS1	PASSED ON BOTH COLUMNS
03/23/2014	09:38	E9c2308.D	WAR140208-68	1268	CCV	1	8	YS1	PASSED ON BOTH COLUMNS
03/23/2014	09:50	E9c2309.D	WAR140208-21	1221	CCV	1	9	YS1	PASSED ON BOTH COLUMNS
03/23/2014	10:01	E9c2310.D	WAR140208-32	1232	CCV	1	10	YS1	PATTERN ONLY
03/23/2014	10:12	E9c2311.D	WAR140115-88	IBK	BLANK	1	11	YS1	CLEAN
03/23/2014	10:24	E9c2312.D	1203052771	MB	1373644	1	12	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	10:35	E9c2313.D	1203052774	LCS	1373644	1	13	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	10:47	E9c2314.D	344334001	ARSL	1373644	1	14	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	11:01	E9c2315.D	344334002	ARSL	1373644	1	15	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	11:16	E9c2316.D	344334003	ARSL	1373644	1	16	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	11:30	E9c2317.D	344334004	ARSL	1373644	1	17	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	11:45	E9c2318.D	344334008	ARSL	1373644	1	18	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	11:59	E9c2319.D	344589001	ARSL	1373644	1	19	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	12:13	E9c2320.D	344589002	ARSL	1373644	1	20	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	12:27	E9c2321.D	344589003	ARSL	1373644	1	21	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	12:41	E9c2322.D	WAR140205-60	1660	CCV	1	22	YS1	PASSED ON BOTH COLUMNS
03/23/2014	12:53	E9c2323.D	WAR140115-88	IBK	BLANK	1	23	YS1	CLEAN
03/23/2014	13:04	E9c2324.D	344589004	ARSL	1373644	1	24	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	13:18	E9c2325.D	1203052772	MS	1373644	1	25	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	13:33	E9c2326.D	1203052773	MSD	1373644	1	26	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	13:47	E9c2327.D	344589005	ARSL	1373644	1	27	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014	14:02	E9c2328.D	344589006	ARSL	1373644	1	28	YS1	REPORT HIGHER. CU & ALUMINA CLEANED

ORGANIC RUN LOG - INSTRUMENT ID#ECD9

GEL ORGANIC RUN LOG 032314.S

03/23/2014 14:16	E9c2329.D	344589007	ARSL	1373644	1	29	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014 14:31	E9c2330.D	344589008	ARSL	1373644	1	30	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014 14:45	E9c2331.D	344589009	ARSL	1373644	1	31	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014 14:59	E9c2332.D	344675001	ARSL	1373644	1	32	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014 15:14	E9c2333.D	344675002	ARSL	1373644	1	33	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014 15:28	E9c2334.D	WAR140205-60	1660	CCV	1	34	YS1	PASSED ON BOTH COLUMNS
03/23/2014 15:43	E9c2335.D	WAR140115-88	IBK	BLANK	1	35	YS1	CLEAN
03/23/2014 15:57	E9c2336.D	344675003	ARSL	1373644	1	36	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014 16:11	E9c2337.D	344675004	ARSL	1373644	1	37	YS1	REPORT HIGHER. CU & ALUMINA CLEANED
03/23/2014 16:26	E9c2338.D	WAR140205-60	1660	CCV	1	38	YS1	PASSED ON BOTH COLUMNS
03/23/2014 16:40	E9c2339.D	WAR140115-88	IBK	BLANK	1	39	YS1	CLEAN

Metals Analysis

Case Narrative

Metals Fractional Narrative
ARS International, LLC (ARSL)
SDG 2014-2961

Sample Analysis

Sample ID	Client ID
344334001	CACV-14-49260
344334002	CACV-14-49263
344334003	CACV-14-49261
344334004	CACV-14-49262
344334005	CAWA-14-49297
344334006	CACV-14-49264
344334007	CAWA-14-49298
344334008	CAWA-14-49271
1203050007	Method Blank (MB) **ICP**
1203050018	Method Blank (MB) **ICP**
1203050008	Laboratory Control Sample (LCS)
1203050019	Laboratory Control Sample (LCS)
1203050022	344334001(CACV-14-49260L) Serial Dilution (SD)
1203050012	344383007(CAWA-14-54768L) Serial Dilution (SD)
1203050020	344334001(CACV-14-49260D) Sample Duplicate (DUP)
1203050009	344383007(CAWA-14-54768D) Sample Duplicate (DUP)
1203050021	344334001(CACV-14-49260S) Matrix Spike (MS)
1203050010	344383007(CAWA-14-54768S) Matrix Spike (MS)
1203063233	344334001(CACV-14-49260PS) Post Spike (PS)
1203048997	Method Blank (MB) **ICP-MS**
1203049011	Method Blank (MB) **ICP-MS**
1203048998	Laboratory Control Sample (LCS)
1203049012	Laboratory Control Sample (LCS)
1203049015	344334001(CACV-14-49260L) Serial Dilution (SD)
1203049001	344334006(CACV-14-49264L) Serial Dilution (SD)
1203049013	344334001(CACV-14-49260D) Sample Duplicate (DUP)
1203048999	344334006(CACV-14-49264D) Sample Duplicate (DUP)
1203049014	344334001(CACV-14-49260S) Matrix Spike (MS)
1203049000	344334006(CACV-14-49264S) Matrix Spike (MS)
1203060085	344334001(CACV-14-49260PS) Post Spike (PS)
1203056730	344334006(CACV-14-49264PS) Post Spike (PS)

1203056170	Method Blank (MB) **CVAA**
1203059494	Method Blank (MB) **CVAA**
1203056171	Laboratory Control Sample (LCS)
1203059495	Laboratory Control Sample (LCS)
1203059498	344334001(CACV-14-49260L) Serial Dilution (SD)
1203056174	344334006(CACV-14-49264L) Serial Dilution (SD)
1203059496	344334001(CACV-14-49260D) Sample Duplicate (DUP)
1203056172	344334006(CACV-14-49264D) Sample Duplicate (DUP)
1203059497	344334001(CACV-14-49260S) Matrix Spike (MS)
1203056173	344334006(CACV-14-49264S) Matrix Spike (MS)

Samples 344334 001, 002, 003, 004, 005, 007 and 008 in this SDG were analyzed on a "dry weight" basis. Samples 344334 006 in this SDG were analyzed on an "as received" basis.

Method/Analysis Information

Analytical Batch:	1372413, 1372417, 1372024, 1372030, 1375114 and 1376453
Prep Batch :	1372412, 1372416, 1372023, 1372029, 1375113 and 1376450
Standard Operating Procedures:	GL-MA-E-013 REV# 22, GL-MA-E-006 REV# 9, GL-MA-E-009 REV# 22, GL-MA-E-014 REV# 25 and GL-MA-E-010 REV# 27
Analytical Method:	SW846 3005A/6010C, SW846 3050B/6010C, SW846 3005A/6020A, SW846 3050B/6020A, EPA 245.1/245.2 and SW846 7471A
Prep Method :	SW846 3005A, SW846 3050B, EPA 245.1/245.2 Prep and SW846 7471A Prep

Preparation/Analytical Method Verification
The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis-ICP was performed on a PE 7300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener

nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL Requirements
The CRDL standard recoveries met the advisory control limits except for antimony in the closing standards in files 040814A-4 at 08:43 and 040714-3 at 13:11. The PQL standard recovered high for antimony, however client sample concentrations were not detected above the MDL except for sample 344334003 (CACV-14-49261). See data exception report (DER ID 1281119) in the miscellaneous data section of this data package.

Potassium also recovered high in the closing standard in file 032814-1 at 18:52. Potassium recovered high, however client sample concentrations were greater than two times the PQL except for sample 344334006 (CACV-14-49264)-ICP. See data exception report (DER ID 1280950) in the miscellaneous data section of this data package.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 344383007 (CAWA-14-54768)-ICP, 344334001 (CACV-14-49260)-ICP, ICP-MS and CVAA and 344334006 (CACV-14-49264)-ICP-MS and CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS did not meet all the recommended quality control acceptance criteria for percent recoveries for the applicable analytes. The recoveries for aluminum, barium, and copper were not within the acceptance limits in sample 1203050021 (CACV-14-49260). The recovery for thallium was not within the acceptance limits in sample 1203049000 (CACV-14-49264)-ICPMS. The recovery for nickel was not within the acceptance limits in sample 1203049014 (CACV-14-49260)-ICP-MS. See data exception reports (DER ID 1281119, 1278160, and 1280166) in the miscellaneous data section of this data package.

Duplicate Relative Percent Difference (RPD) Statement
The relative percent difference (RPD) obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the contract required detection limit (RL), a control of +/-RL is used to evaluate the DUP results. Not all applicable analytes met these requirements. The RPD value for copper was not within the acceptance limits in sample 1203050020 (CACV-14-49260). See data exception report (DER ID 1281119).

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the established acceptance criteria.

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the absence of matrix interferences in the post-digested sample.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG were diluted the standard two times for solids analyzed on the ICPMS.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. Data exception reports (DER ID 1281119, 1278160, 1280166, and 1280950) were generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Pat Steele **Date:** 04/08/2014

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-2961 GEL Work Order: 344334

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

J Value is estimated

N Metals--The Matrix spike sample recovery is not within specified control limits

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by Pat Steele 04/08/2014

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344334001 **BASIS:** Dry Weight **DATE COLLECTED** 07−MAR−14

CLIENT ID: CACV−14−49260 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: S **%SOLIDS:** 94.2

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	1610000	ug/kg	N	6760	19900	19900	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−36−0	Antimony	994	ug/kg	U	328	994	994	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−38−2	Arsenic	594	ug/kg	J	205	1030	1030	2	MS	BAJ	03/31/14 21:15	140331−7	1372030
7440−39−3	Barium	130000	ug/kg	N	99.4	497	497	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−41−7	Beryllium	191	ug/kg		20.5	103	103	2	MS	BAJ	03/31/14 21:15	140331−7	1372030
7440−43−9	Cadmium	135	ug/kg	J	99.4	497	497	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−70−2	Calcium	402000	ug/kg		7950	24800	24800	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−47−3	Chromium	2560	ug/kg		149	497	497	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−48−4	Cobalt	1520	ug/kg		149	497	497	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−50−8	Copper	27200	ug/kg	*N	298	994	994	1	P	HSC	04/07/14 09:44	040714−3	1372417
7439−89−6	Iron	9580000	ug/kg		7950	24800	24800	1	P	HSC	04/07/14 09:44	040714−3	1372417
7439−92−1	Lead	4940	ug/kg		328	994	994	1	P	HSC	04/07/14 09:44	040714−3	1372417
7439−95−4	Magnesium	347000	ug/kg		8450	29800	29800	1	P	HSC	04/07/14 09:44	040714−3	1372417
7439−96−5	Manganese	238000	ug/kg		199	994	994	1	P	HSC	04/07/14 09:44	040714−3	1372417
7439−97−6	Mercury	12.7	ug/kg	U	4.25	12.7	12.7	1	AV	NOR1	04/01/14 12:31	040114S1−9	1376453
7440−02−0	Nickel	1410	ug/kg	N	103	411	411	2	MS	BAJ	04/01/14 15:44	140401−8	1372030
7440−09−7	Potassium	289000	ug/kg		6360	24800	24800	1	P	HSC	04/07/14 09:44	040714−3	1372417
7782−49−2	Selenium	1030	ug/kg	U	339	1030	1030	2	MS	BAJ	03/31/14 21:15	140331−7	1372030
7440−22−4	Silver	424	ug/kg	J	99.4	497	497	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−23−5	Sodium	40100	ug/kg		6960	24800	24800	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−28−0	Thallium	411	ug/kg	U	61.6	411	411	2	MS	BAJ	03/31/14 21:15	140331−7	1372030
7440−62−2	Vanadium	8420	ug/kg		99.4	497	497	1	P	HSC	04/07/14 09:44	040714−3	1372417
7440−66−6	Zinc	39600	ug/kg		398	994	994	1	P	HSC	04/07/14 09:44	040714−3	1372417

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1372030	1372029	SW846 3050B	0.517	g	50	mL	03/19/14	AXG2
1372417	1372416	SW846 3050B	0.534	g	50	mL	04/04/14	MTM1
1376453	1376450	SW846 7471A Prep	0.502	g	30	mL	03/31/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344334002 **BASIS:** Dry Weight **DATE COLLECTED** 07−MAR−14

CLIENT ID: CACV−14−49263 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: S **%SOLIDS:** 94

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	1560000	ug/kg	N	6970	20500	20500	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−36−0	Antimony	1020	ug/kg	U	338	1020	1020	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−38−2	Arsenic	874	ug/kg	J	212	1060	1060	2	MS	BAJ	03/31/14 22:08	140331−7	1372030
7440−39−3	Barium	129000	ug/kg	N	102	512	512	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−41−7	Beryllium	228	ug/kg		21.2	106	106	2	MS	BAJ	03/31/14 22:08	140331−7	1372030
7440−43−9	Cadmium	512	ug/kg	U	102	512	512	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−70−2	Calcium	442000	ug/kg		8200	25600	25600	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−47−3	Chromium	3210	ug/kg		154	512	512	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−48−4	Cobalt	1420	ug/kg		154	512	512	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−50−8	Copper	1960	ug/kg	*N	307	1020	1020	1	P	HSC	04/07/14 10:22	040714−3	1372417
7439−89−6	Iron	9650000	ug/kg		8200	25600	25600	1	P	HSC	04/07/14 10:22	040714−3	1372417
7439−92−1	Lead	4340	ug/kg		338	1020	1020	1	P	HSC	04/07/14 10:22	040714−3	1372417
7439−95−4	Magnesium	437000	ug/kg		8710	30700	30700	1	P	HSC	04/07/14 10:22	040714−3	1372417
7439−96−5	Manganese	232000	ug/kg		205	1020	1020	1	P	HSC	04/07/14 10:22	040714−3	1372417
7439−97−6	Mercury	12.3	ug/kg	U	4.12	12.3	12.3	1	AV	NOR1	04/01/14 12:43	040114S1−9	1376453
7440−02−0	Nickel	1460	ug/kg	N	106	424	424	2	MS	BAJ	04/01/14 16:03	140401−8	1372030
7440−09−7	Potassium	342000	ug/kg		6560	25600	25600	1	P	HSC	04/07/14 10:22	040714−3	1372417
7782−49−2	Selenium	1060	ug/kg	U	350	1060	1060	2	MS	BAJ	03/31/14 22:08	140331−7	1372030
7440−22−4	Silver	136	ug/kg	J	102	512	512	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−23−5	Sodium	37900	ug/kg		7170	25600	25600	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−28−0	Thallium	424	ug/kg	U	63.6	424	424	2	MS	BAJ	03/31/14 22:08	140331−7	1372030
7440−62−2	Vanadium	8840	ug/kg		102	512	512	1	P	HSC	04/07/14 10:22	040714−3	1372417
7440−66−6	Zinc	38200	ug/kg		410	1020	1020	1	P	HSC	04/07/14 10:22	040714−3	1372417

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1372030	1372029	SW846 3050B	0.502	g	50	mL	03/19/14	AXG2
1372417	1372416	SW846 3050B	0.519	g	50	mL	04/04/14	MTM1
1376453	1376450	SW846 7471A Prep	0.519	g	30	mL	03/31/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344334003 **BASIS:** Dry Weight **DATE COLLECTED** 07−MAR−14

CLIENT ID: CACV−14−49261 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: S **%SOLIDS:** 71

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	5080000	ug/kg	N	9330	27400	27400	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−36−0	Antimony	540	ug/kg	J	453	1370	1370	1	P	HSC	04/08/14 08:33	040814A−4	1372417
7440−38−2	Arsenic	1230	ug/kg	J	275	1370	1370	2	MS	BAJ	03/31/14 22:15	140331−7	1372030
7440−39−3	Barium	757000	ug/kg	N	137	686	686	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−41−7	Beryllium	597	ug/kg		27.5	137	137	2	MS	BAJ	03/31/14 22:15	140331−7	1372030
7440−43−9	Cadmium	190	ug/kg	J	137	686	686	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−70−2	Calcium	2280000	ug/kg		11000	34300	34300	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−47−3	Chromium	5170	ug/kg		206	686	686	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−48−4	Cobalt	2680	ug/kg		206	686	686	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−50−8	Copper	9730	ug/kg	*N	411	1370	1370	1	P	HSC	04/07/14 10:12	040714−3	1372417
7439−89−6	Iron	8710000	ug/kg		11000	34300	34300	1	P	HSC	04/07/14 10:12	040714−3	1372417
7439−92−1	Lead	11700	ug/kg		453	1370	1370	1	P	HSC	04/07/14 10:12	040714−3	1372417
7439−95−4	Magnesium	893000	ug/kg		11700	41100	41100	1	P	HSC	04/07/14 10:12	040714−3	1372417
7439−96−5	Manganese	411000	ug/kg		274	1370	1370	1	P	HSC	04/07/14 10:12	040714−3	1372417
7439−97−6	Mercury	14.7	ug/kg	J	5.41	16.1	16.1	1	AV	NOR1	04/01/14 12:44	040114S1−9	1376453
7440−02−0	Nickel	4870	ug/kg	N	137	550	550	2	MS	BAJ	04/01/14 16:05	140401−8	1372030
7440−09−7	Potassium	744000	ug/kg		8780	34300	34300	1	P	HSC	04/07/14 10:12	040714−3	1372417
7782−49−2	Selenium	1370	ug/kg	U	454	1370	1370	2	MS	BAJ	03/31/14 22:15	140331−7	1372030
7440−22−4	Silver	1270	ug/kg		137	686	686	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−23−5	Sodium	69100	ug/kg		9600	34300	34300	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−28−0	Thallium	115	ug/kg	J	82.5	550	550	2	MS	BAJ	03/31/14 22:15	140331−7	1372030
7440−62−2	Vanadium	11300	ug/kg		137	686	686	1	P	HSC	04/07/14 10:12	040714−3	1372417
7440−66−6	Zinc	39500	ug/kg		549	1370	1370	1	P	HSC	04/07/14 10:12	040714−3	1372417

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1372030	1372029	SW846 3050B	0.51	g	50	mL	03/19/14	AXG2
1372417	1372416	SW846 3050B	0.511	g	50	mL	04/04/14	MTM1
1376453	1376450	SW846 7471A Prep	0.521	g	30	mL	03/31/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344334004 **BASIS:** Dry Weight **DATE COLLECTED** 07−MAR−14

CLIENT ID: CACV−14−49262 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: S **%SOLIDS:** 93.6

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	1520000	ug/kg	N	6840	20100	20100	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−36−0	Antimony	1010	ug/kg	U	332	1010	1010	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−38−2	Arsenic	485	ug/kg	J	205	1020	1020	2	MS	BAJ	03/31/14 22:22	140331−7	1372030
7440−39−3	Barium	159000	ug/kg	N	101	503	503	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−41−7	Beryllium	169	ug/kg		20.5	102	102	2	MS	BAJ	03/31/14 22:22	140331−7	1372030
7440−43−9	Cadmium	503	ug/kg	U	101	503	503	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−70−2	Calcium	375000	ug/kg		8050	25200	25200	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−47−3	Chromium	1970	ug/kg		151	503	503	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−48−4	Cobalt	1190	ug/kg		151	503	503	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−50−8	Copper	2220	ug/kg	*N	302	1010	1010	1	P	HSC	04/07/14 10:26	040714−3	1372417
7439−89−6	Iron	9130000	ug/kg		8050	25200	25200	1	P	HSC	04/07/14 10:26	040714−3	1372417
7439−92−1	Lead	4270	ug/kg		332	1010	1010	1	P	HSC	04/07/14 10:26	040714−3	1372417
7439−95−4	Magnesium	270000	ug/kg		8560	30200	30200	1	P	HSC	04/07/14 10:26	040714−3	1372417
7439−96−5	Manganese	238000	ug/kg		201	1010	1010	1	P	HSC	04/07/14 10:26	040714−3	1372417
7439−97−6	Mercury	8.76	ug/kg	J	3.84	11.5	11.5	1	AV	NOR1	04/01/14 12:46	040114S1−9	1376453
7440−02−0	Nickel	1220	ug/kg	N	102	410	410	2	MS	BAJ	04/01/14 16:07	140401−8	1372030
7440−09−7	Potassium	257000	ug/kg		6440	25200	25200	1	P	HSC	04/07/14 10:26	040714−3	1372417
7782−49−2	Selenium	1020	ug/kg	U	338	1020	1020	2	MS	BAJ	03/31/14 22:22	140331−7	1372030
7440−22−4	Silver	149	ug/kg	J	101	503	503	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−23−5	Sodium	45400	ug/kg		7050	25200	25200	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−28−0	Thallium	410	ug/kg	U	61.4	410	410	2	MS	BAJ	03/31/14 22:22	140331−7	1372030
7440−62−2	Vanadium	7010	ug/kg		101	503	503	1	P	HSC	04/07/14 10:26	040714−3	1372417
7440−66−6	Zinc	38200	ug/kg		403	1010	1010	1	P	HSC	04/07/14 10:26	040714−3	1372417

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1372030	1372029	SW846 3050B	0.522	g	50	mL	03/19/14	AXG2
1372417	1372416	SW846 3050B	0.531	g	50	mL	04/04/14	MTM1
1376453	1376450	SW846 7471A Prep	0.56	g	30	mL	03/31/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344334005 **BASIS:** Dry Weight **DATE COLLECTED** 07−MAR−14

CLIENT ID: CAWA−14−49297 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: S **%SOLIDS:** 91.4

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2350000	ug/kg	N	7100	20900	20900	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−36−0	Antimony	1040	ug/kg	U	344	1040	1040	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−38−2	Arsenic	786	ug/kg	J	218	1090	1090	2	MS	BAJ	03/31/14 22:28	140331−7	1372030
7440−39−3	Barium	108000	ug/kg	N	104	522	522	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−41−7	Beryllium	420	ug/kg		21.8	109	109	2	MS	BAJ	03/31/14 22:28	140331−7	1372030
7440−43−9	Cadmium	522	ug/kg	U	104	522	522	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−70−2	Calcium	509000	ug/kg		8350	26100	26100	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−47−3	Chromium	3070	ug/kg		157	522	522	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−48−4	Cobalt	1310	ug/kg		157	522	522	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−50−8	Copper	2280	ug/kg	*N	313	1040	1040	1	P	HSC	04/07/14 10:19	040714−3	1372417
7439−89−6	Iron	8770000	ug/kg		8350	26100	26100	1	P	HSC	04/07/14 10:19	040714−3	1372417
7439−92−1	Lead	4600	ug/kg		344	1040	1040	1	P	HSC	04/07/14 10:19	040714−3	1372417
7439−95−4	Magnesium	467000	ug/kg		8870	31300	31300	1	P	HSC	04/07/14 10:19	040714−3	1372417
7439−96−5	Manganese	220000	ug/kg		209	1040	1040	1	P	HSC	04/07/14 10:19	040714−3	1372417
7439−97−6	Mercury	4.33	ug/kg	J	4.03	12	12	1	AV	NOR1	04/01/14 12:48	040114S1−9	1376453
7440−02−0	Nickel	1900	ug/kg	N	109	437	437	2	MS	BAJ	04/01/14 16:09	140401−8	1372030
7440−09−7	Potassium	418000	ug/kg		6680	26100	26100	1	P	HSC	04/07/14 10:19	040714−3	1372417
7782−49−2	Selenium	1090	ug/kg	U	360	1090	1090	2	MS	BAJ	03/31/14 22:28	140331−7	1372030
7440−22−4	Silver	195	ug/kg	J	104	522	522	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−23−5	Sodium	54400	ug/kg		7300	26100	26100	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−28−0	Thallium	79.9	ug/kg	J	65.5	437	437	2	MS	BAJ	03/31/14 22:28	140331−7	1372030
7440−62−2	Vanadium	9840	ug/kg		104	522	522	1	P	HSC	04/07/14 10:19	040714−3	1372417
7440−66−6	Zinc	33900	ug/kg		417	1040	1040	1	P	HSC	04/07/14 10:19	040714−3	1372417

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1372030	1372029	SW846 3050B	0.501	g	50	mL	03/19/14	AXG2
1372417	1372416	SW846 3050B	0.524	g	50	mL	04/04/14	MTM1
1376453	1376450	SW846 7471A Prep	0.546	g	30	mL	03/31/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** EPA

SAMPLE ID: 344334006 **BASIS:** As Received **DATE COLLECTED** 07−MAR−14

CLIENT ID: CACV−14−49264 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7439−97−6	Mercury	0.20	ug/L	U	0.067	0.2	0.2	1	AV	NOR1	03/26/14 10:43	032614W1−10	1375114

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344334006 **BASIS:** As Received **DATE COLLECTED** 07−MAR−14

CLIENT ID: CACV−14−49264 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	200	ug/L	U	68	200	200	1	P	HSC	03/21/14 17:09	032114−2	1372413
7440−36−0	Antimony	3	ug/L	U	1	3	3	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7440−38−2	Arsenic	5	ug/L	U	1.7	5	5	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7440−39−3	Barium	3.33	ug/L	J	1	5	5	1	P	HSC	03/21/14 17:09	032114−2	1372413
7440−41−7	Beryllium	5	ug/L	U	1	5	5	1	P	HSC	03/21/14 17:09	032114−2	1372413
7440−43−9	Cadmium	1	ug/L	U	0.11	1	1	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7440−70−2	Calcium	55.4	ug/L	J	50	200	200	1	P	HSC	03/21/14 17:09	032114−2	1372413
7440−47−3	Chromium	10	ug/L	U	2	10	10	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7440−48−4	Cobalt	5	ug/L	U	1	5	5	1	P	HSC	03/21/14 17:09	032114−2	1372413
7440−50−8	Copper	10	ug/L	U	3	10	10	1	P	HSC	03/21/14 17:09	032114−2	1372413
7439−89−6	Iron	85.6	ug/L	J	30	100	100	1	P	HSC	03/28/14 18:26	032814−1	1372413
7439−92−1	Lead	2	ug/L	U	0.5	2	2	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7439−95−4	Magnesium	300	ug/L	U	110	300	300	1	P	HSC	03/21/14 17:09	032114−2	1372413
7439−96−5	Manganese	3.18	ug/L	J	2	10	10	1	P	HSC	03/21/14 17:09	032114−2	1372413
7440−02−0	Nickel	2	ug/L	U	0.5	2	2	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7440−09−7	Potassium	51.7	ug/L	J	50	150	150	1	P	HSC	03/28/14 18:26	032814−1	1372413
7782−49−2	Selenium	5	ug/L	U	1.5	5	5	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7440−22−4	Silver	1	ug/L	U	0.2	1	1	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7440−23−5	Sodium	237	ug/L	J	100	300	300	1	P	HSC	03/21/14 17:09	032114−2	1372413
7440−28−0	Thallium	2	ug/L	UN	0.45	2	2	1	MS	BAJ	03/26/14 07:21	140325−5	1372024
7440−62−2	Vanadium	5	ug/L	U	1	5	5	1	P	HSC	03/21/14 17:09	032114−2	1372413
7440−66−6	Zinc	10	ug/L	U	3.3	10	10	1	P	HSC	03/21/14 17:09	032114−2	1372413

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1372024	1372023	SW846 3005A	50	mL	50	mL	03/19/14	AXG2
1372413	1372412	SW846 3005A	50	mL	50	mL	03/19/14	AXG2
1375114	1375113	EPA 245.1/245.2 Prep	20	mL	20	mL	03/25/14	AXS5

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**
AV	**EPA 245.1/245.2**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344334007 **BASIS:** Dry Weight **DATE COLLECTED** 07−MAR−14

CLIENT ID: CAWA−14−49298 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: S **%SOLIDS:** 89

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	3450000	ug/kg	N	7240	21300	21300	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−36−0	Antimony	1070	ug/kg	U	352	1070	1070	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−38−2	Arsenic	800	ug/kg	J	218	1090	1090	2	MS	BAJ	03/31/14 22:35	140331−7	1372030
7440−39−3	Barium	203000	ug/kg	N	107	533	533	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−41−7	Beryllium	365	ug/kg		21.8	109	109	2	MS	BAJ	03/31/14 22:35	140331−7	1372030
7440−43−9	Cadmium	162	ug/kg	J	107	533	533	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−70−2	Calcium	762000	ug/kg		8520	26600	26600	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−47−3	Chromium	4140	ug/kg		160	533	533	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−48−4	Cobalt	2220	ug/kg		160	533	533	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−50−8	Copper	3390	ug/kg	*N	320	1070	1070	1	P	HSC	04/07/14 10:30	040714−3	1372417
7439−89−6	Iron	10800000	ug/kg		8520	26600	26600	1	P	HSC	04/07/14 10:30	040714−3	1372417
7439−92−1	Lead	6710	ug/kg		352	1070	1070	1	P	HSC	04/07/14 10:30	040714−3	1372417
7439−95−4	Magnesium	540000	ug/kg		9060	32000	32000	1	P	HSC	04/07/14 10:30	040714−3	1372417
7439−96−5	Manganese	337000	ug/kg		213	1070	1070	1	P	HSC	04/07/14 10:30	040714−3	1372417
7439−97−6	Mercury	5.6	ug/kg	J	4.42	13.2	13.2	1	AV	NOR1	04/01/14 12:49	040114S1−9	1376453
7440−02−0	Nickel	2470	ug/kg	N	109	437	437	2	MS	BAJ	04/01/14 16:11	140401−8	1372030
7440−09−7	Potassium	532000	ug/kg		6820	26600	26600	1	P	HSC	04/07/14 10:30	040714−3	1372417
7782−49−2	Selenium	1090	ug/kg	U	360	1090	1090	2	MS	BAJ	03/31/14 22:35	140331−7	1372030
7440−22−4	Silver	216	ug/kg	J	107	533	533	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−23−5	Sodium	62300	ug/kg		7460	26600	26600	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−28−0	Thallium	92.4	ug/kg	J	65.5	437	437	2	MS	BAJ	03/31/14 22:35	140331−7	1372030
7440−62−2	Vanadium	11500	ug/kg		107	533	533	1	P	HSC	04/07/14 10:30	040714−3	1372417
7440−66−6	Zinc	41800	ug/kg		426	1070	1070	1	P	HSC	04/07/14 10:30	040714−3	1372417

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1372030	1372029	SW846 3050B	0.515	g	50	mL	03/19/14	AXG2
1372417	1372416	SW846 3050B	0.528	g	50	mL	04/04/14	MTM1
1376453	1376450	SW846 7471A Prep	0.512	g	30	mL	03/31/14	AXS5

***Analytical Methods:**

P **SW846 3050B/6010C**
MS **SW846 3050B/6020A**
AV **SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−2961 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344334008 **BASIS:** Dry Weight **DATE COLLECTED** 07−MAR−14

CLIENT ID: CAWA−14−49271 **LEVEL:** Low **DATE RECEIVED** 11−MAR−14

MATRIX: S **%SOLIDS:** 57

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	6520000	ug/kg	N	11200	33100	33100	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−36−0	Antimony	1650	ug/kg	U	545	1650	1650	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−38−2	Arsenic	1850	ug/kg		336	1680	1680	2	MS	BAJ	03/31/14 22:42	140331−7	1372030
7440−39−3	Barium	722000	ug/kg	N	165	826	826	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−41−7	Beryllium	842	ug/kg		33.6	168	168	2	MS	BAJ	03/31/14 22:42	140331−7	1372030
7440−43−9	Cadmium	228	ug/kg	J	165	826	826	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−70−2	Calcium	3800000	ug/kg		13200	41300	41300	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−47−3	Chromium	6880	ug/kg		248	826	826	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−48−4	Cobalt	3590	ug/kg		248	826	826	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−50−8	Copper	12800	ug/kg	*N	496	1650	1650	1	P	HSC	04/07/14 10:33	040714−3	1372417
7439−89−6	Iron	11200000	ug/kg		13200	41300	41300	1	P	HSC	04/07/14 10:33	040714−3	1372417
7439−92−1	Lead	14700	ug/kg		545	1650	1650	1	P	HSC	04/07/14 10:33	040714−3	1372417
7439−95−4	Magnesium	1260000	ug/kg		14000	49600	49600	1	P	HSC	04/07/14 10:33	040714−3	1372417
7439−96−5	Manganese	549000	ug/kg		331	1650	1650	1	P	HSC	04/07/14 10:33	040714−3	1372417
7439−97−6	Mercury	41.3	ug/kg		6.76	20.2	20.2	1	AV	NOR1	04/01/14 12:51	040114S1−9	1376453
7440−02−0	Nickel	6340	ug/kg	N	168	673	673	2	MS	BAJ	04/01/14 16:13	140401−8	1372030
7440−09−7	Potassium	1100000	ug/kg		10600	41300	41300	1	P	HSC	04/07/14 10:33	040714−3	1372417
7782−49−2	Selenium	1680	ug/kg	U	555	1680	1680	2	MS	BAJ	03/31/14 22:42	140331−7	1372030
7440−22−4	Silver	1030	ug/kg		165	826	826	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−23−5	Sodium	70700	ug/kg		11600	41300	41300	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−28−0	Thallium	167	ug/kg	J	101	673	673	2	MS	BAJ	03/31/14 22:42	140331−7	1372030
7440−62−2	Vanadium	16400	ug/kg		165	826	826	1	P	HSC	04/07/14 10:33	040714−3	1372417
7440−66−6	Zinc	47100	ug/kg		661	1650	1650	1	P	HSC	04/07/14 10:33	040714−3	1372417

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1372030	1372029	SW846 3050B	0.518	g	50	mL	03/19/14	AXG2
1372417	1372416	SW846 3050B	0.527	g	50	mL	04/04/14	MTM1
1376453	1376450	SW846 7471A Prep	0.518	g	30	mL	03/31/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

Quality Control Summary

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−2961

Contract: LANL00114

Matrix: S

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1203048997								
	Selenium	1.5	ug/L	+/−5	U	MS	1.5	5
	Silver	0.2	ug/L	+/−1	U	MS	0.2	1
	Thallium	0.45	ug/L	+/−2	U	MS	0.45	2
	Cadmium	0.11	ug/L	+/−1	U	MS	0.11	1
	Arsenic	1.7	ug/L	+/−5	U	MS	1.7	5
	Antimony	1	ug/L	+/−3	U	MS	1	3
	Chromium	2	ug/L	+/−10	U	MS	2	10
	Nickel	0.5	ug/L	+/−2	U	MS	0.5	2
	Lead	0.5	ug/L	+/−2	U	MS	0.5	2
1203049011								
	Arsenic	195	ug/kg	+/−975	U	MS	195	975
	Beryllium	19.5	ug/kg	+/−97.5	U	MS	19.5	97.5
	Nickel	97.5	ug/kg	+/−390	U	MS	97.5	390
	Selenium	322	ug/kg	+/−975	U	MS	322	975
	Thallium	58.5	ug/kg	+/−390	U	MS	58.5	390
1203050007								
	Aluminum	68	ug/L	+/−200	U	P	68	200
	Barium	1	ug/L	+/−5	U	P	1	5
	Beryllium	1	ug/L	+/−5	U	P	1	5
	Calcium	50	ug/L	+/−200	U	P	50	200
	Cobalt	1	ug/L	+/−5	U	P	1	5
	Copper	3	ug/L	+/−10	U	P	3	10
	Iron	83.7	ug/L	+/−100	J	P	30	100
	Magnesium	110	ug/L	+/−300	U	P	110	300
	Manganese	2	ug/L	+/−10	U	P	2	10
	Potassium	50.5	ug/L	+/−150	J	P	50	150
	Sodium	100	ug/L	+/−300	U	P	100	300
	Vanadium	1	ug/L	+/−5	U	P	1	5
	Zinc	3.3	ug/L	+/−10	U	P	3.3	10
1203050018								
	Aluminum	6440	ug/kg	+/−18900	U	P	6440	18900
	Antimony	313	ug/kg	+/−947	U	P	313	947
	Barium	94.7	ug/kg	+/−473	U	P	94.7	473
	Cadmium	94.7	ug/kg	+/−473	U	P	94.7	473
	Calcium	7580	ug/kg	+/−23700	U	P	7580	23700
	Chromium	142	ug/kg	+/−473	U	P	142	473
	Cobalt	142	ug/kg	+/−473	U	P	142	473

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−2961

Contract: LANL00114

Matrix: S

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
	Copper	284	ug/kg	+/−947	U	P	284	947
	Iron	7580	ug/kg	+/−23700	U	P	7580	23700
	Lead	313	ug/kg	+/−947	U	P	313	947
	Magnesium	8050	ug/kg	+/−28400	U	P	8050	28400
	Manganese	189	ug/kg	+/−947	U	P	189	947
	Zinc	379	ug/kg	+/−947	U	P	379	947
	Vanadium	94.7	ug/kg	+/−473	U	P	94.7	473
	Potassium	6060	ug/kg	+/−23700	U	P	6060	23700
	Silver	94.7	ug/kg	+/−473	U	P	94.7	473
	Sodium	6630	ug/kg	+/−23700	U	P	6630	23700
1203056170								
	Mercury	0.067	ug/L	+/−0.2	U	AV	0.067	0.2
1203059494								
	Mercury	5.76	ug/kg	+/−12	J	AV	4.02	12

***Analytical Methods:**

P	**SW846 3005A/6010C**
P	**SW846 3050B/6010C**
MS	**SW846 3005A/6020A**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**
AV	**EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49264S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 344334006 **Spike ID:** 1203049000

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Selenium	ug/L	75−125	49		1.5	U	50	97.8		MS
Silver	ug/L	75−125	54.3		0.2	U	50	109		MS
Thallium	ug/L	75−125	34.6		0.45	U	50	69.3	N	MS
Antimony	ug/L	75−125	51.4		1	U	50	103		MS
Arsenic	ug/L	75−125	48		1.7	U	50	96		MS
Cadmium	ug/L	75−125	51.8		0.11	U	50	104		MS
Chromium	ug/L	75−125	53.1		2	U	50	105		MS
Lead	ug/L	75−125	51		0.5	U	50	102		MS
Nickel	ug/L	75−125	53.9		0.5	U	50	107		MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49260S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 94.2

Sample ID: 344334001 **Spike ID:** 1203049014

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Beryllium	ug/kg	75−125	5550		191		5120	105		MS
Nickel	ug/kg	75−125	9830		1410		5120	164	N	MS
Selenium	ug/kg	75−125	4930		339	U	5120	95.4		MS
Thallium	ug/kg	75−125	5240		61.6	U	5120	101		MS
Arsenic	ug/kg	75−125	5910		594	J	5120	104		MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−2961 **Client ID** CAWA−14−54768S

Contract: ESHL00714 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 344383007 **Spike ID:** 1203050010

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	75−125	5000		68	U	5000	99.7		P
Barium	ug/L	75−125	500		10.3		500	97.9		P
Beryllium	ug/L	75−125	488		1	U	500	97.5		P
Calcium	ug/L	75−125	15400		10900		5000	90.8		P
Cobalt	ug/L	75−125	476		1	U	500	95.2		P
Copper	ug/L	75−125	510		3	U	500	102		P
Iron	ug/L	75−125	5110		47.1	J	5000	101		P
Magnesium	ug/L	75−125	8340		3600		5000	94.8		P
Manganese	ug/L	75−125	484		2	U	500	96.7		P
Potassium	ug/L	75−125	6120		1210		5000	98.2		P
Sodium	ug/L	75−125	13900		8740		5000	102		P
Vanadium	ug/L	75−125	512		3.2	J	500	102		P
Zinc	ug/L	75−125	484		15.6		500	93.6		P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49260S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 94.2

Sample ID: 344334001 **Spike ID:** 1203050021

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/kg	75−125	3330000		1610000		504000	341	N	P
Antimony	ug/kg	75−125	50600		328	U	50400	99.8		P
Barium	ug/kg	75−125	221000		130000		50400	180	N	P
Cadmium	ug/kg	75−125	51200		135	J	50400	101		P
Calcium	ug/kg	75−125	995000		402000		504000	118		P
Chromium	ug/kg	75−125	54600		2560		50400	103		P
Cobalt	ug/kg	75−125	52300		1520		50400	101		P
Copper	ug/kg	75−125	57800		27200		50400	60.6	N	P
Iron	ug/kg		13500000		9580000		504000	772	N/A	P
Lead	ug/kg	75−125	58500		4940		50400	106		P
Magnesium	ug/kg	75−125	924000		347000		504000	115		P
Manganese	ug/kg		367000		238000		50400	255	N/A	P
Potassium	ug/kg	75−125	840000		289000		504000	109		P
Silver	ug/kg	75−125	52300		424	J	50400	103		P
Sodium	ug/kg	75−125	552000		40100		504000	101		P
Vanadium	ug/kg	75−125	68600		8420		50400	119		P
Zinc	ug/kg	75−125	97700		39600		50400	115		P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49264S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 344334006 **Spike ID:** 1203056173

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75−125	1.96		0.067	U	2	98.2		AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−5a−

Spike Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49264PS

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 344334006 **Spike ID:** 1203056730

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Thallium	ug/L	75−125	46.9		0.45	U	50	93.8		MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49260S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 94.2

Sample ID: 344334001 **Spike ID:** 1203059497

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/kg	80−120	125		4.25	U	122	100		AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−5a−

Spike Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49260PS

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 94.2

Sample ID: 344334001 **Spike ID:** 1203060085

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Nickel	ug/L	80−120	31.4		6.87		25	98		MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−5a−

Spike Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49260PS

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 94.2

Sample ID: 344334001 **Spike ID:** 1203063233

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	80−120	20800		16200		5000	90.7		P
Barium	ug/L	80−120	1800		1310		500	97.5		P
Copper	ug/L	80−120	785		274		500	102		P

***Analytical Methods:**

P **SW846 3050B/6010C**

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−2961 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACV−14−49264D

Matrix: WATER **Level:** Low

Sample ID: 344334006 **Duplicate ID:** 1203048999 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		1	U	1	U			MS
Arsenic	ug/L		1.7	U	1.7	U			MS
Cadmium	ug/L		0.11	U	0.11	U			MS
Chromium	ug/L		2	U	2	U			MS
Lead	ug/L		0.5	U	0.5	U			MS
Nickel	ug/L		0.5	U	0.5	U			MS
Selenium	ug/L		1.5	U	1.5	U			MS
Silver	ug/L		0.2	U	0.2	U			MS
Thallium	ug/L		0.45	U	0.45	U			MS

***Analytical Methods:**

MS SW846 3005A/6020A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−2961 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACV−14−49260D

Matrix: SOIL **Level:** Low

Sample ID: 344334001 **Duplicate ID:** 1203049013 **Percent Solids for Dup:** 94.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Arsenic	ug/kg	+/−1020	594	J	561	J	5.77		MS
Beryllium	ug/kg	+/−102	191		209		9.04		MS
Nickel	ug/kg	+/−407	1410		1390		1.52		MS
Selenium	ug/kg		339	U	336	U			MS
Thallium	ug/kg		61.6	U	61	U			MS

***Analytical Methods:**

MS SW846 3050B/6020A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−2961 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAWA−14−54768D

Matrix: WATER **Level:** Low

Sample ID: 344383007 **Duplicate ID:** 1203050009 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/L		68	U	68	U			P
Barium	ug/L	+/−5	10.3		8.34		21		P
Beryllium	ug/L		1	U	1	U			P
Calcium	ug/L	+/−20%	10900		10500		3.39		P
Cobalt	ug/L		1	U	1	U			P
Copper	ug/L		3	U	3	U			P
Iron	ug/L	+/−100	47.1	J	33.7	J	33.3		P
Magnesium	ug/L	+/−20%	3600		3540		1.86		P
Manganese	ug/L		2	U	2	U			P
Potassium	ug/L	+/−20%	1210		1210		.231		P
Sodium	ug/L	+/−20%	8740		8490		2.95		P
Vanadium	ug/L	+/−5	3.2	J	2.09	J	41.9		P
Zinc	ug/L	+/−10	15.6		14.5		6.9		P

***Analytical Methods:**

P SW846 3005A/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−2961 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACV−14−49260D

Matrix: SOIL **Level:** Low

Sample ID: 344334001 **Duplicate ID:** 1203050020 **Percent Solids for Dup:** 94.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/kg	+/−20%	1610000		1550000		4.09		P
Antimony	ug/kg		328	U	327	U			P
Barium	ug/kg	+/−20%	130000		129000		.837		P
Cadmium	ug/kg	+/−496	135	J	187	J	32.1		P
Calcium	ug/kg	+/−20%	402000		439000		8.64		P
Chromium	ug/kg	+/−20%	2560		2880		11.6		P
Cobalt	ug/kg	+/−496	1520		1380		9.28		P
Copper	ug/kg	+/−992	27200		3430		155	*	P
Iron	ug/kg	+/−20%	9580000		10500000		9.46		P
Lead	ug/kg	+/−992	4940		5280		6.77		P
Magnesium	ug/kg	+/−20%	347000		303000		13.4		P
Manganese	ug/kg	+/−20%	238000		240000		.863		P
Potassium	ug/kg	+/−20%	289000		266000		8.45		P
Silver	ug/kg	+/−496	424	J	183	J	79.3		P
Sodium	ug/kg	+/−24800	40100		36700		8.8		P
Vanadium	ug/kg	+/−20%	8420		9430		11.3		P
Zinc	ug/kg	+/−20%	39600		44000		10.5		P

***Analytical Methods:**

P SW846 3050B/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−2961 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACV−14−49264D

Matrix: WATER **Level:** Low

Sample ID: 344334006 **Duplicate ID:** 1203056172 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.067	U	0.067	U			AV

***Analytical Methods:**

AV EPA 245.1/245.2

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−2961 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACV−14−49260D

Matrix: SOIL **Level:** Low

Sample ID: 344334001 **Duplicate ID:** 1203059496 **Percent Solids for Dup:** 94.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/kg		4.25	U	4.13	U			AV

***Analytical Methods:**

AV SW846 7471A

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−2961

Contract: LANL00114

Aqueous LCS Source: O2Si **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203048998								
	Antimony	ug/L	50	50.3		101	80−120	MS
	Arsenic	ug/L	50	47.1		94.3	80−120	MS
	Cadmium	ug/L	50	50.5		101	80−120	MS
	Chromium	ug/L	50	49.8		99.5	80−120	MS
	Lead	ug/L	50	49.2		98.4	80−120	MS
	Nickel	ug/L	50	50.6		101	80−120	MS
	Selenium	ug/L	50	49.2		98.3	80−120	MS
	Silver	ug/L	50	51.6		103	80−120	MS
	Thallium	ug/L	50	46.8		93.7	80−120	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−2961

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203049012								
	Arsenic	ug/kg	137000	133000		96.8	83.2−117.5	MS
	Beryllium	ug/kg	138000	146000		106	84.1−115.9	MS
	Nickel	ug/kg	159000	178000		112	84.3−115.7	MS
	Selenium	ug/kg	43500	44400		102	77.9−122.3	MS
	Thallium	ug/kg	146000	149000		102	81.5−119.2	MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−2961

Contract: LANL00114

Aqueous LCS Source: OS2I **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203050008								
	Aluminum	ug/L	5000	5060		101	80−120	P
	Barium	ug/L	500	501		100	80−120	P
	Beryllium	ug/L	500	492		98.4	80−120	P
	Calcium	ug/L	5000	4760		95.3	80−120	P
	Cobalt	ug/L	500	486		97.2	80−120	P
	Copper	ug/L	500	501		100	80−120	P
	Iron	ug/L	5000	5320		106	80−120	P
	Magnesium	ug/L	5000	4970		99.3	80−120	P
	Manganese	ug/L	500	495		98.9	80−120	P
	Potassium	ug/L	5000	5390		108	80−120	P
	Sodium	ug/L	5000	5160		103	80−120	P
	Vanadium	ug/L	500	515		103	80−120	P
	Zinc	ug/L	500	476		95.1	80−120	P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−2961

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203050019								
	Magnesium	ug/kg	2920000	2930000		100	75−125.3	P
	Manganese	ug/kg	310000	310000		100	82.6−117.4	P
	Potassium	ug/kg	2780000	2660000		95.7	69.1−130.9	P
	Silver	ug/kg	55200	58500		106	80−120	P
	Sodium	ug/kg	504000	496000		98.5	73.6−126.4	P
	Vanadium	ug/kg	138000	150000		109	80−120	P
	Zinc	ug/kg	206000	203000		98.6	82−118	P
	Aluminum	ug/kg	8680000	8010000		92.2	44.9−154.4	P
	Antimony	ug/kg	166000	176000		106	80−120	P
	Barium	ug/kg	290000	292000		101	82.8−117.6	P
	Cadmium	ug/kg	85000	83100		97.8	84−115.9	P
	Calcium	ug/kg	6120000	6180000		101	83.2−117	P
	Chromium	ug/kg	168000	172000		102	81.5−117.9	P
	Cobalt	ug/kg	87000	87500		101	84.8−114.9	P
	Copper	ug/kg	187000	202000		108	84−116.6	P
	Iron	ug/kg	12500000	15000000		120	50.5−148.8	P
	Lead	ug/kg	120000	130000		109	83.3−116.7	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−2961

Contract: LANL00114

Aqueous LCS Source: GEL **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203056171								
	Mercury	ug/L	2	2.01		101	85−115	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−2961

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203059495								
	Mercury	ug/kg	7690	7900		103	71.4−129	AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49264L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 344334006 **Serial Dilution ID:** 1203049001

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	1	U	5	U				MS
Arsenic	1.7	U	8.5	U				MS
Cadmium	.11	U	.55	U				MS
Chromium	2	U	10	U				MS
Lead	.5	U	2.5	U				MS
Nickel	.5	U	2.5	U				MS
Selenium	1.5	U	7.5	U				MS
Silver	.2	U	1	U				MS
Thallium	.45	U	4.89	J				MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49260L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 344334001 **Serial Dilution ID:** 1203049015

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Arsenic	2.9	J	5	U	100			MS
Beryllium	.931		1.09	J	16.5			MS
Nickel	6.87		7.34	J	6.82			MS
Selenium	1.65	U	8.25	U				MS
Thallium	.3	U	1.5	U				MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−2961 **Client ID** CAWA−14−54768L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 344383007 **Serial Dilution ID:** 1203050012

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	68	U	340	U				P
Barium	10.3		10.6	J	2.49			P
Beryllium	1	U	5	U				P
Calcium	10900		10700		1.7		10	P
Cobalt	1	U	5	U				P
Copper	3	U	15	U				P
Iron	47.1	J	150	U	100			P
Magnesium	3600		3560		1.07			P
Manganese	2	U	10	U				P
Potassium	1210		1590		31.7			P
Sodium	8740		8650		1.05		10	P
Vanadium	3.2	J	5	U	100			P
Zinc	15.6		18.5	J	18.6			P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49260L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 344334001 **Serial Dilution ID:** 1203050022

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	16200		16400		1.34		10	P
Antimony	3.3	U	16.5	U				P
Barium	1310		1310		.313		10	P
Cadmium	1.36	J	5	U	100			P
Calcium	4050		4130		2.13		10	P
Chromium	25.8		25.5		1.27			P
Cobalt	15.3		15.2	J	.766			P
Copper	274		260		5.04		10	P
Iron	96400		96600		.195		10	P
Lead	49.7		44.2	J	11.1			P
Magnesium	3490		3470		.495			P
Manganese	2400		2410		.676		10	P
Potassium	2910		2880		1.11			P
Silver	4.27	J	6.89	J	61.4			P
Sodium	404		417	J	3.26			P
Vanadium	84.7		82.3		2.92		10	P
Zinc	398		392		1.65		10	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49264L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 344334006 **Serial Dilution ID:** 1203056174

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−2961 **Client ID** CACV−14−49260L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 344334001 **Serial Dilution ID:** 1203059498

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **SW846 7471A**

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
27-MAR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP/MS	SW846 3005A/6020A	Liquid	ESHL, LANL
Batch ID:	**Sample Numbers:**		
1372024	See Below		

Potentially affected work order(s)(SDG): 344291(2014-2957),344293(2014-2958),344296(2014-2959),344332(2014-2960),344334(2014-2961)

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203049000MS	The matrix spike recovery failed outside of the control limits for Tl. The post spike passed the required control limits for Tl. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.

Originator's Name:

Elizabeth Janssen 28-MAR-14

Data Validator/Group Leader:

Paul Boyd 28-MAR-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
03-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP/MS	SW846 3050B/6020A	Solid	LANL
Batch ID:	**Sample Numbers:**		
1372030	See Below		

Potentially affected work order(s)(SDG): 344334(2014-2961)

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203049014MS	The matrix spike recovery failed outside of the control limits for Ni. The post spike passed the required control limits for Ni. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.

Originator's Name:

Elizabeth Janssen 07-APR-14

Data Validator/Group Leader:

Samantha Jacobs 07-APR-14

DER Report No.: 1281119
Revision No.:

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
08-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW846 3050B/6010C	Solid	LANL
Batch ID:	**Sample Numbers:**		
1372417	See Below		

Potentially affected work order(s)(SDG): 344334(2014-2961)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for DUP

Other

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203050021MS 2. Failed RPD for DUP: QC 1203050020DUP 3. Low level PQL recovered high for antimony.	1. The matrix spike recovery failed outside of the control limits for aluminum,barium and copper. The post spike passed the required control limits for all analytes. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. 2. The sample and sample duplicate % RPD failed outside the control limits for copper due to possible sample non-homogeneity and/or matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. 3. The samples were analyzed on 3 separate passing calibrations. The closing PQL recovered high for antimony in all 3 analyses due to possible matrix interference interactions. Sample 344334003 was the only one not less than the MDL or greater than 2x the PQL. The data is being reported.

Originator's Name:

Helen Camello 08-APR-14

Data Validator/Group Leader:

Jerry Wigfall 08-APR-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
07-APR-14	Federal	SOP	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW3005/6010CL	Liquid	ARSL004
Batch ID:	**Sample Numbers:**		
1372413	See below		

Potentially affected work order(s)(SDG):

Application Issues:

Other

Specification and Requirements Exception Description:	DER Disposition:
1. Low level PQL recovered high for potassium.	1. The samples were analyzed on 3 separate passing calibrations. The closing PQL recovered high for potassium in all 3 analyses due to possible matrix interference interactions. Sample 344334006 was the only one not less than the MDL or greater than 2x the PQL. The data is being reported.

Originator's Name:

Helen Camello 07-APR-14

Data Validator/Group Leader:

Louise Smith 07-APR-14

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-2962

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CACV-14-49260	Mar 7 2014	10:10	SED	1
CACV-14-49263	Mar 7 2014	10:10	SED	1
CACV-14-49261	Mar 7 2014	10:30	SED	1
CACV-14-49262	Mar 7 2014	10:40	SED	1
CAWA-14-49297	Mar 7 2014	11:10	SED	1
CAWA-14-49298	Mar 7 2014	11:50	SED	1
CAWA-14-49271	Mar 7 2014	11:25	SED	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Martin	3/10/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49260 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		10:10	MEDIA:		SED
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~ST~~ Seep	CV-61485	FIELD PREP:	NA	↓
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	↓
TOP DEPTH:		0 cm	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:		22 cm	EXCAVATED:		YES / (NO) / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse sediment

LOCATION COMMENTS: Reach CDV-4

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

3kgd Rad
α: 26.2 dpm
β/γ: 1969 dpm

Gross **Alpha** 33 **dpm**

Gross **Beta/Gamma** 2060 **dpm**

PID Ambient Reading = NA **ppm**

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49261 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		10:30	MEDIA:		SED
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	sem ~~SZ~~ Field	CV-614886	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		8cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment

LOCATION COMMENTS: Reach CDV-4

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

Bkgd α: 26.2 dpm Gross Alpha 56 dpm

Bkgd β: 1969 dpm Gross Beta/Gamma 1605 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time**

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49262 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		10:40	MEDIA:		SED
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	SRM 3/6/14 ~~SS~~	CV-6148~~7~~6 PEC 3/7/14	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		8 cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		31 cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse Sediment

LOCATION COMMENTS: Reach CDV-4

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

Bkgd K- N/A U= PEC 3/7/14

Alpha 56 dpm

Beta/Gamma 1605 dpm

PID Ambient Reading = NA ppm

Bkgd α: 26.2 dpm β/γ: 1969 dpm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Grace (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49263 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SEDIMENT 3/6/14	SED
TIME COLLECTED (HH:MM):		10:10	MEDIA:		SED
PRS ID:		Cañon de Valle	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	Specified At Time Of Sampling	CV-61485	FIELD PREP:		NA
LOCATION TYPE:		BH	FIELD QC TYPE:	FD	OK
TOP DEPTH:		0cm	SAMPLE USAGE:	QC	OK
BOTTOM DEPTH:		22cm	EXCAVATED:		YES (NO) / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE		
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE		
	~~NMED Explosives list~~	~~250 ML AMBER GLASS~~	~~1~~	~~ICE~~	N	
	Tal Metals	125 ML POLY	1	ICE		

PD 3/6/14

SAMPLE COMMENTS: Field Duplicate of CACV-14-49260 Coarse Sediment

LOCATION COMMENTS: Reach CV-4.

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

Bkgd: 26.2 dpm Gross Alpha 33 dpm

B/r. 1969 dpm Gross Beta/Gamma 2060 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time
Kevin Reid Kevin Reid	3/7/14 1420	K. Greene	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY (Printed Name) (Signature)**	**Date/Time**

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49271 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1125	MEDIA:		SED
PRS ID:	Water-Canyon	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~60~~ Sep 3/6/14	WA-61491	FIELD PREP:	NA	↓
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	↓
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:		6cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: Reach WA-3

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE Spot test negative

Skgd Red
1: 26.2 dpm
Hr: 1969 dpm

Gross Alpha 18 dpm

Gross Beta/Gamma 1952 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2120
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49297 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	SED 3/6/14	SED
TIME COLLECTED (HH:MM):		11:10	MEDIA:		SED
PRS ID:		Water Canyon	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	WA-61489	OK	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		55cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse Sediments

LOCATION COMMENTS: Reach WA-3

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HE spot test negative

1kg 26.2 dpm

Gross Alpha 18 dpm

1969 dpm

Gross Beta/Gamma 1745 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Greene (Signature)	3/7/14 2:20
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/18/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49298 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/07/2014	FIELD MATRIX:	& SZM 3/4/14	SED
TIME COLLECTED (HH:MM):		1150	MEDIA:		SED
PRS ID:		Water Canyon	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	WA-61490	OK	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		10cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediments

LOCATION COMMENTS: Reach WA-3

FIELD PARAMETERS:

FIELD SCREENING/MEASUREMENT RESULTS: HF spot test negative

Stgd Rad: 26.2 dpm Gross **Alpha** 61 **dpm**

r: 1969 dpm Gross **Beta/Gamma** 1947 **dpm**

PID Ambient Reading = NA **ppm**

COLLECTED BY (PRINT) Kevin Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/7/14 1420	(Printed Name) K. Green (Signature)	3/7/14 2120
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/18/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-2962

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
5878	EPA:1668A	6	1			

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
5878	EPA:1668A	25527	25525	6	1				1	1	1			1	1						

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:1668A	PCBCONGENERS	CACV-14-49260	12010064	MS	0	29	26	0
EPA:1668A	PCBCONGENERS	CACV-14-49260	12010065	MSD	0	29	26	0
EPA:1668A	PCBCONGENERS	CACV-14-49260	5878001	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CACV-14-49261	5878003	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CACV-14-49262	5878004	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CACV-14-49263	5878002	FD	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWA-14-49271	5878007	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWA-14-49297	5878005	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWA-14-49298	5878006	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	LCS	12010062	LCS	0	29	26	0
EPA:1668A	PCBCONGENERS	LCSD	12010063	LCSD	0	29	26	0
EPA:1668A	PCBCONGENERS	MB	12010061	MB	177	29	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

DATA VALIDATION REPORT

13. Display Flagged Data.

None.

Reason Code	Description
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CACV-14-49260	CV-61485	REG	EPA:1668A	0	177
CACV-14-49261	CV-61486	REG	EPA:1668A	0	177
CACV-14-49262	CV-61486	REG	EPA:1668A	0	177
CACV-14-49263	CV-61485	FD	EPA:1668A	0	177
CAWA-14-49271	WA-61491	REG	EPA:1668A	0	177
CAWA-14-49297	WA-61489	REG	EPA:1668A	0	177
CAWA-14-49298	WA-61490	REG	EPA:1668A	0	177

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

April 07, 2014

Mr. Keith Greene
Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: 2012 WQH with LOCUS EDD
Work Order: 5878
SDG: 2014-2962

Dear Mr. Greene:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 11, 2014. This original data report has been prepared and reviewed in accordance with CFAôs standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynthia Larkins
Project Manager

Chain of Custody: 2014-2962
Enclosures

problem solved

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Los Alamos National Laboratory
2012 WQH with LOCUS EDD
Workorder #: 5878
SDG # : 2014-2962

Case Narrative

Receipt Narrative
for
Los Alamos National Laboratory
SDG: 2014-2962
Work Order: 5878

Laboratory Identification
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, North Carolina 28405
(910) 795-0421

Summary
Sample receipt: The samples arrived at Cape Fear Analytical LLC (CFA), Wilmington, North Carolina on March 11, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. Shipping container temperatures were checked, documented, and within specifications. All sample containers arrived without any visible signs of tampering or breakage. Appropriate sample containers were received. Sample containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Sufficient sample was received for analysis. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
5878001	CACV-14-49260
5878002	CACV-14-49263
5878003	CACV-14-49261
5878004	CACV-14-49262
5878005	CAWA-14-49297
5878006	CAWA-14-49298
5878007	CAWA-14-49271

Case Narrative
Sample analyses were conducted using methodology as outlined in Cape Fear Analyticalôs Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist and data from the following fractions: PCB Congeners.

Sincerely,

Cynde Larkins

Cynthia Larkins
Project Manager

List of current CFA Certifications as of 11 March 2014

State	Certification
California (NELAC)	09270CA
New Jersey (NELAC)	NC013
North Carolina	NC01894
South Carolina	99063001
Utah (Primary NELAC)	CFAL

Chain of Custody and Supporting Documentation

CFA WO # 5878

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-2962

Page 1 of 1

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CACV-14-49260	Mar 7 2014	10:10	SED	1
CACV-14-49263	Mar 7 2014	10:10	SED	1
CACV-14-49261	Mar 7 2014	10:30	SED	1
CACV-14-49262	Mar 7 2014	10:40	SED	1
CAWA-14-49297	Mar 7 2014	11:10	SED	1
CAWA-14-49298	Mar 7 2014	11:50	SED	1
CAWA-14-49271	Mar 7 2014	11:25	SED	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
[signature]	Melissa Manfa	3/10/14 3:00	Cynde Larkins	CYNDE LARKINS	10MAR14 1010
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

temp = 4.5°C

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU/03

LOS ALAMOS, NM 875
UNITED STATES US

SHIP DATE: 10MAR14
ACTWGT: 30.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO CHRIS CORNWELL
CAPE FEAR ANALYTICAL
3306 KITTY HAWK ROAD, SUITE 120

WILMINGTON NC 28405
(910) 795-0421
REF: WE991316W200

FedEx Express

TRK# 0201 5908 1776 7660

TUE - 11 MAR 10:30A
PRIORITY OVERNIGHT

XH ILMA

28405
NC-US G80

Part # 156148-434 RIT2 10/11

temp. = 4.5°C

WO#5878

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: LANL	Work Order: 5878
Received By: Cynde Larkins	Date/Time Received: 11MAR14 1010

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	✓		
Samples < 2x background?	✓		

* Notify RSO of any responses in this column immediately.

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags blue ice dry ice none other (describe) 4.5°C
4	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
5	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
6	Samples received within holding time?	✓			Sample IDs, tests affected:
7	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
8	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
9	Number of containers received match number indicated on COC?	✓			Sample IDs, containers affected:
10	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CJ Date: 11MAR14

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Los Alamos National Laboratory (LANL)
SDG 2014-2962
Work Order 5878

Method/Analysis Information

Product:	**Method 1668A PCB Congeners in Solids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3540C
Analytical Batch Number:	25527
Clean Up Batch Number:	25526
Extraction Batch Number:	25525

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
5878001	CACV-14-49260
5878002	CACV-14-49263
5878003	CACV-14-49261
5878004	CACV-14-49262
5878005	CAWA-14-49297
5878006	CAWA-14-49298
5878007	CAWA-14-49271
12010061	Method Blank (MB)
12010062	Laboratory Control Sample (LCS)
12010063	Laboratory Control Sample Duplicate (LCSD)
12010064	5878001(CACV-14-49260) Matrix Spike (MS)
12010065	5878001(CACV-14-49260) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard. Any known exceptions are discussed in the narrative.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 5878001 (CACV-14-49260) was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement
The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and

time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	High-Resolution GC/MS System	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

LANL001 Los Alamos National Laboratory

Client SDG: 2014-2962 CFA Work Order: 5878

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
B	The target analyte was detected in the associated blank.
C	Congener has coeluters. When Cxxx, refer to congener number xxx for data
J	Value is estimated
U	Analyte was analyzed for , but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 07 APR 2014 **Title: Analyst III**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878001**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 21:08**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.69 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.997	.997	pg/g	0.997	4.98
2051-61-8	PCB-2	U	.997	.997	pg/g	0.997	1.99
2051-62-9	PCB-3	U	.997	.997	pg/g	0.997	1.99
13029-08-8	PCB-4	U	.997	.997	pg/g	0.997	3.99
16605-91-7	PCB-5	U	.997	.997	pg/g	0.997	3.99
25569-80-6	PCB-6	U	.997	.997	pg/g	0.997	1.99
33284-50-3	PCB-7	U	.997	.997	pg/g	0.997	3.99
34883-43-7	PCB-8	U	.997	.997	pg/g	0.997	19.9
34883-39-1	PCB-9	U	.997	.997	pg/g	0.997	1.99
33146-45-1	PCB-10	U	.997	.997	pg/g	0.997	3.99
2050-67-1	PCB-11	BJ	5.11	4.56	pg/g	1.99	49.8
PCB-12/13	PCB-13/12	CU	.997	.997	pg/g	0.997	7.97
34883-41-5	PCB-14	U	.997	.997	pg/g	0.997	3.99
2050-68-2	PCB-15	U	1.09	.997	pg/g	0.997	19.9
38444-78-9	PCB-16	U	.997	.997	pg/g	0.997	3.99
37680-66-3	PCB-17	U	0.987	.664	pg/g	0.664	3.99
PCB-18/30	PCB-18/30	CJ	2.21	2.01	pg/g	1.33	3.99
38444-73-4	PCB-19	U	.664	.664	pg/g	0.664	1.99
PCB-20/28	PCB-20/28	CJ	5.62	5.45	pg/g	1.33	19.9
PCB-21/33	PCB-21/33	CJ	2.06	1.91	pg/g	1.33	7.97
38444-85-8	PCB-22	J	2.01	.98	pg/g	0.664	3.99
55720-44-0	PCB-23	U	.664	.664	pg/g	0.664	1.99
55702-45-9	PCB-24	U	.664	.664	pg/g	0.664	1.99
55712-37-3	PCB-25	U	.664	.664	pg/g	0.664	1.99
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	3.99
38444-76-7	PCB-27	U	.664	.664	pg/g	0.664	1.99
16606-02-3	PCB-31	J	4.62	4.48	pg/g	0.664	9.97
38444-77-8	PCB-32	U	0.680	.664	pg/g	0.664	1.99
37680-68-5	PCB-34	U	.664	.664	pg/g	0.664	1.99
37680-69-6	PCB-35	U	.664	.664	pg/g	0.664	3.99
38444-87-0	PCB-36	U	.664	.664	pg/g	0.664	3.99
38444-90-5	PCB-37	J	2.86	2.53	pg/g	0.664	19.9

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878001**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 21:08**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.69 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.664	.664	pg/g	0.664	1.99
38444-88-1	PCB-39	U	.664	.664	pg/g	0.664	3.99
PCB-40/71	PCB-40/71	C	6.48	6.08	pg/g	1.33	3.99
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	1.99
36559-22-5	PCB-42		4.21	3.8	pg/g	0.997	1.99
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	3.99
PCB-44/47/65	PCB-44/65/47	C	18.5	18.2	pg/g	3.33	5.98
PCB-45/51	PCB-45/51	CJ	2.24	1.85	pg/g	1.33	3.99
41464-47-5	PCB-46	U	0.676	.664	pg/g	0.664	1.99
70362-47-9	PCB-48	J	1.67	1.11	pg/g	0.664	1.99
PCB-49/69	PCB-69/49	C	10.9	10.6	pg/g	1.33	3.99
PCB-50/53	PCB-50/53	CJ	2.13	1.9	pg/g	1.33	3.99
35693-99-3	PCB-52		25.9	25.6	pg/g	1.33	1.99
15968-05-5	PCB-54	U	.664	.664	pg/g	0.664	1.99
74338-24-2	PCB-55	U	.997	.997	pg/g	0.997	1.99
41464-43-1	PCB-56		8.56	8.05	pg/g	0.664	3.99
70424-67-8	PCB-57	U	.997	.997	pg/g	0.997	1.99
41464-49-7	PCB-58	U	.997	.997	pg/g	0.997	1.99
PCB-59/62/75	PCB-59/62/75	CU	1.99	1.99	pg/g	1.99	5.98
33025-41-1	PCB-60	J	3.22	2.76	pg/g	0.664	3.99
PCB-61-76	PCB-61/76/70/74	C	28.2	28	pg/g	2.65	7.97
74472-34-7	PCB-63	U	.664	.664	pg/g	0.664	4.98
52663-58-8	PCB-64		5.59	5.23	pg/g	0.997	1.99
32598-10-0	PCB-66		16.4	16.2	pg/g	0.997	4.98
73575-53-8	PCB-67	U	.997	.997	pg/g	0.997	1.99
73575-52-7	PCB-68	U	.664	.664	pg/g	0.664	1.99
41464-42-0	PCB-72	U	.664	.664	pg/g	0.664	3.99
74338-23-1	PCB-73	U	.997	.997	pg/g	0.997	1.99
32598-13-3	PCB-77		2.51	2.28	pg/g	0.664	1.99
70362-49-1	PCB-78	U	.664	.664	pg/g	0.664	1.99
41464-48-6	PCB-79	J	0.839	.668	pg/g	0.664	3.99
33284-52-5	PCB-80	U	.664	.664	pg/g	0.664	3.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878001**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 21:08**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.69 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.664	.664	pg/g	0.664	1.99
52663-62-4	PCB-82		9.64	9.28	pg/g	0.997	4.98
60145-20-2	PCB-83		5.21	4.83	pg/g	0.997	1.99
52663-60-2	PCB-84		30.2	29.9	pg/g	0.997	1.99
PCB-85-117	PCB-117/116/85	C	15.8	15.5	pg/g	1.99	5.98
PCB-86-125	PCB-86/87/97/109/119/125	C	59.3	59	pg/g	3.99	12.0
PCB-88/91	PCB-88/91	C	15.7	15.3	pg/g	1.33	3.99
73575-57-2	PCB-89	U	0.742	.664	pg/g	0.664	1.99
PCB-90-113	PCB-113/90/101	C	102	102	pg/g	1.99	5.98
52663-61-3	PCB-92		21.0	20.7	pg/g	0.997	1.99
PCB-93/100	PCB-93/100	CU	1.99	1.99	pg/g	1.99	3.99
73575-55-0	PCB-94	U	.664	.664	pg/g	0.664	1.99
38379-99-6	PCB-95		102	102	pg/g	1.33	3.99
73575-54-9	PCB-96	U	.664	.664	pg/g	0.664	1.99
PCB-98/102	PCB-102/98	CJ	2.24	1.88	pg/g	1.33	3.99
38380-01-7	PCB-99		42.7	42.1	pg/g	1.33	1.99
60145-21-3	PCB-103	U	.664	.664	pg/g	0.664	4.98
56558-16-8	PCB-104	U	.664	.664	pg/g	0.664	1.99
32598-14-4	PCB-105		17.9	17.3	pg/g	0.997	1.99
70424-69-0	PCB-106	U	.997	.997	pg/g	0.997	1.99
70424-68-9	PCB-107	J	3.31	3.04	pg/g	0.664	3.99
PCB-108/124	PCB-108/124	CJ	3.38	3.06	pg/g	1.33	3.99
PCB-110/115	PCB-110/115	C	150	148	pg/g	2.65	3.99
39635-32-0	PCB-111	U	.664	.664	pg/g	0.664	1.99
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	1.99
74472-37-0	PCB-114	U	.664	.664	pg/g	0.664	1.99
31508-00-6	PCB-118		44.9	43.1	pg/g	1.33	3.99
68194-12-7	PCB-120	U	.664	.664	pg/g	0.664	1.99
56558-18-0	PCB-121	U	.664	.664	pg/g	0.664	1.99
76842-07-4	PCB-122	U	0.891	.664	pg/g	0.664	6.90
65510-44-3	PCB-123	J	1.45	1.13	pg/g	0.664	1.99
57465-28-8	PCB-126	U	.664	.664	pg/g	0.664	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878001**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 21:08**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.69 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.664	.664	pg/g	0.664	1.99
PCB-128/166	PCB-128/166	C	29.5	29.2	pg/g	1.33	3.99
PCB-129-163	PCB-138/163/129	C	193	192	pg/g	2.65	5.98
52663-66-8	PCB-130		11.3	11	pg/g	0.997	1.99
61798-70-7	PCB-131		2.68	2.28	pg/g	0.664	1.99
38380-05-1	PCB-132		65.6	64.5	pg/g	0.997	1.99
35694-04-3	PCB-133	J	2.20	1.86	pg/g	0.664	1.99
52704-70-8	PCB-134		7.98	7.51	pg/g	1.33	1.99
PCB-135/151	PCB-151/135	C	49.2	48.8	pg/g	1.33	3.99
38411-22-2	PCB-136		16.7	16.4	pg/g	0.664	1.99
35694-06-5	PCB-137		9.19	8.71	pg/g	1.33	1.99
PCB-139/140	PCB-139/140	CJ	3.23	2.86	pg/g	1.33	3.99
52712-04-6	PCB-141		29.4	29	pg/g	1.33	3.99
41411-61-4	PCB-142	U	.664	.664	pg/g	0.664	1.99
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	1.99
68194-14-9	PCB-144		6.69	6.39	pg/g	0.664	1.99
74472-40-5	PCB-145	U	.664	.664	pg/g	0.664	1.99
51908-16-8	PCB-146		20.7	20.2	pg/g	0.997	1.99
PCB-147/149	PCB-147/149	C	126	125	pg/g	1.99	7.97
74472-41-6	PCB-148	U	.664	.664	pg/g	0.664	1.99
68194-08-1	PCB-150	U	.997	.997	pg/g	0.997	1.99
68194-09-2	PCB-152	U	.664	.664	pg/g	0.664	1.99
PCB-153/168	PCB-153/168	C	132	132	pg/g	1.99	7.97
60145-22-4	PCB-154	J	1.09	.81	pg/g	0.664	1.99
33979-03-2	PCB-155	U	.664	.664	pg/g	0.664	1.99
PCB-156/157	PCB-156/157	C	12.9	12.6	pg/g	1.33	3.99
74472-42-7	PCB-158		16.0	15.8	pg/g	0.664	1.99
39635-35-3	PCB-159	U	.664	.664	pg/g	0.664	1.99
41411-62-5	PCB-160	U	.664	.664	pg/g	0.664	1.99
74472-43-8	PCB-161	U	.997	.997	pg/g	0.997	1.99
39635-34-2	PCB-162	U	.997	.997	pg/g	0.997	1.99
74472-45-0	PCB-164		13.5	13.2	pg/g	0.664	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878001**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 21:08**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.69 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.664	.664	pg/g	0.664	1.99
52663-72-6	PCB-167		7.35	7.1	pg/g	0.664	1.99
32774-16-6	PCB-169	U	.997	.997	pg/g	0.997	1.99
35065-30-6	PCB-170		35.9	35.4	pg/g	0.664	1.99
PCB-171/173	PCB-173/171	C	9.99	9.69	pg/g	1.33	3.99
52663-74-8	PCB-172		5.85	5.55	pg/g	0.997	1.99
38411-25-5	PCB-174		31.1	30.8	pg/g	1.33	1.99
40186-70-7	PCB-175	U	1.14	.997	pg/g	0.997	1.99
52663-65-7	PCB-176		3.08	2.88	pg/g	0.664	1.99
52663-70-4	PCB-177		19.6	19.3	pg/g	0.997	1.99
52663-67-9	PCB-178		5.91	5.64	pg/g	1.33	1.99
52663-64-6	PCB-179		11.1	10.9	pg/g	0.664	1.99
PCB-180/193	PCB-193/180	CU	1.99	1.99	pg/g	1.99	3.99
74472-47-2	PCB-181	U	.997	.997	pg/g	0.997	1.99
60145-23-5	PCB-182	U	.664	.664	pg/g	0.664	1.99
PCB-183/185	PCB-183/185	C	13.0	12.7	pg/g	1.33	3.99
74472-48-3	PCB-184	U	.664	.664	pg/g	0.664	1.99
74472-49-4	PCB-186	U	.664	.664	pg/g	0.664	1.99
52663-68-0	PCB-187		38.4	37.9	pg/g	0.997	1.99
74487-85-7	PCB-188	U	.664	.664	pg/g	0.664	1.99
39635-31-9	PCB-189	J	1.45	1.2	pg/g	0.664	1.99
41411-64-7	PCB-190		7.38	7.15	pg/g	0.997	1.99
74472-50-7	PCB-191	J	1.34	1.12	pg/g	0.664	1.99
74472-51-8	PCB-192	U	.664	.664	pg/g	0.664	1.99
35694-08-7	PCB-194		14.0	13.7	pg/g	0.664	1.99
52663-78-2	PCB-195		5.89	5.61	pg/g	0.997	1.99
42740-50-1	PCB-196		5.97	5.67	pg/g	0.664	1.99
PCB-197/200	PCB-197/200	CJ	1.95	1.69	pg/g	1.33	3.99
PCB-198/199	PCB-198/199	C	14.8	14.5	pg/g	1.33	3.99
40186-71-8	PCB-201	J	1.26	1.03	pg/g	0.664	1.99
2136-99-4	PCB-202		2.62	2.34	pg/g	0.997	1.99
52663-76-0	PCB-203		9.20	8.8	pg/g	1.33	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878001**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 21:08**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.69 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.997	.997	pg/g	0.997	1.99
74472-53-0	PCB-205	U	0.769	.664	pg/g	0.664	1.99
40186-72-9	PCB-206		4.85	4.44	pg/g	0.997	1.99
52663-79-3	PCB-207	U	.664	.664	pg/g	0.664	1.99
52663-77-1	PCB-208	U	.664	.664	pg/g	0.664	1.99
2051-24-3	PCB-209		3.86	3.5	pg/g	0.664	1.99
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	1.09	0	pg/g		
25323-68-6	Total Tri PCBs		21.1	17.4	pg/g		
26914-33-0	Total Tetra PCBs		138	132	pg/g		
25429-29-2	Total Penta PCBs		629	618	pg/g		
26601-64-9	Total Hexa PCBs		756	747	pg/g		
28655-71-2	Total Hepta PCBs		185	180	pg/g		
55722-26-4	Total Octa PCBs		56.5	53.3	pg/g		
53742-07-7	Total Nona PCBs		4.85	4.44	pg/g		
DECACB(Tot)	Total Deca PCB		3.86	3.5	pg/g		
1336-36-3	Total PCB Congeners		1790	1760	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		72.0	199	pg/g	36.1	(15%-150%)
13C-3-MoCB		102	199	pg/g	51.3	(15%-150%)
13C-4-DiCB		104	199	pg/g	52.3	(25%-150%)
13C-15-DiCB		143	199	pg/g	71.7	(25%-150%)
13C-19-TrCB		125	199	pg/g	62.5	(25%-150%)
13C-37-TrCB		163	199	pg/g	82.0	(25%-150%)
13C-54-TeCB		165	199	pg/g	82.7	(25%-150%)
13C-77-TeCB		180	199	pg/g	90.3	(25%-150%)
13C-81-TeCB		180	199	pg/g	90.4	(25%-150%)
13C-104-PeCB		177	199	pg/g	88.9	(25%-150%)
13C-105-PeCB		160	199	pg/g	80.1	(25%-150%)
13C-114-PeCB		153	199	pg/g	76.8	(25%-150%)
13C-118-PeCB		162	199	pg/g	81.4	(25%-150%)
13C-123-PeCB		169	199	pg/g	84.7	(25%-150%)
13C-126-PeCB		170	199	pg/g	85.3	(25%-150%)
13C-155-HxCB		176	199	pg/g	88.2	(25%-150%)
13C-156-HxCB	C	322	399	pg/g	80.8	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		152	199	pg/g	76.0	(25%-150%)
13C-169-HxCB		183	199	pg/g	91.9	(25%-150%)
13C-188-HpCB		124	199	pg/g	62.4	(25%-150%)
13C-189-HpCB		141	199	pg/g	70.8	(25%-150%)
13C-202-OcCB		132	199	pg/g	66.3	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878001**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 21:08**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.69 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		182	199	pg/g	91.5	(25%-150%)
13C-206-NoCB		176	199	pg/g	88.3	(25%-150%)
13C-208-NoCB		163	199	pg/g	81.8	(25%-150%)
13C-209-DeCB		204	199	pg/g	102	(25%-150%)
13C-28-TrCB		170	199	pg/g	85.5	(30%-135%)
13C-111-PeCB		180	199	pg/g	90.4	(30%-135%)
13C-178-HpCB		187	199	pg/g	93.9	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878002**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
Client ID:	**CACV-14-49263**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 00:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.77 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.992	.992	pg/g	0.992	4.96
2051-61-8	PCB-2	U	.992	.992	pg/g	0.992	1.98
2051-62-9	PCB-3	U	.992	.992	pg/g	0.992	1.98
13029-08-8	PCB-4	U	.992	.992	pg/g	0.992	3.97
16605-91-7	PCB-5	U	.992	.992	pg/g	0.992	3.97
25569-80-6	PCB-6	U	.992	.992	pg/g	0.992	1.98
33284-50-3	PCB-7	U	.992	.992	pg/g	0.992	3.97
34883-43-7	PCB-8	U	.992	.992	pg/g	0.992	19.8
34883-39-1	PCB-9	U	.992	.992	pg/g	0.992	1.98
33146-45-1	PCB-10	U	.992	.992	pg/g	0.992	3.97
2050-67-1	PCB-11	BJ	2.93	2.38	pg/g	1.98	49.6
PCB-12/13	PCB-13/12	CU	.992	.992	pg/g	0.992	7.94
34883-41-5	PCB-14	U	.992	.992	pg/g	0.992	3.97
2050-68-2	PCB-15	U	.992	.992	pg/g	0.992	19.8
38444-78-9	PCB-16	U	.992	.992	pg/g	0.992	3.97
37680-66-3	PCB-17	U	.661	.661	pg/g	0.661	3.97
PCB-18/30	PCB-18/30	CU	1.32	1.32	pg/g	1.32	3.97
38444-73-4	PCB-19	U	.661	.661	pg/g	0.661	1.98
PCB-20/28	PCB-20/28	CJ	5.85	5.68	pg/g	1.32	19.8
PCB-21/33	PCB-21/33	CJ	1.92	1.76	pg/g	1.32	7.94
38444-85-8	PCB-22	J	1.98	.95	pg/g	0.661	3.97
55720-44-0	PCB-23	U	.661	.661	pg/g	0.661	1.98
55702-45-9	PCB-24	U	.661	.661	pg/g	0.661	1.98
55712-37-3	PCB-25	U	.661	.661	pg/g	0.661	1.98
PCB-26/29	PCB-26/29	CU	1.32	1.32	pg/g	1.32	3.97
38444-76-7	PCB-27	U	.661	.661	pg/g	0.661	1.98
16606-02-3	PCB-31	J	4.86	4.72	pg/g	0.661	9.92
38444-77-8	PCB-32	U	.661	.661	pg/g	0.661	1.98
37680-68-5	PCB-34	U	.661	.661	pg/g	0.661	1.98
37680-69-6	PCB-35	U	.661	.661	pg/g	0.661	3.97
38444-87-0	PCB-36	U	.661	.661	pg/g	0.661	3.97
38444-90-5	PCB-37	J	3.87	3.55	pg/g	0.661	19.8

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878002**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
Client ID:	**CACV-14-49263**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 00:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.77 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.661	.661	pg/g	0.661	1.98
38444-88-1	PCB-39	U	.661	.661	pg/g	0.661	3.97
PCB-40/71	PCB-40/71	C	5.61	5.22	pg/g	1.32	3.97
52663-59-9	PCB-41	U	1.32	1.32	pg/g	1.32	1.98
36559-22-5	PCB-42		3.39	2.98	pg/g	0.992	1.98
70362-46-8	PCB-43	U	1.32	1.32	pg/g	1.32	3.97
PCB-44/47/65	PCB-44/65/47	CU	3.31	3.31	pg/g	3.31	5.95
PCB-45/51	PCB-45/51	CU	1.32	1.32	pg/g	1.32	3.97
41464-47-5	PCB-46	U	.661	.661	pg/g	0.661	1.98
70362-47-9	PCB-48	J	1.70	1.15	pg/g	0.661	1.98
PCB-49/69	PCB-69/49	C	8.87	8.56	pg/g	1.32	3.97
PCB-50/53	PCB-50/53	CU	1.32	1.32	pg/g	1.32	3.97
35693-99-3	PCB-52		16.2	15.8	pg/g	1.32	1.98
15968-05-5	PCB-54	U	.661	.661	pg/g	0.661	1.98
74338-24-2	PCB-55	U	.992	.992	pg/g	0.992	1.98
41464-43-1	PCB-56		11.3	10.8	pg/g	0.661	3.97
70424-67-8	PCB-57	U	.992	.992	pg/g	0.992	1.98
41464-49-7	PCB-58	U	.992	.992	pg/g	0.992	1.98
PCB-59/62/75	PCB-59/62/75	CU	1.98	1.98	pg/g	1.98	5.95
33025-41-1	PCB-60		4.57	4.12	pg/g	0.661	3.97
PCB-61-76	PCB-61/76/70/74	C	32.4	32.2	pg/g	2.64	7.94
74472-34-7	PCB-63	U	.661	.661	pg/g	0.661	4.96
52663-58-8	PCB-64		5.50	5.14	pg/g	0.992	1.98
32598-10-0	PCB-66		20.1	19.9	pg/g	0.992	4.96
73575-53-8	PCB-67	U	.992	.992	pg/g	0.992	1.98
73575-52-7	PCB-68	U	.661	.661	pg/g	0.661	1.98
41464-42-0	PCB-72	U	.661	.661	pg/g	0.661	3.97
74338-23-1	PCB-73	U	.992	.992	pg/g	0.992	1.98
32598-13-3	PCB-77		3.31	3.08	pg/g	0.661	1.98
70362-49-1	PCB-78	U	.661	.661	pg/g	0.661	1.98
41464-48-6	PCB-79	U	0.692	.661	pg/g	0.661	3.97
33284-52-5	PCB-80	U	.661	.661	pg/g	0.661	3.97

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878002**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
Client ID:	**CACV-14-49263**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 00:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.77 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.661	.661	pg/g	0.661	1.98
52663-62-4	PCB-82		6.93	6.56	pg/g	0.992	4.96
60145-20-2	PCB-83		3.09	2.71	pg/g	0.992	1.98
52663-60-2	PCB-84		14.4	14	pg/g	0.992	1.98
PCB-85-117	PCB-117/116/85	C	10.8	10.5	pg/g	1.98	5.95
PCB-86-125	PCB-86/87/97/109/119/125	C	34.3	34	pg/g	3.97	11.9
PCB-88/91	PCB-88/91	C	8.32	7.95	pg/g	1.32	3.97
73575-57-2	PCB-89	U	.661	.661	pg/g	0.661	1.98
PCB-90-113	PCB-113/90/101	C	53.3	53	pg/g	1.98	5.95
52663-61-3	PCB-92		10.6	10.3	pg/g	0.992	1.98
PCB-93/100	PCB-93/100	CU	1.98	1.98	pg/g	1.98	3.97
73575-55-0	PCB-94	U	.661	.661	pg/g	0.661	1.98
38379-99-6	PCB-95		47.2	46.9	pg/g	1.32	3.97
73575-54-9	PCB-96	U	.661	.661	pg/g	0.661	1.98
PCB-98/102	PCB-102/98	CU	1.39	1.32	pg/g	1.32	3.97
38380-01-7	PCB-99		24.3	23.6	pg/g	1.32	1.98
60145-21-3	PCB-103	U	.661	.661	pg/g	0.661	4.96
56558-16-8	PCB-104	U	.661	.661	pg/g	0.661	1.98
32598-14-4	PCB-105		18.2	17.6	pg/g	0.992	1.98
70424-69-0	PCB-106	U	.992	.992	pg/g	0.992	1.98
70424-68-9	PCB-107	J	2.98	2.71	pg/g	0.661	3.97
PCB-108/124	PCB-108/124	CJ	2.37	2.04	pg/g	1.32	3.97
PCB-110/115	PCB-110/115	C	87.0	84.6	pg/g	2.64	3.97
39635-32-0	PCB-111	U	.661	.661	pg/g	0.661	1.98
74472-36-9	PCB-112	U	1.32	1.32	pg/g	1.32	1.98
74472-37-0	PCB-114	U	.661	.661	pg/g	0.661	1.98
31508-00-6	PCB-118		37.2	35.4	pg/g	1.32	3.97
68194-12-7	PCB-120	U	.661	.661	pg/g	0.661	1.98
56558-18-0	PCB-121	U	.661	.661	pg/g	0.661	1.98
76842-07-4	PCB-122	U	0.970	.661	pg/g	0.661	6.86
65510-44-3	PCB-123	J	1.25	.931	pg/g	0.661	1.98
57465-28-8	PCB-126	U	.661	.661	pg/g	0.661	1.98

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878002**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
Client ID:	**CACV-14-49263**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 00:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.77 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.661	.661	pg/g	0.661	1.98
PCB-128/166	PCB-128/166	C	22.5	22.2	pg/g	1.32	3.97
PCB-129-163	PCB-138/163/129	C	153	153	pg/g	2.64	5.95
52663-66-8	PCB-130		8.60	8.23	pg/g	0.992	1.98
61798-70-7	PCB-131	J	1.68	1.29	pg/g	0.661	1.98
38380-05-1	PCB-132		46.0	44.8	pg/g	0.992	1.98
35694-04-3	PCB-133	J	1.70	1.35	pg/g	0.661	1.98
52704-70-8	PCB-134		6.85	6.38	pg/g	1.32	1.98
PCB-135/151	PCB-151/135	C	35.7	35.3	pg/g	1.32	3.97
38411-22-2	PCB-136		10.7	10.5	pg/g	0.661	1.98
35694-06-5	PCB-137		6.26	5.78	pg/g	1.32	1.98
PCB-139/140	PCB-139/140	CJ	2.05	1.68	pg/g	1.32	3.97
52712-04-6	PCB-141		23.6	23.3	pg/g	1.32	3.97
41411-61-4	PCB-142	U	.661	.661	pg/g	0.661	1.98
68194-15-0	PCB-143	U	1.32	1.32	pg/g	1.32	1.98
68194-14-9	PCB-144		4.70	4.4	pg/g	0.661	1.98
74472-40-5	PCB-145	U	.661	.661	pg/g	0.661	1.98
51908-16-8	PCB-146		16.1	15.5	pg/g	0.992	1.98
PCB-147/149	PCB-147/149	C	101	99.2	pg/g	1.98	7.94
74472-41-6	PCB-148	U	.661	.661	pg/g	0.661	1.98
68194-08-1	PCB-150	U	.992	.992	pg/g	0.992	1.98
68194-09-2	PCB-152	U	.661	.661	pg/g	0.661	1.98
PCB-153/168	PCB-153/168	C	107	107	pg/g	1.98	7.94
60145-22-4	PCB-154	U	0.776	.661	pg/g	0.661	1.98
33979-03-2	PCB-155	U	.661	.661	pg/g	0.661	1.98
PCB-156/157	PCB-156/157	C	11.1	10.8	pg/g	1.32	3.97
74472-42-7	PCB-158		11.9	11.6	pg/g	0.661	1.98
39635-35-3	PCB-159	U	.661	.661	pg/g	0.661	1.98
41411-62-5	PCB-160	U	.661	.661	pg/g	0.661	1.98
74472-43-8	PCB-161	U	.992	.992	pg/g	0.992	1.98
39635-34-2	PCB-162	U	.992	.992	pg/g	0.992	1.98
74472-45-0	PCB-164		11.1	10.8	pg/g	0.661	1.98

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878002**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
Client ID:	**CACV-14-49263**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 00:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.77 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.661	.661	pg/g	0.661	1.98
52663-72-6	PCB-167		5.94	5.69	pg/g	0.661	1.98
32774-16-6	PCB-169	U	.992	.992	pg/g	0.992	1.98
35065-30-6	PCB-170		36.0	35.6	pg/g	0.661	1.98
PCB-171/173	PCB-173/171	C	9.86	9.56	pg/g	1.32	3.97
52663-74-8	PCB-172		5.92	5.61	pg/g	0.992	1.98
38411-25-5	PCB-174		35.2	34.9	pg/g	1.32	1.98
40186-70-7	PCB-175	U	1.23	.992	pg/g	0.992	1.98
52663-65-7	PCB-176		3.23	3.03	pg/g	0.661	1.98
52663-70-4	PCB-177		20.8	20.5	pg/g	0.992	1.98
52663-67-9	PCB-178		6.63	6.36	pg/g	1.32	1.98
52663-64-6	PCB-179		11.7	11.5	pg/g	0.661	1.98
PCB-180/193	PCB-193/180	CU	1.98	1.98	pg/g	1.98	3.97
74472-47-2	PCB-181	U	.992	.992	pg/g	0.992	1.98
60145-23-5	PCB-182	U	.661	.661	pg/g	0.661	1.98
PCB-183/185	PCB-183/185	C	19.4	19.1	pg/g	1.32	3.97
74472-48-3	PCB-184	U	.661	.661	pg/g	0.661	1.98
74472-49-4	PCB-186	U	.661	.661	pg/g	0.661	1.98
52663-68-0	PCB-187		43.0	42.5	pg/g	0.992	1.98
74487-85-7	PCB-188	U	.661	.661	pg/g	0.661	1.98
39635-31-9	PCB-189	J	1.24	.979	pg/g	0.661	1.98
41411-64-7	PCB-190		7.35	7.12	pg/g	0.992	1.98
74472-50-7	PCB-191	J	1.25	1.03	pg/g	0.661	1.98
74472-51-8	PCB-192	U	.661	.661	pg/g	0.661	1.98
35694-08-7	PCB-194		14.3	14	pg/g	0.661	1.98
52663-78-2	PCB-195		6.15	5.87	pg/g	0.992	1.98
42740-50-1	PCB-196		6.24	5.94	pg/g	0.661	1.98
PCB-197/200	PCB-197/200	CJ	2.33	2.07	pg/g	1.32	3.97
PCB-198/199	PCB-198/199	C	16.0	15.7	pg/g	1.32	3.97
40186-71-8	PCB-201	J	1.49	1.26	pg/g	0.661	1.98
2136-99-4	PCB-202		2.93	2.64	pg/g	0.992	1.98
52663-76-0	PCB-203		10.2	9.85	pg/g	1.32	1.98

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878002**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
Client ID:	**CACV-14-49263**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 00:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.77 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.992	.992	pg/g	0.992	1.98
74472-53-0	PCB-205	J	0.938	.705	pg/g	0.661	1.98
40186-72-9	PCB-206		5.56	5.15	pg/g	0.992	1.98
52663-79-3	PCB-207	U	0.730	.661	pg/g	0.661	1.98
52663-77-1	PCB-208	J	1.84	1.52	pg/g	0.661	1.98
2051-24-3	PCB-209		6.87	6.51	pg/g	0.661	1.98
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs		18.5	16.7	pg/g		
26914-33-0	Total Tetra PCBs		114	109	pg/g		
25429-29-2	Total Penta PCBs		365	353	pg/g		
26601-64-9	Total Hexa PCBs		588	578	pg/g		
28655-71-2	Total Hepta PCBs		203	198	pg/g		
55722-26-4	Total Octa PCBs		60.7	58	pg/g		
53742-07-7	Total Nona PCBs		8.13	6.67	pg/g		
DECACB(Tot)	Total Deca PCB		6.87	6.51	pg/g		
1336-36-3	Total PCB Congeners		1360	1330	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		50.0	198	pg/g	25.2	(15%-150%)
13C-3-MoCB		87.4	198	pg/g	44.0	(15%-150%)
13C-4-DiCB		91.5	198	pg/g	46.1	(25%-150%)
13C-15-DiCB		192	198	pg/g	96.8	(25%-150%)
13C-19-TrCB		141	198	pg/g	71.0	(25%-150%)
13C-37-TrCB		168	198	pg/g	84.5	(25%-150%)
13C-54-TeCB		123	198	pg/g	61.8	(25%-150%)
13C-77-TeCB		209	198	pg/g	105	(25%-150%)
13C-81-TeCB		207	198	pg/g	104	(25%-150%)
13C-104-PeCB		144	198	pg/g	72.5	(25%-150%)
13C-105-PeCB		161	198	pg/g	81.2	(25%-150%)
13C-114-PeCB		153	198	pg/g	77.3	(25%-150%)
13C-118-PeCB		163	198	pg/g	82.1	(25%-150%)
13C-123-PeCB		168	198	pg/g	84.9	(25%-150%)
13C-126-PeCB		177	198	pg/g	89.3	(25%-150%)
13C-155-HxCB		141	198	pg/g	71.2	(25%-150%)
13C-156-HxCB	C	297	397	pg/g	74.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		140	198	pg/g	70.7	(25%-150%)
13C-169-HxCB		170	198	pg/g	85.8	(25%-150%)
13C-188-HpCB		120	198	pg/g	60.6	(25%-150%)
13C-189-HpCB		137	198	pg/g	69.1	(25%-150%)
13C-202-OcCB		126	198	pg/g	63.6	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878002**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.4**
Client ID:	**CACV-14-49263**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 00:31**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.77 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		174	198	pg/g	87.7	(25%-150%)
13C-206-NoCB		164	198	pg/g	82.6	(25%-150%)
13C-208-NoCB		157	198	pg/g	78.9	(25%-150%)
13C-209-DeCB		189	198	pg/g	95.4	(25%-150%)
13C-28-TrCB		141	198	pg/g	71.2	(30%-135%)
13C-111-PeCB		173	198	pg/g	87.1	(30%-135%)
13C-178-HpCB		172	198	pg/g	86.6	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878003**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**29.6**
Client ID:	**CACV-14-49261**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 01:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-9**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	J	5.07	4.85	pg/g	0.995	4.97
2051-61-8	PCB-2		10.2	9.27	pg/g	0.995	1.99
2051-62-9	PCB-3		14.6	14.2	pg/g	0.995	1.99
13029-08-8	PCB-4		11.2	10.4	pg/g	0.995	3.98
16605-91-7	PCB-5	U	.995	.995	pg/g	0.995	3.98
25569-80-6	PCB-6		9.49	8.95	pg/g	0.995	1.99
33284-50-3	PCB-7	J	2.28	1.53	pg/g	0.995	3.98
34883-43-7	PCB-8		43.3	42.8	pg/g	0.995	19.9
34883-39-1	PCB-9		3.02	2.5	pg/g	0.995	1.99
33146-45-1	PCB-10	U	.995	.995	pg/g	0.995	3.98
2050-67-1	PCB-11	J	26.9	26.3	pg/g	1.99	49.7
PCB-12/13	PCB-13/12	C	32.2	31.5	pg/g	0.995	7.96
34883-41-5	PCB-14	U	1.48	.995	pg/g	0.995	3.98
2050-68-2	PCB-15		42.7	42	pg/g	0.995	19.9
38444-78-9	PCB-16		38.5	38.2	pg/g	0.995	3.98
37680-66-3	PCB-17		41.4	41	pg/g	0.662	3.98
PCB-18/30	PCB-18/30	C	98.0	97.8	pg/g	1.33	3.98
38444-73-4	PCB-19		9.49	9.27	pg/g	0.662	1.99
PCB-20/28	PCB-20/28	C	288	288	pg/g	1.33	19.9
PCB-21/33	PCB-21/33	C	83.8	83.7	pg/g	1.33	7.96
38444-85-8	PCB-22		73.3	72.2	pg/g	0.662	3.98
55720-44-0	PCB-23	U	.662	.662	pg/g	0.662	1.99
55702-45-9	PCB-24	U	.662	.662	pg/g	0.662	1.99
55712-37-3	PCB-25		10.0	9.88	pg/g	0.662	1.99
PCB-26/29	PCB-26/29	C	23.3	23.2	pg/g	1.33	3.98
38444-76-7	PCB-27		7.47	7.31	pg/g	0.662	1.99
16606-02-3	PCB-31		229	229	pg/g	0.662	9.95
38444-77-8	PCB-32		32.7	32.5	pg/g	0.662	1.99
37680-68-5	PCB-34	J	1.06	.898	pg/g	0.662	1.99
37680-69-6	PCB-35		15.8	15.5	pg/g	0.662	3.98
38444-87-0	PCB-36	J	2.19	1.96	pg/g	0.662	3.98
38444-90-5	PCB-37		83.4	83.1	pg/g	0.662	19.9

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878003**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**29.6**
Client ID:	**CACV-14-49261**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 01:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-9**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38		23.5	23.2	pg/g	0.662	1.99
38444-88-1	PCB-39		4.54	4.25	pg/g	0.662	3.98
PCB-40/71	PCB-40/71	C	183	183	pg/g	1.33	3.98
52663-59-9	PCB-41		22.8	22.3	pg/g	1.33	1.99
36559-22-5	PCB-42		112	111	pg/g	0.995	1.99
70362-46-8	PCB-43		14.2	13.7	pg/g	1.33	3.98
PCB-44/47/65	PCB-44/65/47	C	459	459	pg/g	3.32	5.97
PCB-45/51	PCB-45/51	C	41.0	40.6	pg/g	1.33	3.98
41464-47-5	PCB-46		13.4	13.2	pg/g	0.662	1.99
70362-47-9	PCB-48		73.3	72.7	pg/g	0.662	1.99
PCB-49/69	PCB-69/49	C	283	282	pg/g	1.33	3.98
PCB-50/53	PCB-50/53	C	34.2	33.9	pg/g	1.33	3.98
35693-99-3	PCB-52		474	473	pg/g	1.33	1.99
15968-05-5	PCB-54	U	.662	.662	pg/g	0.662	1.99
74338-24-2	PCB-55		4.18	3.91	pg/g	0.995	1.99
41464-43-1	PCB-56		235	234	pg/g	0.662	3.98
70424-67-8	PCB-57	U	.995	.995	pg/g	0.995	1.99
41464-49-7	PCB-58	J	1.82	1.56	pg/g	0.995	1.99
PCB-59/62/75	PCB-59/62/75	C	21.9	21.6	pg/g	1.99	5.97
33025-41-1	PCB-60		106	105	pg/g	0.662	3.98
PCB-61-76	PCB-61/76/70/74	C	754	754	pg/g	2.65	7.96
74472-34-7	PCB-63		11.6	11.5	pg/g	0.662	4.97
52663-58-8	PCB-64		187	187	pg/g	0.995	1.99
32598-10-0	PCB-66		444	444	pg/g	0.995	4.97
73575-53-8	PCB-67		5.84	5.66	pg/g	0.995	1.99
73575-52-7	PCB-68	J	1.47	1.23	pg/g	0.662	1.99
41464-42-0	PCB-72	J	2.41	2.22	pg/g	0.662	3.98
74338-23-1	PCB-73	U	.995	.995	pg/g	0.995	1.99
32598-13-3	PCB-77		47.3	47.1	pg/g	0.662	1.99
70362-49-1	PCB-78	J	0.983	.786	pg/g	0.662	1.99
41464-48-6	PCB-79		7.09	6.92	pg/g	0.662	3.98
33284-52-5	PCB-80	U	.662	.662	pg/g	0.662	3.98

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878003**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**29.6**
Client ID:	**CACV-14-49261**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 01:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-9**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81		2.39	2.17	pg/g	0.662	1.99
52663-62-4	PCB-82		77.7	77.3	pg/g	0.995	4.97
60145-20-2	PCB-83		27.5	27.1	pg/g	0.995	1.99
52663-60-2	PCB-84		137	136	pg/g	0.995	1.99
PCB-85-117	PCB-117/116/85	C	121	121	pg/g	1.99	5.97
PCB-86-125	PCB-86/87/97/109/119/125	C	381	381	pg/g	3.98	11.9
PCB-88/91	PCB-88/91	C	78.8	78.4	pg/g	1.33	3.98
73575-57-2	PCB-89		6.99	6.64	pg/g	0.662	1.99
PCB-90-113	PCB-113/90/101	C	487	487	pg/g	1.99	5.97
52663-61-3	PCB-92		84.4	84	pg/g	0.995	1.99
PCB-93/100	PCB-93/100	CJ	3.54	3.16	pg/g	1.99	3.98
73575-55-0	PCB-94		2.52	2.05	pg/g	0.662	1.99
38379-99-6	PCB-95		374	374	pg/g	1.33	3.98
73575-54-9	PCB-96		2.64	2.46	pg/g	0.662	1.99
PCB-98/102	PCB-102/98	C	15.7	15.4	pg/g	1.33	3.98
38380-01-7	PCB-99		262	262	pg/g	1.33	1.99
60145-21-3	PCB-103	J	2.12	1.81	pg/g	0.662	4.97
56558-16-8	PCB-104	U	.662	.662	pg/g	0.662	1.99
32598-14-4	PCB-105		200	200	pg/g	0.995	1.99
70424-69-0	PCB-106	U	.995	.995	pg/g	0.995	1.99
70424-68-9	PCB-107		29.0	28.7	pg/g	0.662	3.98
PCB-108/124	PCB-108/124	C	19.5	19.2	pg/g	1.33	3.98
PCB-110/115	PCB-110/115	C	678	676	pg/g	2.65	3.98
39635-32-0	PCB-111	U	.662	.662	pg/g	0.662	1.99
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	1.99
74472-37-0	PCB-114		8.47	8.12	pg/g	0.662	1.99
31508-00-6	PCB-118		350	348	pg/g	1.33	3.98
68194-12-7	PCB-120	U	0.847	.662	pg/g	0.662	1.99
56558-18-0	PCB-121	U	.662	.662	pg/g	0.662	1.99
76842-07-4	PCB-122	U	6.75	.662	pg/g	0.662	6.88
65510-44-3	PCB-123		9.72	9.4	pg/g	0.662	1.99
57465-28-8	PCB-126		2.93	2.55	pg/g	0.662	1.99

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878003**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**29.6**
Client ID:	**CACV-14-49261**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 01:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-9**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.662	.662	pg/g	0.662	1.99
PCB-128/166	PCB-128/166	C	96.8	96.5	pg/g	1.33	3.98
PCB-129-163	PCB-138/163/129	C	680	679	pg/g	2.65	5.97
52663-66-8	PCB-130		36.9	36.6	pg/g	0.995	1.99
61798-70-7	PCB-131		7.65	7.25	pg/g	0.662	1.99
38380-05-1	PCB-132		209	208	pg/g	0.995	1.99
35694-04-3	PCB-133		6.62	6.28	pg/g	0.662	1.99
52704-70-8	PCB-134		25.3	24.8	pg/g	1.33	1.99
PCB-135/151	PCB-151/135	C	187	187	pg/g	1.33	3.98
38411-22-2	PCB-136		55.5	55.2	pg/g	0.662	1.99
35694-06-5	PCB-137		29.6	29.1	pg/g	1.33	1.99
PCB-139/140	PCB-139/140	C	8.69	8.32	pg/g	1.33	3.98
52712-04-6	PCB-141		115	115	pg/g	1.33	3.98
41411-61-4	PCB-142	U	.662	.662	pg/g	0.662	1.99
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	1.99
68194-14-9	PCB-144		22.8	22.5	pg/g	0.662	1.99
74472-40-5	PCB-145	U	.662	.662	pg/g	0.662	1.99
51908-16-8	PCB-146		73.0	72.5	pg/g	0.995	1.99
PCB-147/149	PCB-147/149	C	459	457	pg/g	1.99	7.96
74472-41-6	PCB-148	U	.662	.662	pg/g	0.662	1.99
68194-08-1	PCB-150	U	.995	.995	pg/g	0.995	1.99
68194-09-2	PCB-152	U	.662	.662	pg/g	0.662	1.99
PCB-153/168	PCB-153/168	C	509	509	pg/g	1.99	7.96
60145-22-4	PCB-154		3.19	2.91	pg/g	0.662	1.99
33979-03-2	PCB-155		2.72	2.51	pg/g	0.662	1.99
PCB-156/157	PCB-156/157	C	57.7	57.4	pg/g	1.33	3.98
74472-42-7	PCB-158		56.0	55.8	pg/g	0.662	1.99
39635-35-3	PCB-159	U	.662	.662	pg/g	0.662	1.99
41411-62-5	PCB-160	U	.662	.662	pg/g	0.662	1.99
74472-43-8	PCB-161	U	.995	.995	pg/g	0.995	1.99
39635-34-2	PCB-162	J	2.00	1.71	pg/g	0.995	1.99
74472-45-0	PCB-164		45.3	45	pg/g	0.662	1.99

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878003**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**29.6**
Client ID:	**CACV-14-49261**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 01:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-9**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.662	.662	pg/g	0.662	1.99
52663-72-6	PCB-167		24.2	24	pg/g	0.662	1.99
32774-16-6	PCB-169	U	.995	.995	pg/g	0.995	1.99
35065-30-6	PCB-170		162	162	pg/g	0.662	1.99
PCB-171/173	PCB-173/171	C	42.2	42	pg/g	1.33	3.98
52663-74-8	PCB-172		27.2	26.9	pg/g	0.995	1.99
38411-25-5	PCB-174		177	176	pg/g	1.33	1.99
40186-70-7	PCB-175		5.10	4.85	pg/g	0.995	1.99
52663-65-7	PCB-176		15.3	15.1	pg/g	0.662	1.99
52663-70-4	PCB-177		97.1	96.8	pg/g	0.995	1.99
52663-67-9	PCB-178		32.0	31.8	pg/g	1.33	1.99
52663-64-6	PCB-179		62.7	62.5	pg/g	0.662	1.99
PCB-180/193	PCB-193/180	CU	1.99	1.99	pg/g	1.99	3.98
74472-47-2	PCB-181	U	1.24	.995	pg/g	0.995	1.99
60145-23-5	PCB-182	U	.662	.662	pg/g	0.662	1.99
PCB-183/185	PCB-183/185	C	84.5	84.2	pg/g	1.33	3.98
74472-48-3	PCB-184	U	.662	.662	pg/g	0.662	1.99
74472-49-4	PCB-186	U	.662	.662	pg/g	0.662	1.99
52663-68-0	PCB-187		219	219	pg/g	0.995	1.99
74487-85-7	PCB-188	U	.662	.662	pg/g	0.662	1.99
39635-31-9	PCB-189		5.37	5.11	pg/g	0.662	1.99
41411-64-7	PCB-190		34.6	34.4	pg/g	0.995	1.99
74472-50-7	PCB-191		5.17	4.94	pg/g	0.662	1.99
74472-51-8	PCB-192	U	.662	.662	pg/g	0.662	1.99
35694-08-7	PCB-194		84.4	84.1	pg/g	0.662	1.99
52663-78-2	PCB-195		33.5	33.2	pg/g	0.995	1.99
42740-50-1	PCB-196		34.8	34.5	pg/g	0.662	1.99
PCB-197/200	PCB-197/200	C	12.1	11.8	pg/g	1.33	3.98
PCB-198/199	PCB-198/199	C	90.0	89.7	pg/g	1.33	3.98
40186-71-8	PCB-201		8.10	7.87	pg/g	0.662	1.99
2136-99-4	PCB-202		17.3	17	pg/g	0.995	1.99
52663-76-0	PCB-203		55.6	55.2	pg/g	1.33	1.99

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878003**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**29.6**
Client ID:	**CACV-14-49261**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 01:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-9**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.995	.995	pg/g	0.995	1.99
74472-53-0	PCB-205		4.09	3.86	pg/g	0.662	1.99
40186-72-9	PCB-206		29.7	29.3	pg/g	0.995	1.99
52663-79-3	PCB-207		3.48	3.2	pg/g	0.662	1.99
52663-77-1	PCB-208		8.29	7.97	pg/g	0.662	1.99
2051-24-3	PCB-209		28.2	27.9	pg/g	0.662	1.99
27323-18-8	Total Mono PCBs		29.8	28.3	pg/g		
25512-42-9	Total Di PCBs		172	166	pg/g		
25323-68-6	Total Tri PCBs		1070	1060	pg/g		
26914-33-0	Total Tetra PCBs		3540	3530	pg/g		
25429-29-2	Total Penta PCBs		3370	3350	pg/g		
26601-64-9	Total Hexa PCBs		2710	2700	pg/g		
28655-71-2	Total Hepta PCBs		971	966	pg/g		
55722-26-4	Total Octa PCBs		340	337	pg/g		
53742-07-7	Total Nona PCBs		41.5	40.4	pg/g		
DECACB(Tot)	Total Deca PCB		28.2	27.9	pg/g		
1336-36-3	Total PCB Congeners		12300	12200	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		70.3	199	pg/g	35.3	(15%-150%)
13C-3-MoCB		94.9	199	pg/g	47.7	(15%-150%)
13C-4-DiCB		97.4	199	pg/g	49.0	(25%-150%)
13C-15-DiCB		140	199	pg/g	70.5	(25%-150%)
13C-19-TrCB		114	199	pg/g	57.1	(25%-150%)
13C-37-TrCB		158	199	pg/g	79.7	(25%-150%)
13C-54-TeCB		141	199	pg/g	70.8	(25%-150%)
13C-77-TeCB		194	199	pg/g	97.3	(25%-150%)
13C-81-TeCB		192	199	pg/g	96.7	(25%-150%)
13C-104-PeCB		151	199	pg/g	75.7	(25%-150%)
13C-105-PeCB		164	199	pg/g	82.7	(25%-150%)
13C-114-PeCB		156	199	pg/g	78.2	(25%-150%)
13C-118-PeCB		166	199	pg/g	83.5	(25%-150%)
13C-123-PeCB		172	199	pg/g	86.3	(25%-150%)
13C-126-PeCB		183	199	pg/g	92.2	(25%-150%)
13C-155-HxCB		149	199	pg/g	74.7	(25%-150%)
13C-156-HxCB	C	323	398	pg/g	81.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		153	199	pg/g	76.7	(25%-150%)
13C-169-HxCB		192	199	pg/g	96.5	(25%-150%)
13C-188-HpCB		105	199	pg/g	52.8	(25%-150%)
13C-189-HpCB		139	199	pg/g	70.1	(25%-150%)
13C-202-OcCB		119	199	pg/g	60.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878003**	**Date Collected:**	**03/07/2014 10:30**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**29.6**
Client ID:	**CACV-14-49261**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 01:38**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-9**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**14.28 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		177	199	pg/g	88.8	(25%-150%)
13C-206-NoCB		164	199	pg/g	82.7	(25%-150%)
13C-208-NoCB		153	199	pg/g	77.1	(25%-150%)
13C-209-DeCB		187	199	pg/g	93.9	(25%-150%)
13C-28-TrCB		169	199	pg/g	85.0	(30%-135%)
13C-111-PeCB		188	199	pg/g	94.4	(30%-135%)
13C-178-HpCB		184	199	pg/g	92.7	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878004**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**7**
Client ID:	**CACV-14-49262**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 02:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-10**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.979	.979	pg/g	0.979	4.90
2051-61-8	PCB-2	U	.979	.979	pg/g	0.979	1.96
2051-62-9	PCB-3	U	.979	.979	pg/g	0.979	1.96
13029-08-8	PCB-4	U	.979	.979	pg/g	0.979	3.92
16605-91-7	PCB-5	U	.979	.979	pg/g	0.979	3.92
25569-80-6	PCB-6	U	.979	.979	pg/g	0.979	1.96
33284-50-3	PCB-7	U	.979	.979	pg/g	0.979	3.92
34883-43-7	PCB-8	U	.979	.979	pg/g	0.979	19.6
34883-39-1	PCB-9	U	.979	.979	pg/g	0.979	1.96
33146-45-1	PCB-10	U	.979	.979	pg/g	0.979	3.92
2050-67-1	PCB-11	U	1.96	1.96	pg/g	1.96	49.0
PCB-12/13	PCB-13/12	CU	.979	.979	pg/g	0.979	7.83
34883-41-5	PCB-14	U	.979	.979	pg/g	0.979	3.92
2050-68-2	PCB-15	U	1.12	.979	pg/g	0.979	19.6
38444-78-9	PCB-16	U	.979	.979	pg/g	0.979	3.92
37680-66-3	PCB-17	J	1.27	.937	pg/g	0.652	3.92
PCB-18/30	PCB-18/30	CJ	2.47	2.28	pg/g	1.31	3.92
38444-73-4	PCB-19	U	.652	.652	pg/g	0.652	1.96
PCB-20/28	PCB-20/28	CJ	6.25	6.08	pg/g	1.31	19.6
PCB-21/33	PCB-21/33	CJ	2.03	1.87	pg/g	1.31	7.83
38444-85-8	PCB-22	J	2.13	1.1	pg/g	0.652	3.92
55720-44-0	PCB-23	U	.652	.652	pg/g	0.652	1.96
55702-45-9	PCB-24	U	.652	.652	pg/g	0.652	1.96
55712-37-3	PCB-25	U	.652	.652	pg/g	0.652	1.96
PCB-26/29	PCB-26/29	CU	1.31	1.31	pg/g	1.31	3.92
38444-76-7	PCB-27	U	.652	.652	pg/g	0.652	1.96
16606-02-3	PCB-31	J	5.15	5	pg/g	0.652	9.79
38444-77-8	PCB-32	U	.652	.652	pg/g	0.652	1.96
37680-68-5	PCB-34	U	.652	.652	pg/g	0.652	1.96
37680-69-6	PCB-35	U	.652	.652	pg/g	0.652	3.92
38444-87-0	PCB-36	U	.652	.652	pg/g	0.652	3.92
38444-90-5	PCB-37	J	3.55	3.22	pg/g	0.652	19.6

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878004**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**7**
Client ID:	**CACV-14-49262**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 02:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-10**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	J	1.26	1.02	pg/g	0.652	1.96
38444-88-1	PCB-39	U	.652	.652	pg/g	0.652	3.92
PCB-40/71	PCB-40/71	C	5.01	4.62	pg/g	1.31	3.92
52663-59-9	PCB-41	U	1.31	1.31	pg/g	1.31	1.96
36559-22-5	PCB-42		3.03	2.62	pg/g	0.979	1.96
70362-46-8	PCB-43	U	1.31	1.31	pg/g	1.31	3.92
PCB-44/47/65	PCB-44/65/47	C	13.9	13.6	pg/g	3.27	5.87
PCB-45/51	PCB-45/51	CU	1.42	1.31	pg/g	1.31	3.92
41464-47-5	PCB-46	U	.652	.652	pg/g	0.652	1.96
70362-47-9	PCB-48	J	1.61	1.06	pg/g	0.652	1.96
PCB-49/69	PCB-69/49	C	8.69	8.38	pg/g	1.31	3.92
PCB-50/53	PCB-50/53	CU	1.32	1.31	pg/g	1.31	3.92
35693-99-3	PCB-52		17.2	16.9	pg/g	1.31	1.96
15968-05-5	PCB-54	U	.652	.652	pg/g	0.652	1.96
74338-24-2	PCB-55	U	.979	.979	pg/g	0.979	1.96
41464-43-1	PCB-56		8.54	8.04	pg/g	0.652	3.92
70424-67-8	PCB-57	U	.979	.979	pg/g	0.979	1.96
41464-49-7	PCB-58	U	.979	.979	pg/g	0.979	1.96
PCB-59/62/75	PCB-59/62/75	CU	1.96	1.96	pg/g	1.96	5.87
33025-41-1	PCB-60	J	3.66	3.2	pg/g	0.652	3.92
PCB-61-76	PCB-61/76/70/74	C	27.9	27.7	pg/g	2.60	7.83
74472-34-7	PCB-63	U	.652	.652	pg/g	0.652	4.90
52663-58-8	PCB-64		5.30	4.94	pg/g	0.979	1.96
32598-10-0	PCB-66		16.2	16	pg/g	0.979	4.90
73575-53-8	PCB-67	U	.979	.979	pg/g	0.979	1.96
73575-52-7	PCB-68	U	.652	.652	pg/g	0.652	1.96
41464-42-0	PCB-72	U	.652	.652	pg/g	0.652	3.92
74338-23-1	PCB-73	U	.979	.979	pg/g	0.979	1.96
32598-13-3	PCB-77		3.26	3.03	pg/g	0.652	1.96
70362-49-1	PCB-78	U	.652	.652	pg/g	0.652	1.96
41464-48-6	PCB-79	U	.652	.652	pg/g	0.652	3.92
33284-52-5	PCB-80	U	.652	.652	pg/g	0.652	3.92

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878004**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**7**
Client ID:	**CACV-14-49262**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 02:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-10**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.652	.652	pg/g	0.652	1.96
52663-62-4	PCB-82		7.06	6.7	pg/g	0.979	4.90
60145-20-2	PCB-83		3.66	3.28	pg/g	0.979	1.96
52663-60-2	PCB-84		17.2	16.8	pg/g	0.979	1.96
PCB-85-117	PCB-117/116/85	C	10.9	10.6	pg/g	1.96	5.87
PCB-86-125	PCB-86/87/97/109/119/125	C	34.9	34.6	pg/g	3.92	11.7
PCB-88/91	PCB-88/91	C	9.36	8.99	pg/g	1.31	3.92
73575-57-2	PCB-89	U	.652	.652	pg/g	0.652	1.96
PCB-90-113	PCB-113/90/101	C	55.3	55	pg/g	1.96	5.87
52663-61-3	PCB-92		11.7	11.4	pg/g	0.979	1.96
PCB-93/100	PCB-93/100	CU	1.96	1.96	pg/g	1.96	3.92
73575-55-0	PCB-94	U	.652	.652	pg/g	0.652	1.96
38379-99-6	PCB-95		56.6	56.3	pg/g	1.31	3.92
73575-54-9	PCB-96	U	.652	.652	pg/g	0.652	1.96
PCB-98/102	PCB-102/98	CU	1.37	1.31	pg/g	1.31	3.92
38380-01-7	PCB-99		25.0	24.3	pg/g	1.31	1.96
60145-21-3	PCB-103	U	.652	.652	pg/g	0.652	4.90
56558-16-8	PCB-104	U	.652	.652	pg/g	0.652	1.96
32598-14-4	PCB-105		20.8	20.2	pg/g	0.979	1.96
70424-69-0	PCB-106	U	.979	.979	pg/g	0.979	1.96
70424-68-9	PCB-107	J	3.05	2.78	pg/g	0.652	3.92
PCB-108/124	PCB-108/124	CJ	2.65	2.32	pg/g	1.31	3.92
PCB-110/115	PCB-110/115	C	97.2	94.8	pg/g	2.60	3.92
39635-32-0	PCB-111	U	.652	.652	pg/g	0.652	1.96
74472-36-9	PCB-112	U	1.31	1.31	pg/g	1.31	1.96
74472-37-0	PCB-114	U	0.930	.652	pg/g	0.652	1.96
31508-00-6	PCB-118		43.5	41.7	pg/g	1.31	3.92
68194-12-7	PCB-120	U	.652	.652	pg/g	0.652	1.96
56558-18-0	PCB-121	U	.652	.652	pg/g	0.652	1.96
76842-07-4	PCB-122	U	0.824	.652	pg/g	0.652	6.78
65510-44-3	PCB-123	J	1.23	.919	pg/g	0.652	1.96
57465-28-8	PCB-126	U	.652	.652	pg/g	0.652	1.96

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878004**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**7**
Client ID:	**CACV-14-49262**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 02:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-10**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.652	.652	pg/g	0.652	1.96
PCB-128/166	PCB-128/166	C	30.2	29.9	pg/g	1.31	3.92
PCB-129-163	PCB-138/163/129	C	182	182	pg/g	2.60	5.87
52663-66-8	PCB-130		10.6	10.2	pg/g	0.979	1.96
61798-70-7	PCB-131	J	1.83	1.44	pg/g	0.652	1.96
38380-05-1	PCB-132		49.3	48.1	pg/g	0.979	1.96
35694-04-3	PCB-133	J	1.85	1.51	pg/g	0.652	1.96
52704-70-8	PCB-134		6.78	6.32	pg/g	1.31	1.96
PCB-135/151	PCB-151/135	C	39.5	39.1	pg/g	1.31	3.92
38411-22-2	PCB-136		11.1	10.9	pg/g	0.652	1.96
35694-06-5	PCB-137		8.38	7.91	pg/g	1.31	1.96
PCB-139/140	PCB-139/140	CJ	2.26	1.9	pg/g	1.31	3.92
52712-04-6	PCB-141		26.6	26.3	pg/g	1.31	3.92
41411-61-4	PCB-142	U	.652	.652	pg/g	0.652	1.96
68194-15-0	PCB-143	U	1.31	1.31	pg/g	1.31	1.96
68194-14-9	PCB-144		5.42	5.12	pg/g	0.652	1.96
74472-40-5	PCB-145	U	.652	.652	pg/g	0.652	1.96
51908-16-8	PCB-146		18.6	18.1	pg/g	0.979	1.96
PCB-147/149	PCB-147/149	C	105	103	pg/g	1.96	7.83
74472-41-6	PCB-148	U	.652	.652	pg/g	0.652	1.96
68194-08-1	PCB-150	U	.979	.979	pg/g	0.979	1.96
68194-09-2	PCB-152	U	.652	.652	pg/g	0.652	1.96
PCB-153/168	PCB-153/168	C	119	118	pg/g	1.96	7.83
60145-22-4	PCB-154	U	0.844	.652	pg/g	0.652	1.96
33979-03-2	PCB-155	U	.652	.652	pg/g	0.652	1.96
PCB-156/157	PCB-156/157	C	24.7	24.4	pg/g	1.31	3.92
74472-42-7	PCB-158		16.3	16	pg/g	0.652	1.96
39635-35-3	PCB-159	U	.652	.652	pg/g	0.652	1.96
41411-62-5	PCB-160	U	.652	.652	pg/g	0.652	1.96
74472-43-8	PCB-161	U	.979	.979	pg/g	0.979	1.96
39635-34-2	PCB-162	U	.979	.979	pg/g	0.979	1.96
74472-45-0	PCB-164		13.3	13	pg/g	0.652	1.96

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878004**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**7**
Client ID:	**CACV-14-49262**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 02:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-10**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.652	.652	pg/g	0.652	1.96
52663-72-6	PCB-167		10.2	9.97	pg/g	0.652	1.96
32774-16-6	PCB-169	U	.979	.979	pg/g	0.979	1.96
35065-30-6	PCB-170		56.5	56.1	pg/g	0.652	1.96
PCB-171/173	PCB-173/171	C	13.4	13.2	pg/g	1.31	3.92
52663-74-8	PCB-172		8.25	7.95	pg/g	0.979	1.96
38411-25-5	PCB-174		41.7	41.4	pg/g	1.31	1.96
40186-70-7	PCB-175	J	1.40	1.14	pg/g	0.979	1.96
52663-65-7	PCB-176		3.63	3.43	pg/g	0.652	1.96
52663-70-4	PCB-177		24.4	24.1	pg/g	0.979	1.96
52663-67-9	PCB-178		7.12	6.84	pg/g	1.31	1.96
52663-64-6	PCB-179		12.1	12	pg/g	0.652	1.96
PCB-180/193	PCB-193/180	CU	1.96	1.96	pg/g	1.96	3.92
74472-47-2	PCB-181	U	.979	.979	pg/g	0.979	1.96
60145-23-5	PCB-182	U	.652	.652	pg/g	0.652	1.96
PCB-183/185	PCB-183/185	C	22.7	22.4	pg/g	1.31	3.92
74472-48-3	PCB-184	U	.652	.652	pg/g	0.652	1.96
74472-49-4	PCB-186	U	.652	.652	pg/g	0.652	1.96
52663-68-0	PCB-187		46.9	46.4	pg/g	0.979	1.96
74487-85-7	PCB-188	U	.652	.652	pg/g	0.652	1.96
39635-31-9	PCB-189		2.44	2.18	pg/g	0.652	1.96
41411-64-7	PCB-190		11.2	10.9	pg/g	0.979	1.96
74472-50-7	PCB-191	J	1.89	1.67	pg/g	0.652	1.96
74472-51-8	PCB-192	U	.652	.652	pg/g	0.652	1.96
35694-08-7	PCB-194		21.5	21.2	pg/g	0.652	1.96
52663-78-2	PCB-195		8.09	7.81	pg/g	0.979	1.96
42740-50-1	PCB-196		8.28	7.98	pg/g	0.652	1.96
PCB-197/200	PCB-197/200	CJ	2.62	2.36	pg/g	1.31	3.92
PCB-198/199	PCB-198/199	C	19.1	18.7	pg/g	1.31	3.92
40186-71-8	PCB-201	J	1.73	1.5	pg/g	0.652	1.96
2136-99-4	PCB-202		3.26	2.98	pg/g	0.979	1.96
52663-76-0	PCB-203		12.7	12.3	pg/g	1.31	1.96

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878004**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**7**
Client ID:	**CACV-14-49262**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 02:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-10**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.979	.979	pg/g	0.979	1.96
74472-53-0	PCB-205	J	1.08	.848	pg/g	0.652	1.96
40186-72-9	PCB-206		6.47	6.06	pg/g	0.979	1.96
52663-79-3	PCB-207	U	0.738	.652	pg/g	0.652	1.96
52663-77-1	PCB-208	J	1.71	1.39	pg/g	0.652	1.96
2051-24-3	PCB-209		5.88	5.53	pg/g	0.652	1.96
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	1.12	0	pg/g		
25323-68-6	Total Tri PCBs		24.1	21.5	pg/g		
26914-33-0	Total Tetra PCBs		117	110	pg/g		
25429-29-2	Total Penta PCBs		403	391	pg/g		
26601-64-9	Total Hexa PCBs		684	674	pg/g		
28655-71-2	Total Hepta PCBs		254	250	pg/g		
55722-26-4	Total Octa PCBs		78.4	75.7	pg/g		
53742-07-7	Total Nona PCBs		8.92	7.45	pg/g		
DECACB(Tot)	Total Deca PCB		5.88	5.53	pg/g		
1336-36-3	Total PCB Congeners		1580	1530	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		58.4	196	pg/g	29.8	(15%-150%)
13C-3-MoCB		86.6	196	pg/g	44.2	(15%-150%)
13C-4-DiCB		83.6	196	pg/g	42.7	(25%-150%)
13C-15-DiCB		131	196	pg/g	67.0	(25%-150%)
13C-19-TrCB		108	196	pg/g	54.9	(25%-150%)
13C-37-TrCB		156	196	pg/g	79.5	(25%-150%)
13C-54-TeCB		143	196	pg/g	72.8	(25%-150%)
13C-77-TeCB		186	196	pg/g	95.0	(25%-150%)
13C-81-TeCB		183	196	pg/g	93.2	(25%-150%)
13C-104-PeCB		155	196	pg/g	79.3	(25%-150%)
13C-105-PeCB		154	196	pg/g	78.7	(25%-150%)
13C-114-PeCB		146	196	pg/g	74.5	(25%-150%)
13C-118-PeCB		155	196	pg/g	79.3	(25%-150%)
13C-123-PeCB		161	196	pg/g	82.3	(25%-150%)
13C-126-PeCB		166	196	pg/g	85.0	(25%-150%)
13C-155-HxCB		154	196	pg/g	78.8	(25%-150%)
13C-156-HxCB	C	325	392	pg/g	83.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		151	196	pg/g	77.1	(25%-150%)
13C-169-HxCB		189	196	pg/g	96.7	(25%-150%)
13C-188-HpCB		101	196	pg/g	51.6	(25%-150%)
13C-189-HpCB		133	196	pg/g	67.9	(25%-150%)
13C-202-OcCB		112	196	pg/g	57.4	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878004**	**Date Collected:**	**03/07/2014 10:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**7**
Client ID:	**CACV-14-49262**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 02:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-10**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		170	196	pg/g	86.8	(25%-150%)
13C-206-NoCB		158	196	pg/g	80.5	(25%-150%)
13C-208-NoCB		148	196	pg/g	75.5	(25%-150%)
13C-209-DeCB		164	196	pg/g	83.6	(25%-150%)
13C-28-TrCB		157	196	pg/g	80.3	(30%-135%)
13C-111-PeCB		174	196	pg/g	88.8	(30%-135%)
13C-178-HpCB		166	196	pg/g	84.7	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878005**	**Date Collected:**	**03/07/2014 11:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**8.6**
Client ID:	**CAWA-14-49297**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 06:21**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.97 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.998	.998	pg/g	0.998	4.99
2051-61-8	PCB-2	U	.998	.998	pg/g	0.998	2.00
2051-62-9	PCB-3	U	.998	.998	pg/g	0.998	2.00
13029-08-8	PCB-4	U	1.29	.998	pg/g	0.998	3.99
16605-91-7	PCB-5	U	.998	.998	pg/g	0.998	3.99
25569-80-6	PCB-6	U	1.04	.998	pg/g	0.998	2.00
33284-50-3	PCB-7	U	.998	.998	pg/g	0.998	3.99
34883-43-7	PCB-8	J	4.61	4.09	pg/g	0.998	20.0
34883-39-1	PCB-9	U	.998	.998	pg/g	0.998	2.00
33146-45-1	PCB-10	U	.998	.998	pg/g	0.998	3.99
2050-67-1	PCB-11	BJ	3.07	2.52	pg/g	2.00	49.9
PCB-12/13	PCB-13/12	CU	.998	.998	pg/g	0.998	7.98
34883-41-5	PCB-14	U	.998	.998	pg/g	0.998	3.99
2050-68-2	PCB-15	U	.998	.998	pg/g	0.998	20.0
38444-78-9	PCB-16	J	1.37	1.09	pg/g	0.998	3.99
37680-66-3	PCB-17	J	1.56	1.23	pg/g	0.664	3.99
PCB-18/30	PCB-18/30	CJ	2.82	2.63	pg/g	1.33	3.99
38444-73-4	PCB-19	U	.664	.664	pg/g	0.664	2.00
PCB-20/28	PCB-20/28	CJ	7.83	7.67	pg/g	1.33	20.0
PCB-21/33	PCB-21/33	CJ	3.89	3.73	pg/g	1.33	7.98
38444-85-8	PCB-22	J	2.76	1.73	pg/g	0.664	3.99
55720-44-0	PCB-23	U	.664	.664	pg/g	0.664	2.00
55702-45-9	PCB-24	U	.664	.664	pg/g	0.664	2.00
55712-37-3	PCB-25	U	.664	.664	pg/g	0.664	2.00
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	3.99
38444-76-7	PCB-27	U	.664	.664	pg/g	0.664	2.00
16606-02-3	PCB-31	J	6.76	6.62	pg/g	0.664	9.98
38444-77-8	PCB-32	U	.664	.664	pg/g	0.664	2.00
37680-68-5	PCB-34	U	.664	.664	pg/g	0.664	2.00
37680-69-6	PCB-35	U	.664	.664	pg/g	0.664	3.99
38444-87-0	PCB-36	U	.664	.664	pg/g	0.664	3.99
38444-90-5	PCB-37	J	3.58	3.25	pg/g	0.664	20.0

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878005**	**Date Collected:**	**03/07/2014 11:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**8.6**
Client ID:	**CAWA-14-49297**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 06:21**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.97 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	J	0.972	.734	pg/g	0.664	2.00
38444-88-1	PCB-39	U	.664	.664	pg/g	0.664	3.99
PCB-40/71	PCB-40/71	CJ	3.69	3.29	pg/g	1.33	3.99
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	2.00
36559-22-5	PCB-42		2.58	2.17	pg/g	0.998	2.00
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	3.99
PCB-44/47/65	PCB-44/65/47	C	9.96	9.63	pg/g	3.33	5.99
PCB-45/51	PCB-45/51	CU	1.33	1.33	pg/g	1.33	3.99
41464-47-5	PCB-46	U	.664	.664	pg/g	0.664	2.00
70362-47-9	PCB-48	J	1.27	.721	pg/g	0.664	2.00
PCB-49/69	PCB-69/49	C	6.70	6.39	pg/g	1.33	3.99
PCB-50/53	PCB-50/53	CU	1.33	1.33	pg/g	1.33	3.99
35693-99-3	PCB-52		13.1	12.8	pg/g	1.33	2.00
15968-05-5	PCB-54	U	.664	.664	pg/g	0.664	2.00
74338-24-2	PCB-55	U	.998	.998	pg/g	0.998	2.00
41464-43-1	PCB-56		6.67	6.17	pg/g	0.664	3.99
70424-67-8	PCB-57	U	.998	.998	pg/g	0.998	2.00
41464-49-7	PCB-58	U	.998	.998	pg/g	0.998	2.00
PCB-59/62/75	PCB-59/62/75	CU	2	2	pg/g	2.00	5.99
33025-41-1	PCB-60	J	2.90	2.45	pg/g	0.664	3.99
PCB-61-76	PCB-61/76/70/74	C	21.2	21	pg/g	2.65	7.98
74472-34-7	PCB-63	U	.664	.664	pg/g	0.664	4.99
52663-58-8	PCB-64		3.69	3.34	pg/g	0.998	2.00
32598-10-0	PCB-66		12.5	12.3	pg/g	0.998	4.99
73575-53-8	PCB-67	U	.998	.998	pg/g	0.998	2.00
73575-52-7	PCB-68	U	.664	.664	pg/g	0.664	2.00
41464-42-0	PCB-72	U	.664	.664	pg/g	0.664	3.99
74338-23-1	PCB-73	U	.998	.998	pg/g	0.998	2.00
32598-13-3	PCB-77		2.25	2.02	pg/g	0.664	2.00
70362-49-1	PCB-78	U	.664	.664	pg/g	0.664	2.00
41464-48-6	PCB-79	U	.664	.664	pg/g	0.664	3.99
33284-52-5	PCB-80	U	.664	.664	pg/g	0.664	3.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878005**	**Date Collected:**	**03/07/2014 11:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**8.6**
Client ID:	**CAWA-14-49297**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 06:21**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.97 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.664	.664	pg/g	0.664	2.00
52663-62-4	PCB-82		6.34	5.98	pg/g	0.998	4.99
60145-20-2	PCB-83		2.85	2.47	pg/g	0.998	2.00
52663-60-2	PCB-84		13.1	12.7	pg/g	0.998	2.00
PCB-85-117	PCB-117/116/85	C	10.0	9.75	pg/g	2.00	5.99
PCB-86-125	PCB-86/87/97/109/119/125	C	35.2	34.9	pg/g	3.99	12.0
PCB-88/91	PCB-88/91	C	7.41	7.04	pg/g	1.33	3.99
73575-57-2	PCB-89	U	.664	.664	pg/g	0.664	2.00
PCB-90-113	PCB-113/90/101	C	59.3	59	pg/g	2.00	5.99
52663-61-3	PCB-92		10.6	10.3	pg/g	0.998	2.00
PCB-93/100	PCB-93/100	CU	2	2	pg/g	2.00	3.99
73575-55-0	PCB-94	U	.664	.664	pg/g	0.664	2.00
38379-99-6	PCB-95		48.8	48.4	pg/g	1.33	3.99
73575-54-9	PCB-96	U	.664	.664	pg/g	0.664	2.00
PCB-98/102	PCB-102/98	CU	1.33	1.33	pg/g	1.33	3.99
38380-01-7	PCB-99		22.9	22.3	pg/g	1.33	2.00
60145-21-3	PCB-103	U	.664	.664	pg/g	0.664	4.99
56558-16-8	PCB-104	U	.664	.664	pg/g	0.664	2.00
32598-14-4	PCB-105		28.2	27.6	pg/g	0.998	2.00
70424-69-0	PCB-106	U	.998	.998	pg/g	0.998	2.00
70424-68-9	PCB-107	J	3.71	3.44	pg/g	0.664	3.99
PCB-108/124	PCB-108/124	CJ	3.18	2.85	pg/g	1.33	3.99
PCB-110/115	PCB-110/115	C	90.5	88.1	pg/g	2.65	3.99
39635-32-0	PCB-111	U	.664	.664	pg/g	0.664	2.00
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	2.00
74472-37-0	PCB-114	J	1.14	.784	pg/g	0.664	2.00
31508-00-6	PCB-118		55.7	53.8	pg/g	1.33	3.99
68194-12-7	PCB-120	U	.664	.664	pg/g	0.664	2.00
56558-18-0	PCB-121	U	.664	.664	pg/g	0.664	2.00
76842-07-4	PCB-122	U	0.948	.664	pg/g	0.664	6.90
65510-44-3	PCB-123	J	1.27	.954	pg/g	0.664	2.00
57465-28-8	PCB-126	U	.664	.664	pg/g	0.664	2.00

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878005**	**Date Collected:**	**03/07/2014 11:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**8.6**
Client ID:	**CAWA-14-49297**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 06:21**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.97 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.664	.664	pg/g	0.664	2.00
PCB-128/166	PCB-128/166	C	27.7	27.4	pg/g	1.33	3.99
PCB-129-163	PCB-138/163/129	C	229	228	pg/g	2.65	5.99
52663-66-8	PCB-130		11.6	11.2	pg/g	0.998	2.00
61798-70-7	PCB-131	J	2.14	1.75	pg/g	0.664	2.00
38380-05-1	PCB-132		60.2	59	pg/g	0.998	2.00
35694-04-3	PCB-133		2.41	2.07	pg/g	0.664	2.00
52704-70-8	PCB-134		6.17	5.71	pg/g	1.33	2.00
PCB-135/151	PCB-151/135	C	53.8	53.5	pg/g	1.33	3.99
38411-22-2	PCB-136		14.6	14.4	pg/g	0.664	2.00
35694-06-5	PCB-137		8.48	8	pg/g	1.33	2.00
PCB-139/140	PCB-139/140	CJ	2.29	1.93	pg/g	1.33	3.99
52712-04-6	PCB-141		36.9	36.6	pg/g	1.33	3.99
41411-61-4	PCB-142	U	.664	.664	pg/g	0.664	2.00
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	2.00
68194-14-9	PCB-144		6.56	6.26	pg/g	0.664	2.00
74472-40-5	PCB-145	U	.664	.664	pg/g	0.664	2.00
51908-16-8	PCB-146		25.9	25.4	pg/g	0.998	2.00
PCB-147/149	PCB-147/149	C	141	140	pg/g	2.00	7.98
74472-41-6	PCB-148	U	.664	.664	pg/g	0.664	2.00
68194-08-1	PCB-150	U	.998	.998	pg/g	0.998	2.00
68194-09-2	PCB-152	U	.664	.664	pg/g	0.664	2.00
PCB-153/168	PCB-153/168	C	176	176	pg/g	2.00	7.98
60145-22-4	PCB-154	U	0.764	.664	pg/g	0.664	2.00
33979-03-2	PCB-155	U	.664	.664	pg/g	0.664	2.00
PCB-156/157	PCB-156/157	C	18.5	18.2	pg/g	1.33	3.99
74472-42-7	PCB-158		17.6	17.3	pg/g	0.664	2.00
39635-35-3	PCB-159	U	.664	.664	pg/g	0.664	2.00
41411-62-5	PCB-160	U	.664	.664	pg/g	0.664	2.00
74472-43-8	PCB-161	U	.998	.998	pg/g	0.998	2.00
39635-34-2	PCB-162	U	.998	.998	pg/g	0.998	2.00
74472-45-0	PCB-164		15.0	14.7	pg/g	0.664	2.00

Comments:

B **The target analyte was detected in the associated blank.**
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J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878005**	**Date Collected:**	**03/07/2014 11:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**8.6**
Client ID:	**CAWA-14-49297**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 06:21**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.97 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.664	.664	pg/g	0.664	2.00
52663-72-6	PCB-167		8.47	8.22	pg/g	0.664	2.00
32774-16-6	PCB-169	U	.998	.998	pg/g	0.998	2.00
35065-30-6	PCB-170		60.1	59.7	pg/g	0.664	2.00
PCB-171/173	PCB-173/171	C	15.8	15.5	pg/g	1.33	3.99
52663-74-8	PCB-172		9.99	9.68	pg/g	0.998	2.00
38411-25-5	PCB-174		58.6	58.3	pg/g	1.33	2.00
40186-70-7	PCB-175	J	1.96	1.7	pg/g	0.998	2.00
52663-65-7	PCB-176		5.15	4.95	pg/g	0.664	2.00
52663-70-4	PCB-177		35.6	35.3	pg/g	0.998	2.00
52663-67-9	PCB-178		11.3	11.1	pg/g	1.33	2.00
52663-64-6	PCB-179		20.3	20.1	pg/g	0.664	2.00
PCB-180/193	PCB-193/180	CU	2	2	pg/g	2.00	3.99
74472-47-2	PCB-181	U	.998	.998	pg/g	0.998	2.00
60145-23-5	PCB-182	U	.664	.664	pg/g	0.664	2.00
PCB-183/185	PCB-183/185	C	27.3	27	pg/g	1.33	3.99
74472-48-3	PCB-184	U	.664	.664	pg/g	0.664	2.00
74472-49-4	PCB-186	U	.664	.664	pg/g	0.664	2.00
52663-68-0	PCB-187		72.1	71.6	pg/g	0.998	2.00
74487-85-7	PCB-188	U	.664	.664	pg/g	0.664	2.00
39635-31-9	PCB-189		2.26	2	pg/g	0.664	2.00
41411-64-7	PCB-190		12.8	12.6	pg/g	0.998	2.00
74472-50-7	PCB-191	J	2.11	1.88	pg/g	0.664	2.00
74472-51-8	PCB-192	U	.664	.664	pg/g	0.664	2.00
35694-08-7	PCB-194		26.8	26.5	pg/g	0.664	2.00
52663-78-2	PCB-195		11.5	11.2	pg/g	0.998	2.00
42740-50-1	PCB-196		12.1	11.8	pg/g	0.664	2.00
PCB-197/200	PCB-197/200	CU	1.33	1.33	pg/g	1.33	3.99
PCB-198/199	PCB-198/199	C	29.0	28.7	pg/g	1.33	3.99
40186-71-8	PCB-201		2.55	2.32	pg/g	0.664	2.00
2136-99-4	PCB-202		4.83	4.54	pg/g	0.998	2.00
52663-76-0	PCB-203		18.2	17.8	pg/g	1.33	2.00

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878005**	**Date Collected:**	**03/07/2014 11:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**8.6**
Client ID:	**CAWA-14-49297**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 06:21**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.97 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.998	.998	pg/g	0.998	2.00
74472-53-0	PCB-205	J	1.47	1.24	pg/g	0.664	2.00
40186-72-9	PCB-206		6.59	6.18	pg/g	0.998	2.00
52663-79-3	PCB-207	J	0.946	.667	pg/g	0.664	2.00
52663-77-1	PCB-208	J	1.53	1.21	pg/g	0.664	2.00
2051-24-3	PCB-209		3.14	2.78	pg/g	0.664	2.00
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs		6.94	4.09	pg/g		
25323-68-6	Total Tri PCBs		31.5	28.7	pg/g		
26914-33-0	Total Tetra PCBs		87.9	82.3	pg/g		
25429-29-2	Total Penta PCBs		401	390	pg/g		
26601-64-9	Total Hexa PCBs		865	856	pg/g		
28655-71-2	Total Hepta PCBs		335	331	pg/g		
55722-26-4	Total Octa PCBs		106	104	pg/g		
53742-07-7	Total Nona PCBs		9.07	8.06	pg/g		
DECACB(Tot)	Total Deca PCB		3.14	2.78	pg/g		
1336-36-3	Total PCB Congeners		1850	1810	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		63.9	200	pg/g	32.0	(15%-150%)
13C-3-MoCB		94.2	200	pg/g	47.2	(15%-150%)
13C-4-DiCB		94.7	200	pg/g	47.4	(25%-150%)
13C-15-DiCB		134	200	pg/g	67.2	(25%-150%)
13C-19-TrCB		113	200	pg/g	56.4	(25%-150%)
13C-37-TrCB		154	200	pg/g	77.1	(25%-150%)
13C-54-TeCB		137	200	pg/g	68.7	(25%-150%)
13C-77-TeCB		169	200	pg/g	84.8	(25%-150%)
13C-81-TeCB		177	200	pg/g	88.9	(25%-150%)
13C-104-PeCB		159	200	pg/g	79.9	(25%-150%)
13C-105-PeCB		151	200	pg/g	75.9	(25%-150%)
13C-114-PeCB		146	200	pg/g	73.3	(25%-150%)
13C-118-PeCB		155	200	pg/g	77.9	(25%-150%)
13C-123-PeCB		160	200	pg/g	80.1	(25%-150%)
13C-126-PeCB		160	200	pg/g	80.0	(25%-150%)
13C-155-HxCB		161	200	pg/g	80.5	(25%-150%)
13C-156-HxCB	C	317	399	pg/g	79.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		149	200	pg/g	74.5	(25%-150%)
13C-169-HxCB		190	200	pg/g	95.2	(25%-150%)
13C-188-HpCB		105	200	pg/g	52.8	(25%-150%)
13C-189-HpCB		133	200	pg/g	66.9	(25%-150%)
13C-202-OcCB		110	200	pg/g	54.9	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878005**	**Date Collected:**	**03/07/2014 11:10**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**8.6**
Client ID:	**CAWA-14-49297**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 06:21**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.97 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		173	200	pg/g	86.7	(25%-150%)
13C-206-NoCB		160	200	pg/g	80.2	(25%-150%)
13C-208-NoCB		149	200	pg/g	74.8	(25%-150%)
13C-209-DeCB		182	200	pg/g	91.0	(25%-150%)
13C-28-TrCB		159	200	pg/g	79.8	(30%-135%)
13C-111-PeCB		171	200	pg/g	85.6	(30%-135%)
13C-178-HpCB		170	200	pg/g	85.3	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878006**	**Date Collected:**	**03/07/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**10.8**
Client ID:	**CAWA-14-49298**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 07:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**11.37 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.986	.986	pg/g	0.986	4.93
2051-61-8	PCB-2	U	.986	.986	pg/g	0.986	1.97
2051-62-9	PCB-3	U	1.01	.986	pg/g	0.986	1.97
13029-08-8	PCB-4	U	.986	.986	pg/g	0.986	3.94
16605-91-7	PCB-5	U	.986	.986	pg/g	0.986	3.94
25569-80-6	PCB-6	U	.986	.986	pg/g	0.986	1.97
33284-50-3	PCB-7	U	.986	.986	pg/g	0.986	3.94
34883-43-7	PCB-8	J	1.86	1.35	pg/g	0.986	19.7
34883-39-1	PCB-9	U	.986	.986	pg/g	0.986	1.97
33146-45-1	PCB-10	U	.986	.986	pg/g	0.986	3.94
2050-67-1	PCB-11	BJ	3.14	2.59	pg/g	1.97	49.3
PCB-12/13	PCB-13/12	CJ	1.83	1.16	pg/g	0.986	7.89
34883-41-5	PCB-14	U	.986	.986	pg/g	0.986	3.94
2050-68-2	PCB-15	J	3.11	2.45	pg/g	0.986	19.7
38444-78-9	PCB-16	U	.986	.986	pg/g	0.986	3.94
37680-66-3	PCB-17	J	1.51	1.18	pg/g	0.657	3.94
PCB-18/30	PCB-18/30	CJ	2.84	2.65	pg/g	1.32	3.94
38444-73-4	PCB-19	U	.657	.657	pg/g	0.657	1.97
PCB-20/28	PCB-20/28	CJ	10.4	10.3	pg/g	1.32	19.7
PCB-21/33	PCB-21/33	CJ	3.89	3.74	pg/g	1.32	7.89
38444-85-8	PCB-22	J	3.43	2.4	pg/g	0.657	3.94
55720-44-0	PCB-23	U	.657	.657	pg/g	0.657	1.97
55702-45-9	PCB-24	U	.657	.657	pg/g	0.657	1.97
55712-37-3	PCB-25	U	.657	.657	pg/g	0.657	1.97
PCB-26/29	PCB-26/29	CU	1.36	1.32	pg/g	1.32	3.94
38444-76-7	PCB-27	U	.657	.657	pg/g	0.657	1.97
16606-02-3	PCB-31	J	8.95	8.8	pg/g	0.657	9.86
38444-77-8	PCB-32	J	1.07	.929	pg/g	0.657	1.97
37680-68-5	PCB-34	U	.657	.657	pg/g	0.657	1.97
37680-69-6	PCB-35	J	1.26	1.01	pg/g	0.657	3.94
38444-87-0	PCB-36	U	.657	.657	pg/g	0.657	3.94
38444-90-5	PCB-37	J	8.58	8.25	pg/g	0.657	19.7

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878006**	**Date Collected:**	**03/07/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**10.8**
Client ID:	**CAWA-14-49298**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 07:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**11.37 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	J	1.68	1.44	pg/g	0.657	1.97
38444-88-1	PCB-39	U	.657	.657	pg/g	0.657	3.94
PCB-40/71	PCB-40/71	C	6.22	5.82	pg/g	1.32	3.94
52663-59-9	PCB-41	U	1.32	1.32	pg/g	1.32	1.97
36559-22-5	PCB-42		4.55	4.14	pg/g	0.986	1.97
70362-46-8	PCB-43	U	1.32	1.32	pg/g	1.32	3.94
PCB-44/47/65	PCB-44/65/47	C	18.1	17.7	pg/g	3.29	5.92
PCB-45/51	PCB-45/51	CJ	2.11	1.71	pg/g	1.32	3.94
41464-47-5	PCB-46	U	0.743	.657	pg/g	0.657	1.97
70362-47-9	PCB-48	J	1.89	1.33	pg/g	0.657	1.97
PCB-49/69	PCB-69/49	C	11.9	11.6	pg/g	1.32	3.94
PCB-50/53	PCB-50/53	CJ	2.33	2.1	pg/g	1.32	3.94
35693-99-3	PCB-52		25.7	25.3	pg/g	1.32	1.97
15968-05-5	PCB-54	U	.657	.657	pg/g	0.657	1.97
74338-24-2	PCB-55	U	.986	.986	pg/g	0.986	1.97
41464-43-1	PCB-56		13.7	13.2	pg/g	0.657	3.94
70424-67-8	PCB-57	U	.986	.986	pg/g	0.986	1.97
41464-49-7	PCB-58	U	.986	.986	pg/g	0.986	1.97
PCB-59/62/75	PCB-59/62/75	CU	1.97	1.97	pg/g	1.97	5.92
33025-41-1	PCB-60		5.88	5.42	pg/g	0.657	3.94
PCB-61-76	PCB-61/76/70/74	C	50.8	50.6	pg/g	2.62	7.89
74472-34-7	PCB-63	U	.657	.657	pg/g	0.657	4.93
52663-58-8	PCB-64		6.71	6.35	pg/g	0.986	1.97
32598-10-0	PCB-66		28.5	28.3	pg/g	0.986	4.93
73575-53-8	PCB-67	U	.986	.986	pg/g	0.986	1.97
73575-52-7	PCB-68	U	.657	.657	pg/g	0.657	1.97
41464-42-0	PCB-72	U	.657	.657	pg/g	0.657	3.94
74338-23-1	PCB-73	U	.986	.986	pg/g	0.986	1.97
32598-13-3	PCB-77		6.55	6.32	pg/g	0.657	1.97
70362-49-1	PCB-78	U	.657	.657	pg/g	0.657	1.97
41464-48-6	PCB-79	J	1.02	.852	pg/g	0.657	3.94
33284-52-5	PCB-80	U	.657	.657	pg/g	0.657	3.94

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878006**	**Date Collected:**	**03/07/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**10.8**
Client ID:	**CAWA-14-49298**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 07:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**11.37 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.657	.657	pg/g	0.657	1.97
52663-62-4	PCB-82		9.68	9.32	pg/g	0.986	4.93
60145-20-2	PCB-83		5.22	4.84	pg/g	0.986	1.97
52663-60-2	PCB-84		26.1	25.7	pg/g	0.986	1.97
PCB-85-117	PCB-117/116/85	C	15.8	15.5	pg/g	1.97	5.92
PCB-86-125	PCB-86/87/97/109/119/125	C	52.3	52	pg/g	3.94	11.8
PCB-88/91	PCB-88/91	C	14.4	14.1	pg/g	1.32	3.94
73575-57-2	PCB-89	U	0.745	.657	pg/g	0.657	1.97
PCB-90-113	PCB-113/90/101	C	99.9	99.6	pg/g	1.97	5.92
52663-61-3	PCB-92		18.9	18.6	pg/g	0.986	1.97
PCB-93/100	PCB-93/100	CU	1.97	1.97	pg/g	1.97	3.94
73575-55-0	PCB-94	U	.657	.657	pg/g	0.657	1.97
38379-99-6	PCB-95		97.7	97.4	pg/g	1.32	3.94
73575-54-9	PCB-96	U	.657	.657	pg/g	0.657	1.97
PCB-98/102	PCB-102/98	CJ	1.88	1.53	pg/g	1.32	3.94
38380-01-7	PCB-99		38.5	37.9	pg/g	1.32	1.97
60145-21-3	PCB-103	U	.657	.657	pg/g	0.657	4.93
56558-16-8	PCB-104	U	.657	.657	pg/g	0.657	1.97
32598-14-4	PCB-105		29.0	28.4	pg/g	0.986	1.97
70424-69-0	PCB-106	U	.986	.986	pg/g	0.986	1.97
70424-68-9	PCB-107		4.26	3.98	pg/g	0.657	3.94
PCB-108/124	PCB-108/124	CJ	3.67	3.34	pg/g	1.32	3.94
PCB-110/115	PCB-110/115	C	150	148	pg/g	2.62	3.94
39635-32-0	PCB-111	U	.657	.657	pg/g	0.657	1.97
74472-36-9	PCB-112	U	1.32	1.32	pg/g	1.32	1.97
74472-37-0	PCB-114	J	1.05	.698	pg/g	0.657	1.97
31508-00-6	PCB-118		63.6	61.7	pg/g	1.32	3.94
68194-12-7	PCB-120	U	.657	.657	pg/g	0.657	1.97
56558-18-0	PCB-121	U	.657	.657	pg/g	0.657	1.97
76842-07-4	PCB-122	U	1.19	.657	pg/g	0.657	6.82
65510-44-3	PCB-123	J	1.44	1.12	pg/g	0.657	1.97
57465-28-8	PCB-126	U	0.730	.657	pg/g	0.657	1.97

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878006**	**Date Collected:**	**03/07/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**10.8**
Client ID:	**CAWA-14-49298**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 07:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**11.37 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.657	.657	pg/g	0.657	1.97
PCB-128/166	PCB-128/166	C	34.5	34.2	pg/g	1.32	3.94
PCB-129-163	PCB-138/163/129	C	303	303	pg/g	2.62	5.92
52663-66-8	PCB-130		14.5	14.1	pg/g	0.986	1.97
61798-70-7	PCB-131		2.88	2.49	pg/g	0.657	1.97
38380-05-1	PCB-132		89.1	88	pg/g	0.986	1.97
35694-04-3	PCB-133		3.09	2.75	pg/g	0.657	1.97
52704-70-8	PCB-134		9.27	8.81	pg/g	1.32	1.97
PCB-135/151	PCB-151/135	C	87.9	87.5	pg/g	1.32	3.94
38411-22-2	PCB-136		25.3	25.1	pg/g	0.657	1.97
35694-06-5	PCB-137		9.32	8.84	pg/g	1.32	1.97
PCB-139/140	PCB-139/140	CJ	2.91	2.54	pg/g	1.32	3.94
52712-04-6	PCB-141		53.6	53.3	pg/g	1.32	3.94
41411-61-4	PCB-142	U	.657	.657	pg/g	0.657	1.97
68194-15-0	PCB-143	U	1.32	1.32	pg/g	1.32	1.97
68194-14-9	PCB-144		10.3	9.95	pg/g	0.657	1.97
74472-40-5	PCB-145	U	.657	.657	pg/g	0.657	1.97
51908-16-8	PCB-146		35.4	34.9	pg/g	0.986	1.97
PCB-147/149	PCB-147/149	C	220	219	pg/g	1.97	7.89
74472-41-6	PCB-148	U	.657	.657	pg/g	0.657	1.97
68194-08-1	PCB-150	U	.986	.986	pg/g	0.986	1.97
68194-09-2	PCB-152	U	.657	.657	pg/g	0.657	1.97
PCB-153/168	PCB-153/168	C	242	242	pg/g	1.97	7.89
60145-22-4	PCB-154	J	1.13	.852	pg/g	0.657	1.97
33979-03-2	PCB-155	U	.657	.657	pg/g	0.657	1.97
PCB-156/157	PCB-156/157	C	20.4	20.1	pg/g	1.32	3.94
74472-42-7	PCB-158		22.3	22.1	pg/g	0.657	1.97
39635-35-3	PCB-159	U	.657	.657	pg/g	0.657	1.97
41411-62-5	PCB-160	U	.657	.657	pg/g	0.657	1.97
74472-43-8	PCB-161	U	.986	.986	pg/g	0.986	1.97
39635-34-2	PCB-162	U	.986	.986	pg/g	0.986	1.97
74472-45-0	PCB-164		20.9	20.7	pg/g	0.657	1.97

Comments:

B **The target analyte was detected in the associated blank.**
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J **Value is estimated**
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878006**	**Date Collected:**	**03/07/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**10.8**
Client ID:	**CAWA-14-49298**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 07:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**11.37 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.657	.657	pg/g	0.657	1.97
52663-72-6	PCB-167		10.9	10.7	pg/g	0.657	1.97
32774-16-6	PCB-169	U	.986	.986	pg/g	0.986	1.97
35065-30-6	PCB-170		100	100	pg/g	0.657	1.97
PCB-171/173	PCB-173/171	C	24.9	24.6	pg/g	1.32	3.94
52663-74-8	PCB-172		16.3	16	pg/g	0.986	1.97
38411-25-5	PCB-174		99.3	99	pg/g	1.32	1.97
40186-70-7	PCB-175		2.93	2.67	pg/g	0.986	1.97
52663-65-7	PCB-176		8.30	8.1	pg/g	0.657	1.97
52663-70-4	PCB-177		56.3	56	pg/g	0.986	1.97
52663-67-9	PCB-178		17.0	16.8	pg/g	1.32	1.97
52663-64-6	PCB-179		32.2	32	pg/g	0.657	1.97
PCB-180/193	PCB-193/180	CU	1.97	1.97	pg/g	1.97	3.94
74472-47-2	PCB-181	U	.986	.986	pg/g	0.986	1.97
60145-23-5	PCB-182	U	.657	.657	pg/g	0.657	1.97
PCB-183/185	PCB-183/185	C	47.7	47.4	pg/g	1.32	3.94
74472-48-3	PCB-184	U	.657	.657	pg/g	0.657	1.97
74472-49-4	PCB-186	U	.657	.657	pg/g	0.657	1.97
52663-68-0	PCB-187		116	115	pg/g	0.986	1.97
74487-85-7	PCB-188	U	.657	.657	pg/g	0.657	1.97
39635-31-9	PCB-189		3.34	3.08	pg/g	0.657	1.97
41411-64-7	PCB-190		20.6	20.4	pg/g	0.986	1.97
74472-50-7	PCB-191		3.32	3.09	pg/g	0.657	1.97
74472-51-8	PCB-192	U	.657	.657	pg/g	0.657	1.97
35694-08-7	PCB-194		43.0	42.6	pg/g	0.657	1.97
52663-78-2	PCB-195		18.0	17.7	pg/g	0.986	1.97
42740-50-1	PCB-196		19.1	18.8	pg/g	0.657	1.97
PCB-197/200	PCB-197/200	CU	1.32	1.32	pg/g	1.32	3.94
PCB-198/199	PCB-198/199	C	45.1	44.7	pg/g	1.32	3.94
40186-71-8	PCB-201		3.79	3.56	pg/g	0.657	1.97
2136-99-4	PCB-202		7.07	6.78	pg/g	0.986	1.97
52663-76-0	PCB-203		27.3	26.9	pg/g	1.32	1.97

Comments:

B **The target analyte was detected in the associated blank.**
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J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878006**	**Date Collected:**	**03/07/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**10.8**
Client ID:	**CAWA-14-49298**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 07:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**11.37 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.986	.986	pg/g	0.986	1.97
74472-53-0	PCB-205		2.25	2.02	pg/g	0.657	1.97
40186-72-9	PCB-206		10.7	10.3	pg/g	0.986	1.97
52663-79-3	PCB-207	J	1.26	.98	pg/g	0.657	1.97
52663-77-1	PCB-208		2.60	2.28	pg/g	0.657	1.97
2051-24-3	PCB-209		6.16	5.81	pg/g	0.657	1.97
27323-18-8	Total Mono PCBs	U	1.01	0	pg/g		
25512-42-9	Total Di PCBs		6.80	4.96	pg/g		
25323-68-6	Total Tri PCBs		45.0	40.7	pg/g		
26914-33-0	Total Tetra PCBs		187	181	pg/g		
25429-29-2	Total Penta PCBs		636	623	pg/g		
26601-64-9	Total Hexa PCBs		1220	1210	pg/g		
28655-71-2	Total Hepta PCBs		549	545	pg/g		
55722-26-4	Total Octa PCBs		165	163	pg/g		
53742-07-7	Total Nona PCBs		14.6	13.6	pg/g		
DECACB(Tot)	Total Deca PCB		6.16	5.81	pg/g		
1336-36-3	Total PCB Congeners		2830	2790	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		72.9	197	pg/g	37.0	(15%-150%)
13C-3-MoCB		97.1	197	pg/g	49.3	(15%-150%)
13C-4-DiCB		102	197	pg/g	51.7	(25%-150%)
13C-15-DiCB		137	197	pg/g	69.5	(25%-150%)
13C-19-TrCB		121	197	pg/g	61.2	(25%-150%)
13C-37-TrCB		149	197	pg/g	75.6	(25%-150%)
13C-54-TeCB		151	197	pg/g	76.6	(25%-150%)
13C-77-TeCB		175	197	pg/g	88.6	(25%-150%)
13C-81-TeCB		174	197	pg/g	88.1	(25%-150%)
13C-104-PeCB		162	197	pg/g	82.3	(25%-150%)
13C-105-PeCB		153	197	pg/g	77.8	(25%-150%)
13C-114-PeCB		147	197	pg/g	74.5	(25%-150%)
13C-118-PeCB		156	197	pg/g	79.2	(25%-150%)
13C-123-PeCB		163	197	pg/g	82.6	(25%-150%)
13C-126-PeCB		168	197	pg/g	85.2	(25%-150%)
13C-155-HxCB		152	197	pg/g	77.0	(25%-150%)
13C-156-HxCB	C	320	394	pg/g	81.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		149	197	pg/g	75.5	(25%-150%)
13C-169-HxCB		189	197	pg/g	95.7	(25%-150%)
13C-188-HpCB		94.9	197	pg/g	48.1	(25%-150%)
13C-189-HpCB		130	197	pg/g	65.8	(25%-150%)
13C-202-OcCB		106	197	pg/g	53.8	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878006**	**Date Collected:**	**03/07/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**10.8**
Client ID:	**CAWA-14-49298**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 07:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**11.37 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		168	197	pg/g	85.0	(25%-150%)
13C-206-NoCB		155	197	pg/g	78.6	(25%-150%)
13C-208-NoCB		142	197	pg/g	72.1	(25%-150%)
13C-209-DeCB		177	197	pg/g	89.8	(25%-150%)
13C-28-TrCB		158	197	pg/g	80.3	(30%-135%)
13C-111-PeCB		171	197	pg/g	87.0	(30%-135%)
13C-178-HpCB		166	197	pg/g	84.3	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878007**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**35.1**
Client ID:	**CAWA-14-49271**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 08:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**15.61 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		5.65	5.42	pg/g	0.986	4.93
2051-61-8	PCB-2		3.23	2.33	pg/g	0.986	1.97
2051-62-9	PCB-3		4.55	4.12	pg/g	0.986	1.97
13029-08-8	PCB-4		5.05	4.18	pg/g	0.986	3.95
16605-91-7	PCB-5	U	.986	.986	pg/g	0.986	3.95
25569-80-6	PCB-6	J	2.05	1.51	pg/g	0.986	1.97
33284-50-3	PCB-7	U	.986	.986	pg/g	0.986	3.95
34883-43-7	PCB-8	J	8.63	8.12	pg/g	0.986	19.7
34883-39-1	PCB-9	U	.986	.986	pg/g	0.986	1.97
33146-45-1	PCB-10	U	.986	.986	pg/g	0.986	3.95
2050-67-1	PCB-11	BJ	6.77	6.22	pg/g	1.97	49.3
PCB-12/13	PCB-13/12	CJ	6.44	5.77	pg/g	0.986	7.89
34883-41-5	PCB-14	U	.986	.986	pg/g	0.986	3.95
2050-68-2	PCB-15	J	10.0	9.35	pg/g	0.986	19.7
38444-78-9	PCB-16		8.28	8.01	pg/g	0.986	3.95
37680-66-3	PCB-17		10.9	10.6	pg/g	0.657	3.95
PCB-18/30	PCB-18/30	C	23.4	23.2	pg/g	1.32	3.95
38444-73-4	PCB-19		3.66	3.44	pg/g	0.657	1.97
PCB-20/28	PCB-20/28	C	58.3	58.2	pg/g	1.32	19.7
PCB-21/33	PCB-21/33	C	20.3	20.1	pg/g	1.32	7.89
38444-85-8	PCB-22		18.7	17.7	pg/g	0.657	3.95
55720-44-0	PCB-23	U	.657	.657	pg/g	0.657	1.97
55702-45-9	PCB-24	U	.657	.657	pg/g	0.657	1.97
55712-37-3	PCB-25		2.48	2.31	pg/g	0.657	1.97
PCB-26/29	PCB-26/29	C	6.10	5.95	pg/g	1.32	3.95
38444-76-7	PCB-27	J	1.90	1.74	pg/g	0.657	1.97
16606-02-3	PCB-31		53.9	53.8	pg/g	0.657	9.86
38444-77-8	PCB-32		8.21	8.06	pg/g	0.657	1.97
37680-68-5	PCB-34	U	.657	.657	pg/g	0.657	1.97
37680-69-6	PCB-35	J	1.89	1.64	pg/g	0.657	3.95
38444-87-0	PCB-36	U	.657	.657	pg/g	0.657	3.95
38444-90-5	PCB-37		24.4	24.1	pg/g	0.657	19.7

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878007**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**35.1**
Client ID:	**CAWA-14-49271**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 08:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**15.61 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38		16.5	16.2	pg/g	0.657	1.97
38444-88-1	PCB-39	U	.657	.657	pg/g	0.657	3.95
PCB-40/71	PCB-40/71	C	51.6	51.2	pg/g	1.32	3.95
52663-59-9	PCB-41		5.15	4.71	pg/g	1.32	1.97
36559-22-5	PCB-42		32.3	31.9	pg/g	0.986	1.97
70362-46-8	PCB-43	J	4.14	3.65	pg/g	1.32	3.95
PCB-44/47/65	PCB-44/65/47	CU	3.29	3.29	pg/g	3.29	5.92
PCB-45/51	PCB-45/51	CU	1.32	1.32	pg/g	1.32	3.95
41464-47-5	PCB-46		5.26	4.99	pg/g	0.657	1.97
70362-47-9	PCB-48		16.5	16	pg/g	0.657	1.97
PCB-49/69	PCB-69/49	C	115	115	pg/g	1.32	3.95
PCB-50/53	PCB-50/53	C	16.1	15.8	pg/g	1.32	3.95
35693-99-3	PCB-52		347	346	pg/g	1.32	1.97
15968-05-5	PCB-54	U	.657	.657	pg/g	0.657	1.97
74338-24-2	PCB-55		3.40	3.13	pg/g	0.986	1.97
41464-43-1	PCB-56		88.7	88.2	pg/g	0.657	3.95
70424-67-8	PCB-57	U	.986	.986	pg/g	0.986	1.97
41464-49-7	PCB-58	U	.986	.986	pg/g	0.986	1.97
PCB-59/62/75	PCB-59/62/75	C	6.21	5.93	pg/g	1.97	5.92
33025-41-1	PCB-60		36.0	35.5	pg/g	0.657	3.95
PCB-61-76	PCB-61/76/70/74	C	401	400	pg/g	2.62	7.89
74472-34-7	PCB-63	J	4.49	4.31	pg/g	0.657	4.93
52663-58-8	PCB-64		63.6	63.3	pg/g	0.986	1.97
32598-10-0	PCB-66		164	164	pg/g	0.986	4.93
73575-53-8	PCB-67		2.39	2.21	pg/g	0.986	1.97
73575-52-7	PCB-68	U	.657	.657	pg/g	0.657	1.97
41464-42-0	PCB-72	J	0.988	.803	pg/g	0.657	3.95
74338-23-1	PCB-73	U	.986	.986	pg/g	0.986	1.97
32598-13-3	PCB-77		24.0	23.7	pg/g	0.657	1.97
70362-49-1	PCB-78	U	.657	.657	pg/g	0.657	1.97
41464-48-6	PCB-79		7.01	6.83	pg/g	0.657	3.95
33284-52-5	PCB-80	U	.657	.657	pg/g	0.657	3.95

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878007**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**35.1**
Client ID:	**CAWA-14-49271**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 08:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**15.61 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	J	0.957	.737	pg/g	0.657	1.97
52663-62-4	PCB-82		102	102	pg/g	0.986	4.93
60145-20-2	PCB-83		52.2	51.8	pg/g	0.986	1.97
52663-60-2	PCB-84		256	256	pg/g	0.986	1.97
PCB-85-117	PCB-117/116/85	C	171	171	pg/g	1.97	5.92
PCB-86-125	PCB-86/87/97/109/119/125	C	646	645	pg/g	3.95	11.8
PCB-88/91	PCB-88/91	C	138	138	pg/g	1.32	3.95
73575-57-2	PCB-89		6.00	5.64	pg/g	0.657	1.97
PCB-90-113	PCB-113/90/101	C	1130	1130	pg/g	1.97	5.92
52663-61-3	PCB-92		213	213	pg/g	0.986	1.97
PCB-93/100	PCB-93/100	CU	1.97	1.97	pg/g	1.97	3.95
73575-55-0	PCB-94		2.95	2.47	pg/g	0.657	1.97
38379-99-6	PCB-95		936	935	pg/g	1.32	3.95
73575-54-9	PCB-96		3.45	3.27	pg/g	0.657	1.97
PCB-98/102	PCB-102/98	C	17.1	16.8	pg/g	1.32	3.95
38380-01-7	PCB-99		427	427	pg/g	1.32	1.97
60145-21-3	PCB-103	J	4.26	3.95	pg/g	0.657	4.93
56558-16-8	PCB-104	U	.657	.657	pg/g	0.657	1.97
32598-14-4	PCB-105		263	262	pg/g	0.986	1.97
70424-69-0	PCB-106	U	.986	.986	pg/g	0.986	1.97
70424-68-9	PCB-107		45.9	45.6	pg/g	0.657	3.95
PCB-108/124	PCB-108/124	C	39.5	39.2	pg/g	1.32	3.95
PCB-110/115	PCB-110/115	C	1510	1510	pg/g	2.62	3.95
39635-32-0	PCB-111	U	.657	.657	pg/g	0.657	1.97
74472-36-9	PCB-112	U	1.32	1.32	pg/g	1.32	1.97
74472-37-0	PCB-114		9.88	9.53	pg/g	0.657	1.97
31508-00-6	PCB-118		643	641	pg/g	1.32	3.95
68194-12-7	PCB-120	J	1.58	1.35	pg/g	0.657	1.97
56558-18-0	PCB-121	U	.657	.657	pg/g	0.657	1.97
76842-07-4	PCB-122	J	10.4	3.47	pg/g	0.657	6.83
65510-44-3	PCB-123		14.2	13.9	pg/g	0.657	1.97
57465-28-8	PCB-126		5.53	5.15	pg/g	0.657	1.97

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878007**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**35.1**
Client ID:	**CAWA-14-49271**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 08:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**15.61 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.657	.657	pg/g	0.657	1.97
PCB-128/166	PCB-128/166	C	328	328	pg/g	1.32	3.95
PCB-129-163	PCB-138/163/129	C	2710	2710	pg/g	2.62	5.92
52663-66-8	PCB-130		134	133	pg/g	0.986	1.97
61798-70-7	PCB-131		25.3	24.9	pg/g	0.657	1.97
38380-05-1	PCB-132		815	814	pg/g	0.986	1.97
35694-04-3	PCB-133		26.7	26.4	pg/g	0.657	1.97
52704-70-8	PCB-134		112	111	pg/g	1.32	1.97
PCB-135/151	PCB-151/135	C	778	778	pg/g	1.32	3.95
38411-22-2	PCB-136		232	231	pg/g	0.657	1.97
35694-06-5	PCB-137		94.9	94.4	pg/g	1.32	1.97
PCB-139/140	PCB-139/140	C	26.5	26.1	pg/g	1.32	3.95
52712-04-6	PCB-141		492	492	pg/g	1.32	3.95
41411-61-4	PCB-142	U	.657	.657	pg/g	0.657	1.97
68194-15-0	PCB-143	U	1.32	1.32	pg/g	1.32	1.97
68194-14-9	PCB-144		91.6	91.3	pg/g	0.657	1.97
74472-40-5	PCB-145	U	.657	.657	pg/g	0.657	1.97
51908-16-8	PCB-146		325	324	pg/g	0.986	1.97
PCB-147/149	PCB-147/149	C	2000	2000	pg/g	1.97	7.89
74472-41-6	PCB-148	U	0.890	.657	pg/g	0.657	1.97
68194-08-1	PCB-150	U	1.29	.986	pg/g	0.986	1.97
68194-09-2	PCB-152	J	0.911	.686	pg/g	0.657	1.97
PCB-153/168	PCB-153/168	C	2160	2160	pg/g	1.97	7.89
60145-22-4	PCB-154		9.36	9.08	pg/g	0.657	1.97
33979-03-2	PCB-155		2.30	2.09	pg/g	0.657	1.97
PCB-156/157	PCB-156/157	C	219	218	pg/g	1.32	3.95
74472-42-7	PCB-158		217	217	pg/g	0.657	1.97
39635-35-3	PCB-159	U	.657	.657	pg/g	0.657	1.97
41411-62-5	PCB-160	U	.657	.657	pg/g	0.657	1.97
74472-43-8	PCB-161	U	.986	.986	pg/g	0.986	1.97
39635-34-2	PCB-162		5.87	5.58	pg/g	0.986	1.97
74472-45-0	PCB-164		184	184	pg/g	0.657	1.97

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878007**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**35.1**
Client ID:	**CAWA-14-49271**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 08:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**15.61 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.657	.657	pg/g	0.657	1.97
52663-72-6	PCB-167		105	105	pg/g	0.657	1.97
32774-16-6	PCB-169		3.25	2.99	pg/g	0.986	1.97
35065-30-6	PCB-170		807	807	pg/g	0.657	1.97
PCB-171/173	PCB-173/171	C	210	209	pg/g	1.32	3.95
52663-74-8	PCB-172		133	132	pg/g	0.986	1.97
38411-25-5	PCB-174		800	800	pg/g	1.32	1.97
40186-70-7	PCB-175		23.4	23.1	pg/g	0.986	1.97
52663-65-7	PCB-176		68.1	67.9	pg/g	0.657	1.97
52663-70-4	PCB-177		470	469	pg/g	0.986	1.97
52663-67-9	PCB-178		149	149	pg/g	1.32	1.97
52663-64-6	PCB-179		283	283	pg/g	0.657	1.97
PCB-180/193	PCB-193/180	CU	1.97	1.97	pg/g	1.97	3.95
74472-47-2	PCB-181		4.88	4.5	pg/g	0.986	1.97
60145-23-5	PCB-182	J	1.53	1.26	pg/g	0.657	1.97
PCB-183/185	PCB-183/185	C	442	442	pg/g	1.32	3.95
74472-48-3	PCB-184	U	.657	.657	pg/g	0.657	1.97
74472-49-4	PCB-186	U	.657	.657	pg/g	0.657	1.97
52663-68-0	PCB-187		943	943	pg/g	0.986	1.97
74487-85-7	PCB-188	U	.657	.657	pg/g	0.657	1.97
39635-31-9	PCB-189		26.7	26.5	pg/g	0.657	1.97
41411-64-7	PCB-190		170	170	pg/g	0.986	1.97
74472-50-7	PCB-191		25.7	25.4	pg/g	0.657	1.97
74472-51-8	PCB-192	U	.657	.657	pg/g	0.657	1.97
35694-08-7	PCB-194		319	318	pg/g	0.657	1.97
52663-78-2	PCB-195		134	133	pg/g	0.986	1.97
42740-50-1	PCB-196		142	142	pg/g	0.657	1.97
PCB-197/200	PCB-197/200	CU	1.32	1.32	pg/g	1.32	3.95
PCB-198/199	PCB-198/199	C	347	347	pg/g	1.32	3.95
40186-71-8	PCB-201		28.6	28.4	pg/g	0.657	1.97
2136-99-4	PCB-202		55.0	54.8	pg/g	0.986	1.97
52663-76-0	PCB-203		206	206	pg/g	1.32	1.97

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878007**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**35.1**
Client ID:	**CAWA-14-49271**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 08:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**15.61 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.986	.986	pg/g	0.986	1.97
74472-53-0	PCB-205		15.2	15	pg/g	0.657	1.97
40186-72-9	PCB-206		65.1	64.7	pg/g	0.986	1.97
52663-79-3	PCB-207		7.71	7.44	pg/g	0.657	1.97
52663-77-1	PCB-208		14.5	14.2	pg/g	0.657	1.97
2051-24-3	PCB-209		27.5	27.2	pg/g	0.657	1.97
27323-18-8	Total Mono PCBs		13.4	11.9	pg/g		
25512-42-9	Total Di PCBs		32.2	28.9	pg/g		
25323-68-6	Total Tri PCBs		259	255	pg/g		
26914-33-0	Total Tetra PCBs		1400	1390	pg/g		
25429-29-2	Total Penta PCBs		6650	6630	pg/g		
26601-64-9	Total Hexa PCBs		11100	11100	pg/g		
28655-71-2	Total Hepta PCBs		4560	4550	pg/g		
55722-26-4	Total Octa PCBs		1250	1240	pg/g		
53742-07-7	Total Nona PCBs		87.4	86.4	pg/g		
DECACB(Tot)	Total Deca PCB		27.5	27.2	pg/g		
1336-36-3	Total PCB Congeners		25400	25300	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		67.9	197	pg/g	34.4	(15%-150%)
13C-3-MoCB		97.2	197	pg/g	49.3	(15%-150%)
13C-4-DiCB		86.3	197	pg/g	43.8	(25%-150%)
13C-15-DiCB		131	197	pg/g	66.4	(25%-150%)
13C-19-TrCB		95.9	197	pg/g	48.6	(25%-150%)
13C-37-TrCB		143	197	pg/g	72.6	(25%-150%)
13C-54-TeCB		113	197	pg/g	57.1	(25%-150%)
13C-77-TeCB		176	197	pg/g	89.1	(25%-150%)
13C-81-TeCB		173	197	pg/g	87.8	(25%-150%)
13C-104-PeCB		124	197	pg/g	62.9	(25%-150%)
13C-105-PeCB		146	197	pg/g	73.9	(25%-150%)
13C-114-PeCB		137	197	pg/g	69.7	(25%-150%)
13C-118-PeCB		148	197	pg/g	74.9	(25%-150%)
13C-123-PeCB		152	197	pg/g	76.8	(25%-150%)
13C-126-PeCB		164	197	pg/g	83.2	(25%-150%)
13C-155-HxCB		124	197	pg/g	62.6	(25%-150%)
13C-156-HxCB	C	305	395	pg/g	77.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		140	197	pg/g	70.8	(25%-150%)
13C-169-HxCB		187	197	pg/g	95.0	(25%-150%)
13C-188-HpCB		89.7	197	pg/g	45.5	(25%-150%)
13C-189-HpCB		128	197	pg/g	65.1	(25%-150%)
13C-202-OcCB		99.7	197	pg/g	50.5	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5878007**	**Date Collected:**	**03/07/2014 11:25**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**35.1**
Client ID:	**CAWA-14-49271**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 08:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**15.61 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		167	197	pg/g	84.8	(25%-150%)
13C-206-NoCB		158	197	pg/g	80.1	(25%-150%)
13C-208-NoCB		142	197	pg/g	72.2	(25%-150%)
13C-209-DeCB		173	197	pg/g	87.7	(25%-150%)
13C-28-TrCB		177	197	pg/g	89.8	(30%-135%)
13C-111-PeCB		193	197	pg/g	98.0	(30%-135%)
13C-178-HpCB		189	197	pg/g	95.6	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

Quality Control Summary

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-2962

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010062	LCS for batch 25525	13C-1-MoCB		38.3	(15%-140%)
		13C-3-MoCB		43.0	(15%-140%)
		13C-4-DiCB		47.3	(30%-140%)
		13C-15-DiCB		54.6	(30%-140%)
		13C-19-TrCB		52.8	(30%-140%)
		13C-37-TrCB		66.0	(30%-140%)
		13C-54-TeCB		66.8	(30%-140%)
		13C-77-TeCB		71.3	(30%-140%)
		13C-81-TeCB		71.9	(30%-140%)
		13C-104-PeCB		73.3	(30%-140%)
		13C-105-PeCB		64.4	(30%-140%)
		13C-114-PeCB		61.8	(30%-140%)
		13C-118-PeCB		66.0	(30%-140%)
		13C-123-PeCB		68.4	(30%-140%)
		13C-126-PeCB		66.2	(30%-140%)
		13C-155-HxCB		72.0	(30%-140%)
		13C-156-HxCB	C	61.7	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		58.8	(30%-140%)
		13C-169-HxCB		71.0	(30%-140%)
		13C-188-HpCB		53.9	(30%-140%)
		13C-189-HpCB		57.2	(30%-140%)
		13C-202-OcCB		53.7	(30%-140%)
		13C-205-OcCB		73.5	(30%-140%)
		13C-206-NoCB		70.7	(30%-140%)
		13C-208-NoCB		66.9	(30%-140%)
		13C-209-DeCB		81.1	(30%-140%)
		13C-28-TrCB		67.9	(40%-125%)
		13C-111-PeCB		72.9	(40%-125%)
		13C-178-HpCB		74.5	(40%-125%)
12010063	LCSD for batch 25525	13C-1-MoCB		46.9	(15%-140%)
		13C-3-MoCB		53.7	(15%-140%)
		13C-4-DiCB		61.7	(30%-140%)
		13C-15-DiCB		68.8	(30%-140%)
		13C-19-TrCB		69.9	(30%-140%)
		13C-37-TrCB		78.2	(30%-140%)
		13C-54-TeCB		87.3	(30%-140%)
		13C-77-TeCB		81.4	(30%-140%)
		13C-81-TeCB		81.9	(30%-140%)
		13C-104-PeCB		93.2	(30%-140%)
		13C-105-PeCB		76.2	(30%-140%)
		13C-114-PeCB		73.4	(30%-140%)
		13C-118-PeCB		78.5	(30%-140%)
		13C-123-PeCB		81.6	(30%-140%)
		13C-126-PeCB		80.0	(30%-140%)
		13C-155-HxCB		88.9	(30%-140%)
		13C-156-HxCB	C	77.2	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		73.9	(30%-140%)
		13C-169-HxCB		90.0	(30%-140%)
		13C-188-HpCB		63.6	(30%-140%)
		13C-189-HpCB		71.5	(30%-140%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-2962

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010063	LCSD for batch 25525	13C-202-OcCB		66.3	(30%-140%)
		13C-205-OcCB		89.2	(30%-140%)
		13C-206-NoCB		85.1	(30%-140%)
		13C-208-NoCB		81.0	(30%-140%)
		13C-209-DeCB		99.3	(30%-140%)
		13C-28-TrCB		84.9	(40%-125%)
		13C-111-PeCB		87.1	(40%-125%)
		13C-178-HpCB		92.3	(40%-125%)
12010061	MB for batch 25525	13C-1-MoCB		53.9	(15%-150%)
		13C-3-MoCB		57.8	(15%-150%)
		13C-4-DiCB		67.3	(25%-150%)
		13C-15-DiCB		68.2	(25%-150%)
		13C-19-TrCB		70.1	(25%-150%)
		13C-37-TrCB		75.3	(25%-150%)
		13C-54-TeCB		83.5	(25%-150%)
		13C-77-TeCB		79.1	(25%-150%)
		13C-81-TeCB		79.8	(25%-150%)
		13C-104-PeCB		85.4	(25%-150%)
		13C-105-PeCB		70.4	(25%-150%)
		13C-114-PeCB		68.4	(25%-150%)
		13C-118-PeCB		73.3	(25%-150%)
		13C-123-PeCB		75.0	(25%-150%)
		13C-126-PeCB		74.0	(25%-150%)
		13C-155-HxCB		83.9	(25%-150%)
		13C-156-HxCB	C	72.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		68.9	(25%-150%)
		13C-169-HxCB		84.7	(25%-150%)
		13C-188-HpCB		58.7	(25%-150%)
		13C-189-HpCB		63.4	(25%-150%)
		13C-202-OcCB		60.0	(25%-150%)
		13C-205-OcCB		82.9	(25%-150%)
		13C-206-NoCB		79.9	(25%-150%)
		13C-208-NoCB		74.4	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		80.6	(30%-135%)
		13C-111-PeCB		82.9	(30%-135%)
		13C-178-HpCB		86.7	(30%-135%)
5878001	CACV-14-49260	13C-1-MoCB		36.1	(15%-150%)
		13C-3-MoCB		51.3	(15%-150%)
		13C-4-DiCB		52.3	(25%-150%)
		13C-15-DiCB		71.7	(25%-150%)
		13C-19-TrCB		62.5	(25%-150%)
		13C-37-TrCB		82.0	(25%-150%)
		13C-54-TeCB		82.7	(25%-150%)
		13C-77-TeCB		90.3	(25%-150%)
		13C-81-TeCB		90.4	(25%-150%)
		13C-104-PeCB		88.9	(25%-150%)
		13C-105-PeCB		80.1	(25%-150%)
		13C-114-PeCB		76.8	(25%-150%)
		13C-118-PeCB		81.4	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-2962

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5878001	CACV-14-49260	13C-123-PeCB		84.7	(25%-150%)
		13C-126-PeCB		85.3	(25%-150%)
		13C-155-HxCB		88.2	(25%-150%)
		13C-156-HxCB	C	80.8	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		76.0	(25%-150%)
		13C-169-HxCB		91.9	(25%-150%)
		13C-188-HpCB		62.4	(25%-150%)
		13C-189-HpCB		70.8	(25%-150%)
		13C-202-OcCB		66.3	(25%-150%)
		13C-205-OcCB		91.5	(25%-150%)
		13C-206-NoCB		88.3	(25%-150%)
		13C-208-NoCB		81.8	(25%-150%)
		13C-209-DeCB		102	(25%-150%)
		13C-28-TrCB		85.5	(30%-135%)
		13C-111-PeCB		90.4	(30%-135%)
		13C-178-HpCB		93.9	(30%-135%)
12010064	CACV-14-49260(5878001MS)	13C-1-MoCB		35.9	(15%-150%)
		13C-3-MoCB		47.0	(15%-150%)
		13C-4-DiCB		52.0	(25%-150%)
		13C-15-DiCB		71.9	(25%-150%)
		13C-19-TrCB		62.1	(25%-150%)
		13C-37-TrCB		84.3	(25%-150%)
		13C-54-TeCB		82.0	(25%-150%)
		13C-77-TeCB		95.0	(25%-150%)
		13C-81-TeCB		93.0	(25%-150%)
		13C-104-PeCB		88.5	(25%-150%)
		13C-105-PeCB		79.7	(25%-150%)
		13C-114-PeCB		77.6	(25%-150%)
		13C-118-PeCB		81.8	(25%-150%)
		13C-123-PeCB		85.0	(25%-150%)
		13C-126-PeCB		84.8	(25%-150%)
		13C-155-HxCB		87.3	(25%-150%)
		13C-156-HxCB	C	82.6	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		77.4	(25%-150%)
		13C-169-HxCB		99.1	(25%-150%)
		13C-188-HpCB		58.0	(25%-150%)
		13C-189-HpCB		71.2	(25%-150%)
		13C-202-OcCB		60.5	(25%-150%)
		13C-205-OcCB		90.7	(25%-150%)
		13C-206-NoCB		87.5	(25%-150%)
		13C-208-NoCB		79.7	(25%-150%)
		13C-209-DeCB		102	(25%-150%)
		13C-28-TrCB		87.0	(30%-135%)
		13C-111-PeCB		92.5	(30%-135%)
		13C-178-HpCB		93.4	(30%-135%)
12010065	CACV-14-49260(5878001MSD)	13C-1-MoCB		35.1	(15%-150%)
		13C-3-MoCB		48.9	(15%-150%)
		13C-4-DiCB		50.7	(25%-150%)
		13C-15-DiCB		70.9	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-2962

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010065	CACV-14-49260(5878001MSD)	13C-19-TrCB		63.2	(25%-150%)
		13C-37-TrCB		81.7	(25%-150%)
		13C-54-TeCB		82.1	(25%-150%)
		13C-77-TeCB		94.3	(25%-150%)
		13C-81-TeCB		93.4	(25%-150%)
		13C-104-PeCB		90.7	(25%-150%)
		13C-105-PeCB		83.4	(25%-150%)
		13C-114-PeCB		79.0	(25%-150%)
		13C-118-PeCB		85.0	(25%-150%)
		13C-123-PeCB		87.9	(25%-150%)
		13C-126-PeCB		88.5	(25%-150%)
		13C-155-HxCB		89.7	(25%-150%)
		13C-156-HxCB	C	85.3	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		80.6	(25%-150%)
		13C-169-HxCB		97.8	(25%-150%)
		13C-188-HpCB		61.4	(25%-150%)
		13C-189-HpCB		72.3	(25%-150%)
		13C-202-OcCB		65.7	(25%-150%)
		13C-205-OcCB		94.6	(25%-150%)
		13C-206-NoCB		90.5	(25%-150%)
		13C-208-NoCB		82.5	(25%-150%)
		13C-209-DeCB		105	(25%-150%)
		13C-28-TrCB		89.2	(30%-135%)
		13C-111-PeCB		94.6	(30%-135%)
		13C-178-HpCB		96.0	(30%-135%)
5878002	CACV-14-49263	13C-1-MoCB		25.2	(15%-150%)
		13C-3-MoCB		44.0	(15%-150%)
		13C-4-DiCB		46.1	(25%-150%)
		13C-15-DiCB		96.8	(25%-150%)
		13C-19-TrCB		71.0	(25%-150%)
		13C-37-TrCB		84.5	(25%-150%)
		13C-54-TeCB		61.8	(25%-150%)
		13C-77-TeCB		105	(25%-150%)
		13C-81-TeCB		104	(25%-150%)
		13C-104-PeCB		72.5	(25%-150%)
		13C-105-PeCB		81.2	(25%-150%)
		13C-114-PeCB		77.3	(25%-150%)
		13C-118-PeCB		82.1	(25%-150%)
		13C-123-PeCB		84.9	(25%-150%)
		13C-126-PeCB		89.3	(25%-150%)
		13C-155-HxCB		71.2	(25%-150%)
		13C-156-HxCB	C	74.9	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		70.7	(25%-150%)
		13C-169-HxCB		85.8	(25%-150%)
		13C-188-HpCB		60.6	(25%-150%)
		13C-189-HpCB		69.1	(25%-150%)
		13C-202-OcCB		63.6	(25%-150%)
		13C-205-OcCB		87.7	(25%-150%)
		13C-206-NoCB		82.6	(25%-150%)
		13C-208-NoCB		78.9	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-2962

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5878002	CACV-14-49263	13C-209-DeCB		95.4	(25%-150%)
		13C-28-TrCB		71.2	(30%-135%)
		13C-111-PeCB		87.1	(30%-135%)
		13C-178-HpCB		86.6	(30%-135%)
5878003	CACV-14-49261	13C-1-MoCB		35.3	(15%-150%)
		13C-3-MoCB		47.7	(15%-150%)
		13C-4-DiCB		49.0	(25%-150%)
		13C-15-DiCB		70.5	(25%-150%)
		13C-19-TrCB		57.1	(25%-150%)
		13C-37-TrCB		79.7	(25%-150%)
		13C-54-TeCB		70.8	(25%-150%)
		13C-77-TeCB		97.3	(25%-150%)
		13C-81-TeCB		96.7	(25%-150%)
		13C-104-PeCB		75.7	(25%-150%)
		13C-105-PeCB		82.7	(25%-150%)
		13C-114-PeCB		78.2	(25%-150%)
		13C-118-PeCB		83.5	(25%-150%)
		13C-123-PeCB		86.3	(25%-150%)
		13C-126-PeCB		92.2	(25%-150%)
		13C-155-HxCB		74.7	(25%-150%)
		13C-156-HxCB	C	81.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		76.7	(25%-150%)
		13C-169-HxCB		96.5	(25%-150%)
		13C-188-HpCB		52.8	(25%-150%)
		13C-189-HpCB		70.1	(25%-150%)
		13C-202-OcCB		60.0	(25%-150%)
		13C-205-OcCB		88.8	(25%-150%)
		13C-206-NoCB		82.7	(25%-150%)
		13C-208-NoCB		77.1	(25%-150%)
		13C-209-DeCB		93.9	(25%-150%)
		13C-28-TrCB		85.0	(30%-135%)
		13C-111-PeCB		94.4	(30%-135%)
		13C-178-HpCB		92.7	(30%-135%)
5878004	CACV-14-49262	13C-1-MoCB		29.8	(15%-150%)
		13C-3-MoCB		44.2	(15%-150%)
		13C-4-DiCB		42.7	(25%-150%)
		13C-15-DiCB		67.0	(25%-150%)
		13C-19-TrCB		54.9	(25%-150%)
		13C-37-TrCB		79.5	(25%-150%)
		13C-54-TeCB		72.8	(25%-150%)
		13C-77-TeCB		95.0	(25%-150%)
		13C-81-TeCB		93.2	(25%-150%)
		13C-104-PeCB		79.3	(25%-150%)
		13C-105-PeCB		78.7	(25%-150%)
		13C-114-PeCB		74.5	(25%-150%)
		13C-118-PeCB		79.3	(25%-150%)
		13C-123-PeCB		82.3	(25%-150%)
		13C-126-PeCB		85.0	(25%-150%)
		13C-155-HxCB		78.8	(25%-150%)
		13C-156-HxCB	C	83.0	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-2962

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5878004	CACV-14-49262	13C-157-HxCB	C156L		
		13C-167-HxCB		77.1	(25%-150%)
		13C-169-HxCB		96.7	(25%-150%)
		13C-188-HpCB		51.6	(25%-150%)
		13C-189-HpCB		67.9	(25%-150%)
		13C-202-OcCB		57.4	(25%-150%)
		13C-205-OcCB		86.8	(25%-150%)
		13C-206-NoCB		80.5	(25%-150%)
		13C-208-NoCB		75.5	(25%-150%)
		13C-209-DeCB		83.6	(25%-150%)
		13C-28-TrCB		80.3	(30%-135%)
		13C-111-PeCB		88.8	(30%-135%)
		13C-178-HpCB		84.7	(30%-135%)
5878005	CAWA-14-49297	13C-1-MoCB		32.0	(15%-150%)
		13C-3-MoCB		47.2	(15%-150%)
		13C-4-DiCB		47.4	(25%-150%)
		13C-15-DiCB		67.2	(25%-150%)
		13C-19-TrCB		56.4	(25%-150%)
		13C-37-TrCB		77.1	(25%-150%)
		13C-54-TeCB		68.7	(25%-150%)
		13C-77-TeCB		84.8	(25%-150%)
		13C-81-TeCB		88.9	(25%-150%)
		13C-104-PeCB		79.9	(25%-150%)
		13C-105-PeCB		75.9	(25%-150%)
		13C-114-PeCB		73.3	(25%-150%)
		13C-118-PeCB		77.9	(25%-150%)
		13C-123-PeCB		80.1	(25%-150%)
		13C-126-PeCB		80.0	(25%-150%)
		13C-155-HxCB		80.5	(25%-150%)
		13C-156-HxCB	C	79.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		74.5	(25%-150%)
		13C-169-HxCB		95.2	(25%-150%)
		13C-188-HpCB		52.8	(25%-150%)
		13C-189-HpCB		66.9	(25%-150%)
		13C-202-OcCB		54.9	(25%-150%)
		13C-205-OcCB		86.7	(25%-150%)
		13C-206-NoCB		80.2	(25%-150%)
		13C-208-NoCB		74.8	(25%-150%)
		13C-209-DeCB		91.0	(25%-150%)
		13C-28-TrCB		79.8	(30%-135%)
		13C-111-PeCB		85.6	(30%-135%)
		13C-178-HpCB		85.3	(30%-135%)
5878006	CAWA-14-49298	13C-1-MoCB		37.0	(15%-150%)
		13C-3-MoCB		49.3	(15%-150%)
		13C-4-DiCB		51.7	(25%-150%)
		13C-15-DiCB		69.5	(25%-150%)
		13C-19-TrCB		61.2	(25%-150%)
		13C-37-TrCB		75.6	(25%-150%)
		13C-54-TeCB		76.6	(25%-150%)
		13C-77-TeCB		88.6	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-2962

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5878006	CAWA-14-49298	13C-81-TeCB		88.1	(25%-150%)
		13C-104-PeCB		82.3	(25%-150%)
		13C-105-PeCB		77.8	(25%-150%)
		13C-114-PeCB		74.5	(25%-150%)
		13C-118-PeCB		79.2	(25%-150%)
		13C-123-PeCB		82.6	(25%-150%)
		13C-126-PeCB		85.2	(25%-150%)
		13C-155-HxCB		77.0	(25%-150%)
		13C-156-HxCB	C	81.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		75.5	(25%-150%)
		13C-169-HxCB		95.7	(25%-150%)
		13C-188-HpCB		48.1	(25%-150%)
		13C-189-HpCB		65.8	(25%-150%)
		13C-202-OcCB		53.8	(25%-150%)
		13C-205-OcCB		85.0	(25%-150%)
		13C-206-NoCB		78.6	(25%-150%)
		13C-208-NoCB		72.1	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		80.3	(30%-135%)
		13C-111-PeCB		87.0	(30%-135%)
		13C-178-HpCB		84.3	(30%-135%)
5878007	CAWA-14-49271	13C-1-MoCB		34.4	(15%-150%)
		13C-3-MoCB		49.3	(15%-150%)
		13C-4-DiCB		43.8	(25%-150%)
		13C-15-DiCB		66.4	(25%-150%)
		13C-19-TrCB		48.6	(25%-150%)
		13C-37-TrCB		72.6	(25%-150%)
		13C-54-TeCB		57.1	(25%-150%)
		13C-77-TeCB		89.1	(25%-150%)
		13C-81-TeCB		87.8	(25%-150%)
		13C-104-PeCB		62.9	(25%-150%)
		13C-105-PeCB		73.9	(25%-150%)
		13C-114-PeCB		69.7	(25%-150%)
		13C-118-PeCB		74.9	(25%-150%)
		13C-123-PeCB		76.8	(25%-150%)
		13C-126-PeCB		83.2	(25%-150%)
		13C-155-HxCB		62.6	(25%-150%)
		13C-156-HxCB	C	77.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		70.8	(25%-150%)
		13C-169-HxCB		95.0	(25%-150%)
		13C-188-HpCB		45.5	(25%-150%)
		13C-189-HpCB		65.1	(25%-150%)
		13C-202-OcCB		50.5	(25%-150%)
		13C-205-OcCB		84.8	(25%-150%)
		13C-206-NoCB		80.1	(25%-150%)
		13C-208-NoCB		72.2	(25%-150%)
		13C-209-DeCB		87.7	(25%-150%)
		13C-28-TrCB		89.8	(30%-135%)
		13C-111-PeCB		98.0	(30%-135%)
		13C-178-HpCB		95.6	(30%-135%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-2962

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-2962**
Client ID: **LCS for batch 25525**
Lab Sample ID: **12010062**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample**
Matrix: **SOLID**
Analysis Date: **03/25/2014 17:45**
Dilution: **1**
Prep Batch ID: **25525**
Batch ID: **25527**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS	PCB-1	50.0		42.0	84	50-150
2051-62-9	LCS	PCB-3	50.0		43.6	87.3	50-150
13029-08-8	LCS	PCB-4	50.0		39.9	79.8	50-150
2050-68-2	LCS	PCB-15	50.0		46.3	92.5	50-150
38444-73-4	LCS	PCB-19	50.0		43.8	87.6	50-150
38444-90-5	LCS	PCB-37	50.0		43.3	86.7	50-150
15968-05-5	LCS	PCB-54	100		86.8	86.8	50-150
32598-13-3	LCS	PCB-77	100		79.6	79.6	50-150
70362-50-4	LCS	PCB-81	100		90.1	90.1	50-150
56558-16-8	LCS	PCB-104	100		91.9	91.9	50-150
32598-14-4	LCS	PCB-105	100		99.5	99.5	50-150
74472-37-0	LCS	PCB-114	100		97.9	97.9	50-150
31508-00-6	LCS	PCB-118	100		83.5	83.5	50-150
65510-44-3	LCS	PCB-123	100		79.7	79.7	50-150
57465-28-8	LCS	PCB-126	100		94.6	94.6	50-150
33979-03-2	LCS	PCB-155	100		92.0	92	50-150
38380-08-4	LCS	PCB-156/157	200	C	209	104	50-150
52663-72-6	LCS	PCB-167	100		111	111	50-150
32774-16-6	LCS	PCB-169	100		94.2	94.2	50-150
74487-85-7	LCS	PCB-188	100		94.2	94.2	50-150
39635-31-9	LCS	PCB-189	100		96.9	96.9	50-150
2136-99-4	LCS	PCB-202	150		140	93.6	50-150
74472-53-0	LCS	PCB-205	150		138	91.7	50-150
40186-72-9	LCS	PCB-206	150		134	89.2	50-150
52663-77-1	LCS	PCB-208	150		145	96.7	50-150
2051-24-3	LCS	PCB-209	150		131	87.5	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-2962**
Client ID: **LCSD for batch 25525**
Lab Sample ID: **12010063**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample Duplicate**
Matrix: **SOLID**
Analysis Date: **03/25/2014 18:53**
Dilution: **1**
Prep Batch ID: **25525**
Batch ID: **25527**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	PCB-1	50.0		41.4	82.9	50-150	1.36	0-20
2051-62-9	LCSD	PCB-3	50.0		44.2	88.5	50-150	1.32	0-20
13029-08-8	LCSD	PCB-4	50.0		38.9	77.7	50-150	2.59	0-20
2050-68-2	LCSD	PCB-15	50.0		45.9	91.9	50-150	0.699	0-20
38444-73-4	LCSD	PCB-19	50.0		44.2	88.5	50-150	0.945	0-20
38444-90-5	LCSD	PCB-37	50.0		43.5	87	50-150	0.368	0-20
15968-05-5	LCSD	PCB-54	100		85.0	85	50-150	2.05	0-20
32598-13-3	LCSD	PCB-77	100		80.8	80.8	50-150	1.56	0-20
70362-50-4	LCSD	PCB-81	100		89.7	89.7	50-150	0.385	0-20
56558-16-8	LCSD	PCB-104	100		91.5	91.5	50-150	0.436	0-20
32598-14-4	LCSD	PCB-105	100		99.8	99.8	50-150	0.347	0-20
74472-37-0	LCSD	PCB-114	100		98.1	98.1	50-150	0.188	0-20
31508-00-6	LCSD	PCB-118	100		83.2	83.2	50-150	0.365	0-20
65510-44-3	LCSD	PCB-123	100		79.7	79.7	50-150	0.0477	0-20
57465-28-8	LCSD	PCB-126	100		93.4	93.4	50-150	1.19	0-20
33979-03-2	LCSD	PCB-155	100		92.1	92.1	50-150	0.0652	0-20
38380-08-4	LCSD	PCB-156/157	200	C	210	105	50-150	0.496	0-20
52663-72-6	LCSD	PCB-167	100		113	113	50-150	1.88	0-20
32774-16-6	LCSD	PCB-169	100		95.3	95.3	50-150	1.14	0-20
74487-85-7	LCSD	PCB-188	100		94.8	94.8	50-150	0.597	0-20
39635-31-9	LCSD	PCB-189	100		97.1	97.1	50-150	0.278	0-20
2136-99-4	LCSD	PCB-202	150		141	94.3	50-150	0.680	0-20
74472-53-0	LCSD	PCB-205	150		137	91.7	50-150	0.096	0-20
40186-72-9	LCSD	PCB-206	150		135	89.9	50-150	0.817	0-20
52663-77-1	LCSD	PCB-208	150		147	98.1	50-150	1.41	0-20
2051-24-3	LCSD	PCB-209	150		131	87.3	50-150	0.204	0-20

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-2962**
Client ID: **CACV-14-49260(5878001MS)**
Lab Sample ID: **12010064**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Matrix Spike**
Matrix: **SOLID**
%Moisture: **6.1**
Analysis Date: **03/25/2014 22:16**
Prep Batch ID: **25525**
Batch ID: **25527**

Dilution: **1**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	MS	PCB-1	49.3	U	36.0	72.9	50-150
2051-62-9	MS	PCB-3	49.3	U	42.6	86.3	50-150
13029-08-8	MS	PCB-4	49.3	U	35.0	70.9	50-150
2050-68-2	MS	PCB-15	49.3	U	43.2	86.7	50-150
38444-73-4	MS	PCB-19	49.3	U	43.2	87.6	50-150
38444-90-5	MS	PCB-37	49.3	J	47.0	90.2	50-150
15968-05-5	MS	PCB-54	98.7	U	80.1	81.2	50-150
32598-13-3	MS	PCB-77	98.7		83.8	82.6	50-150
70362-50-4	MS	PCB-81	98.7	U	88.2	89.5	50-150
56558-16-8	MS	PCB-104	98.7	U	87.2	88.4	50-150
32598-14-4	MS	PCB-105	98.7		123	107	50-150
74472-37-0	MS	PCB-114	98.7	U	94.4	95.7	50-150
31508-00-6	MS	PCB-118	98.7		129	87.6	50-150
65510-44-3	MS	PCB-123	98.7	J	84.4	84.5	50-150
57465-28-8	MS	PCB-126	98.7	U	93.3	94.6	50-150
33979-03-2	MS	PCB-155	98.7	U	91.5	92.7	50-150
38380-08-4	MS	PCB-156/157	197	C	219	105	50-150
52663-72-6	MS	PCB-167	98.7		118	113	50-150
32774-16-6	MS	PCB-169	98.7	U	92.5	93.8	50-150
74487-85-7	MS	PCB-188	98.7	U	93.0	94.3	50-150
39635-31-9	MS	PCB-189	98.7	J	97.9	98	50-150
2136-99-4	MS	PCB-202	148		144	95.8	50-150
74472-53-0	MS	PCB-205	148	U	138	93.1	50-150
40186-72-9	MS	PCB-206	148		137	89.7	50-150
52663-77-1	MS	PCB-208	148	U	146	98.8	50-150
2051-24-3	MS	PCB-209	148		132	87	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 2014-2962
Client ID: CACV-14-49260(5878001MSD)
Lab Sample ID: 12010065
Instrument: HRP791
Analyst: MJC

Sample Type: Matrix Spike Duplicate
Matrix: SOLID
%Moisture: 6.1
Analysis Date: 03/25/2014 23:23
Dilution: 1
Prep Batch ID: 25525
Batch ID: 25527

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	MSD	PCB-1	49.7	U	40.4	81.1	50-150	11.5	0-25
2051-62-9	MSD	PCB-3	49.7	U	48.0	96.4	50-150	11.9	0-25
13029-08-8	MSD	PCB-4	49.7	U	38.3	76.9	50-150	8.93	0-25
2050-68-2	MSD	PCB-15	49.7	U	47.9	95.4	50-150	10.2	0-25
38444-73-4	MSD	PCB-19	49.7	U	44.6	89.6	50-150	3.16	0-25
38444-90-5	MSD	PCB-37	49.7	J	47.2	89.8	50-150	0.372	0-25
15968-05-5	MSD	PCB-54	99.5	U	85.1	85.5	50-150	6.03	0-25
32598-13-3	MSD	PCB-77	99.5		83.0	81.2	50-150	0.923	0-25
70362-50-4	MSD	PCB-81	99.5	U	88.5	88.9	50-150	0.263	0-25
56558-16-8	MSD	PCB-104	99.5	U	92.2	92.7	50-150	5.64	0-25
32598-14-4	MSD	PCB-105	99.5		122	105	50-150	0.820	0-25
74472-37-0	MSD	PCB-114	99.5	U	97.6	98.1	50-150	3.34	0-25
31508-00-6	MSD	PCB-118	99.5		131	88.4	50-150	1.15	0-25
65510-44-3	MSD	PCB-123	99.5	J	85.4	84.7	50-150	1.09	0-25
57465-28-8	MSD	PCB-126	99.5	U	92.5	93	50-150	0.813	0-25
33979-03-2	MSD	PCB-155	99.5	U	94.0	94.5	50-150	2.73	0-25
38380-08-4	MSD	PCB-156/157	199	C	236	112	50-150	7.26	0-25
52663-72-6	MSD	PCB-167	99.5		126	120	50-150	6.52	0-25
32774-16-6	MSD	PCB-169	99.5	U	94.1	94.5	50-150	1.62	0-25
74487-85-7	MSD	PCB-188	99.5	U	94.8	95.3	50-150	1.84	0-25
39635-31-9	MSD	PCB-189	99.5	J	100	99.7	50-150	2.46	0-25
2136-99-4	MSD	PCB-202	149		146	96.6	50-150	1.61	0-25
74472-53-0	MSD	PCB-205	149	U	138	91.8	50-150	0.574	0-25
40186-72-9	MSD	PCB-206	149		140	91	50-150	2.21	0-25
52663-77-1	MSD	PCB-208	149	U	148	99	50-150	1.12	0-25
2051-24-3	MSD	PCB-209	149		137	89.3	50-150	3.31	0-25

Method Blank Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Matrix:**	**SOLID**
Client ID:	**MB for batch 25525**	**Instrument ID:**	**HRP791**	**Data File:**	**c25mar14b-4**
Lab Sample ID:	**12010061**	**Prep Date:**	**24-MAR-14**	**Analyzed:**	**03/25/14 20:01**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 25525	12010062	c25mar14b-2	03/25/14	1745
02	LCSD for batch 25525	12010063	c25mar14b-3	03/25/14	1853
03	CACV-14-49260	5878001	c25mar14b-5	03/25/14	2108
04	CACV-14-49260(5878001MS)	12010064	c25mar14b-6	03/25/14	2216
05	CACV-14-49260(5878001MSD)	12010065	c25mar14b-7	03/25/14	2323
06	CACV-14-49263	5878002	c25mar14b-8	03/26/14	0031
07	CACV-14-49261	5878003	c25mar14b-9	03/26/14	0138
08	CACV-14-49262	5878004	c25mar14b-10	03/26/14	0246
09	CAWA-14-49297	5878005	c25mar14b_2-3	03/26/14	0621
10	CAWA-14-49298	5878006	c25mar14b_2-4	03/26/14	0729
11	CAWA-14-49271	5878007	c25mar14b_2-5	03/26/14	0837

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	1	1	pg/g	1.00	5.00
2051-61-8	PCB-2	U	1	1	pg/g	1.00	2.00
2051-62-9	PCB-3	U	1	1	pg/g	1.00	2.00
13029-08-8	PCB-4	U	1	1	pg/g	1.00	4.00
16605-91-7	PCB-5	U	1	1	pg/g	1.00	4.00
25569-80-6	PCB-6	U	1	1	pg/g	1.00	2.00
33284-50-3	PCB-7	U	1	1	pg/g	1.00	4.00
34883-43-7	PCB-8	U	1	1	pg/g	1.00	20.0
34883-39-1	PCB-9	U	1	1	pg/g	1.00	2.00
33146-45-1	PCB-10	U	1	1	pg/g	1.00	4.00
2050-67-1	PCB-11	U	2.43	2	pg/g	2.00	50.0
PCB-12/13	PCB-13/12	CU	1	1	pg/g	1.00	8.00
34883-41-5	PCB-14	U	1	1	pg/g	1.00	4.00
2050-68-2	PCB-15	U	1	1	pg/g	1.00	20.0
38444-78-9	PCB-16	U	1	1	pg/g	1.00	4.00
37680-66-3	PCB-17	U	.666	.666	pg/g	0.666	4.00
PCB-18/30	PCB-18/30	CU	1.33	1.33	pg/g	1.33	4.00
38444-73-4	PCB-19	U	.666	.666	pg/g	0.666	2.00
PCB-20/28	PCB-20/28	CU	1.33	1.33	pg/g	1.33	20.0
PCB-21/33	PCB-21/33	CU	1.33	1.33	pg/g	1.33	8.00
38444-85-8	PCB-22	U	.666	.666	pg/g	0.666	4.00
55720-44-0	PCB-23	U	.666	.666	pg/g	0.666	2.00
55702-45-9	PCB-24	U	.666	.666	pg/g	0.666	2.00
55712-37-3	PCB-25	U	.666	.666	pg/g	0.666	2.00
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	4.00
38444-76-7	PCB-27	U	.666	.666	pg/g	0.666	2.00
16606-02-3	PCB-31	U	.666	.666	pg/g	0.666	10.0
38444-77-8	PCB-32	U	.666	.666	pg/g	0.666	2.00
37680-68-5	PCB-34	U	.666	.666	pg/g	0.666	2.00
37680-69-6	PCB-35	U	.666	.666	pg/g	0.666	4.00
38444-87-0	PCB-36	U	.666	.666	pg/g	0.666	4.00
38444-90-5	PCB-37	U	.666	.666	pg/g	0.666	20.0

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.666	.666	pg/g	0.666	2.00
38444-88-1	PCB-39	U	.666	.666	pg/g	0.666	4.00
PCB-40/71	PCB-40/71	CU	1.33	1.33	pg/g	1.33	4.00
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	2.00
36559-22-5	PCB-42	U	1	1	pg/g	1.00	2.00
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	4.00
PCB-44/47/65	PCB-44/65/47	CU	3.34	3.34	pg/g	3.34	6.00
PCB-45/51	PCB-45/51	CU	1.33	1.33	pg/g	1.33	4.00
41464-47-5	PCB-46	U	.666	.666	pg/g	0.666	2.00
70362-47-9	PCB-48	U	.666	.666	pg/g	0.666	2.00
PCB-49/69	PCB-69/49	CU	1.33	1.33	pg/g	1.33	4.00
PCB-50/53	PCB-50/53	CU	1.33	1.33	pg/g	1.33	4.00
35693-99-3	PCB-52	U	1.33	1.33	pg/g	1.33	2.00
15968-05-5	PCB-54	U	.666	.666	pg/g	0.666	2.00
74338-24-2	PCB-55	U	1	1	pg/g	1.00	2.00
41464-43-1	PCB-56	U	.666	.666	pg/g	0.666	4.00
70424-67-8	PCB-57	U	1	1	pg/g	1.00	2.00
41464-49-7	PCB-58	U	1	1	pg/g	1.00	2.00
PCB-59/62/75	PCB-59/62/75	CU	2	2	pg/g	2.00	6.00
33025-41-1	PCB-60	U	.666	.666	pg/g	0.666	4.00
PCB-61-76	PCB-61/76/70/74	CU	2.66	2.66	pg/g	2.66	8.00
74472-34-7	PCB-63	U	.666	.666	pg/g	0.666	5.00
52663-58-8	PCB-64	U	1	1	pg/g	1.00	2.00
32598-10-0	PCB-66	U	1	1	pg/g	1.00	5.00
73575-53-8	PCB-67	U	1	1	pg/g	1.00	2.00
73575-52-7	PCB-68	U	.666	.666	pg/g	0.666	2.00
41464-42-0	PCB-72	U	.666	.666	pg/g	0.666	4.00
74338-23-1	PCB-73	U	1	1	pg/g	1.00	2.00
32598-13-3	PCB-77	U	.666	.666	pg/g	0.666	2.00
70362-49-1	PCB-78	U	.666	.666	pg/g	0.666	2.00
41464-48-6	PCB-79	U	.666	.666	pg/g	0.666	4.00
33284-52-5	PCB-80	U	.666	.666	pg/g	0.666	4.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.666	.666	pg/g	0.666	2.00
52663-62-4	PCB-82	U	1	1	pg/g	1.00	5.00
60145-20-2	PCB-83	U	1	1	pg/g	1.00	2.00
52663-60-2	PCB-84	U	1	1	pg/g	1.00	2.00
PCB-85-117	PCB-117/116/85	CU	2	2	pg/g	2.00	6.00
PCB-86-125	PCB-86/87/97/109/119/125	CU	4	4	pg/g	4.00	12.0
PCB-88/91	PCB-88/91	CU	1.33	1.33	pg/g	1.33	4.00
73575-57-2	PCB-89	U	.666	.666	pg/g	0.666	2.00
PCB-90-113	PCB-113/90/101	CU	2	2	pg/g	2.00	6.00
52663-61-3	PCB-92	U	1	1	pg/g	1.00	2.00
PCB-93/100	PCB-93/100	CU	2	2	pg/g	2.00	4.00
73575-55-0	PCB-94	U	.666	.666	pg/g	0.666	2.00
38379-99-6	PCB-95	U	1.33	1.33	pg/g	1.33	4.00
73575-54-9	PCB-96	U	.666	.666	pg/g	0.666	2.00
PCB-98/102	PCB-102/98	CU	1.33	1.33	pg/g	1.33	4.00
38380-01-7	PCB-99	U	1.33	1.33	pg/g	1.33	2.00
60145-21-3	PCB-103	U	.666	.666	pg/g	0.666	5.00
56558-16-8	PCB-104	U	.666	.666	pg/g	0.666	2.00
32598-14-4	PCB-105	U	1	1	pg/g	1.00	2.00
70424-69-0	PCB-106	U	1	1	pg/g	1.00	2.00
70424-68-9	PCB-107	U	.666	.666	pg/g	0.666	4.00
PCB-108/124	PCB-108/124	CU	1.33	1.33	pg/g	1.33	4.00
PCB-110/115	PCB-110/115	CU	2.66	2.66	pg/g	2.66	4.00
39635-32-0	PCB-111	U	.666	.666	pg/g	0.666	2.00
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	2.00
74472-37-0	PCB-114	U	.666	.666	pg/g	0.666	2.00
31508-00-6	PCB-118	U	1.33	1.33	pg/g	1.33	4.00
68194-12-7	PCB-120	U	.666	.666	pg/g	0.666	2.00
56558-18-0	PCB-121	U	.666	.666	pg/g	0.666	2.00
76842-07-4	PCB-122	U	.666	.666	pg/g	0.666	6.92
65510-44-3	PCB-123	U	.666	.666	pg/g	0.666	2.00
57465-28-8	PCB-126	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.666	.666	pg/g	0.666	2.00
PCB-128/166	PCB-128/166	CU	1.33	1.33	pg/g	1.33	4.00
PCB-129-163	PCB-138/163/129	CU	2.66	2.66	pg/g	2.66	6.00
52663-66-8	PCB-130	U	1	1	pg/g	1.00	2.00
61798-70-7	PCB-131	U	.666	.666	pg/g	0.666	2.00
38380-05-1	PCB-132	U	1	1	pg/g	1.00	2.00
35694-04-3	PCB-133	U	.666	.666	pg/g	0.666	2.00
52704-70-8	PCB-134	U	1.33	1.33	pg/g	1.33	2.00
PCB-135/151	PCB-151/135	CU	1.33	1.33	pg/g	1.33	4.00
38411-22-2	PCB-136	U	.666	.666	pg/g	0.666	2.00
35694-06-5	PCB-137	U	1.33	1.33	pg/g	1.33	2.00
PCB-139/140	PCB-139/140	CU	1.33	1.33	pg/g	1.33	4.00
52712-04-6	PCB-141	U	1.33	1.33	pg/g	1.33	4.00
41411-61-4	PCB-142	U	.666	.666	pg/g	0.666	2.00
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	2.00
68194-14-9	PCB-144	U	.666	.666	pg/g	0.666	2.00
74472-40-5	PCB-145	U	.666	.666	pg/g	0.666	2.00
51908-16-8	PCB-146	U	1	1	pg/g	1.00	2.00
PCB-147/149	PCB-147/149	CU	2	2	pg/g	2.00	8.00
74472-41-6	PCB-148	U	.666	.666	pg/g	0.666	2.00
68194-08-1	PCB-150	U	1	1	pg/g	1.00	2.00
68194-09-2	PCB-152	U	.666	.666	pg/g	0.666	2.00
PCB-153/168	PCB-153/168	CU	2	2	pg/g	2.00	8.00
60145-22-4	PCB-154	U	.666	.666	pg/g	0.666	2.00
33979-03-2	PCB-155	U	.666	.666	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	CU	1.33	1.33	pg/g	1.33	4.00
74472-42-7	PCB-158	U	.666	.666	pg/g	0.666	2.00
39635-35-3	PCB-159	U	.666	.666	pg/g	0.666	2.00
41411-62-5	PCB-160	U	.666	.666	pg/g	0.666	2.00
74472-43-8	PCB-161	U	1	1	pg/g	1.00	2.00
39635-34-2	PCB-162	U	1	1	pg/g	1.00	2.00
74472-45-0	PCB-164	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.666	.666	pg/g	0.666	2.00
52663-72-6	PCB-167	U	.666	.666	pg/g	0.666	2.00
32774-16-6	PCB-169	U	1	1	pg/g	1.00	2.00
35065-30-6	PCB-170	U	.666	.666	pg/g	0.666	2.00
PCB-171/173	PCB-173/171	CU	1.33	1.33	pg/g	1.33	4.00
52663-74-8	PCB-172	U	1	1	pg/g	1.00	2.00
38411-25-5	PCB-174	U	1.33	1.33	pg/g	1.33	2.00
40186-70-7	PCB-175	U	1	1	pg/g	1.00	2.00
52663-65-7	PCB-176	U	.666	.666	pg/g	0.666	2.00
52663-70-4	PCB-177	U	1	1	pg/g	1.00	2.00
52663-67-9	PCB-178	U	1.33	1.33	pg/g	1.33	2.00
52663-64-6	PCB-179	U	.666	.666	pg/g	0.666	2.00
PCB-180/193	PCB-193/180	CU	2	2	pg/g	2.00	4.00
74472-47-2	PCB-181	U	1	1	pg/g	1.00	2.00
60145-23-5	PCB-182	U	.666	.666	pg/g	0.666	2.00
PCB-183/185	PCB-183/185	CU	1.33	1.33	pg/g	1.33	4.00
74472-48-3	PCB-184	U	.666	.666	pg/g	0.666	2.00
74472-49-4	PCB-186	U	.666	.666	pg/g	0.666	2.00
52663-68-0	PCB-187	U	1	1	pg/g	1.00	2.00
74487-85-7	PCB-188	U	.666	.666	pg/g	0.666	2.00
39635-31-9	PCB-189	U	.666	.666	pg/g	0.666	2.00
41411-64-7	PCB-190	U	1	1	pg/g	1.00	2.00
74472-50-7	PCB-191	U	.666	.666	pg/g	0.666	2.00
74472-51-8	PCB-192	U	.666	.666	pg/g	0.666	2.00
35694-08-7	PCB-194	U	.666	.666	pg/g	0.666	2.00
52663-78-2	PCB-195	U	1	1	pg/g	1.00	2.00
42740-50-1	PCB-196	U	.666	.666	pg/g	0.666	2.00
PCB-197/200	PCB-197/200	CU	1.33	1.33	pg/g	1.33	4.00
PCB-198/199	PCB-198/199	CU	1.33	1.33	pg/g	1.33	4.00
40186-71-8	PCB-201	U	.666	.666	pg/g	0.666	2.00
2136-99-4	PCB-202	U	1	1	pg/g	1.00	2.00
52663-76-0	PCB-203	U	1.33	1.33	pg/g	1.33	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	1	1	pg/g	1.00	2.00
74472-53-0	PCB-205	U	.666	.666	pg/g	0.666	2.00
40186-72-9	PCB-206	U	1	1	pg/g	1.00	2.00
52663-79-3	PCB-207	U	.666	.666	pg/g	0.666	2.00
52663-77-1	PCB-208	U	.666	.666	pg/g	0.666	2.00
2051-24-3	PCB-209	U	.666	.666	pg/g	0.666	2.00
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	2.43	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	0	0	pg/g		
25429-29-2	Total Penta PCBs	U	0	0	pg/g		
26601-64-9	Total Hexa PCBs	U	0	0	pg/g		
28655-71-2	Total Hepta PCBs	U	0	0	pg/g		
55722-26-4	Total Octa PCBs	U	0	0	pg/g		
53742-07-7	Total Nona PCBs	U	0	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0	0	pg/g		
1336-36-3	Total PCB Congeners	U	2.43	0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		108	200	pg/g	53.9	(15%-150%)
13C-3-MoCB		116	200	pg/g	57.8	(15%-150%)
13C-4-DiCB		135	200	pg/g	67.3	(25%-150%)
13C-15-DiCB		136	200	pg/g	68.2	(25%-150%)
13C-19-TrCB		140	200	pg/g	70.1	(25%-150%)
13C-37-TrCB		151	200	pg/g	75.3	(25%-150%)
13C-54-TeCB		167	200	pg/g	83.5	(25%-150%)
13C-77-TeCB		158	200	pg/g	79.1	(25%-150%)
13C-81-TeCB		160	200	pg/g	79.8	(25%-150%)
13C-104-PeCB		171	200	pg/g	85.4	(25%-150%)
13C-105-PeCB		141	200	pg/g	70.4	(25%-150%)
13C-114-PeCB		137	200	pg/g	68.4	(25%-150%)
13C-118-PeCB		147	200	pg/g	73.3	(25%-150%)
13C-123-PeCB		150	200	pg/g	75.0	(25%-150%)
13C-126-PeCB		148	200	pg/g	74.0	(25%-150%)
13C-155-HxCB		168	200	pg/g	83.9	(25%-150%)
13C-156-HxCB	C	291	400	pg/g	72.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		138	200	pg/g	68.9	(25%-150%)
13C-169-HxCB		169	200	pg/g	84.7	(25%-150%)
13C-188-HpCB		117	200	pg/g	58.7	(25%-150%)
13C-189-HpCB		127	200	pg/g	63.4	(25%-150%)
13C-202-OcCB		120	200	pg/g	60.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		166	200	pg/g	82.9	(25%-150%)
13C-206-NoCB		160	200	pg/g	79.9	(25%-150%)
13C-208-NoCB		149	200	pg/g	74.4	(25%-150%)
13C-209-DeCB		180	200	pg/g	89.8	(25%-150%)
13C-28-TrCB		161	200	pg/g	80.6	(30%-135%)
13C-111-PeCB		166	200	pg/g	82.9	(30%-135%)
13C-178-HpCB		173	200	pg/g	86.7	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010062**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCS for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 17:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-2**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		42.2	42	pg/g	1.00	5.00
2051-62-9	PCB-3		44.1	43.6	pg/g	1.00	2.00
13029-08-8	PCB-4		40.8	39.9	pg/g	1.00	4.00
2050-68-2	PCB-15		46.9	46.3	pg/g	1.00	20.0
38444-73-4	PCB-19		44.0	43.8	pg/g	0.666	2.00
38444-90-5	PCB-37		43.7	43.3	pg/g	0.666	20.0
15968-05-5	PCB-54		86.9	86.8	pg/g	0.666	2.00
32598-13-3	PCB-77		79.8	79.6	pg/g	0.666	2.00
70362-50-4	PCB-81		90.3	90.1	pg/g	0.666	2.00
56558-16-8	PCB-104		92.1	91.9	pg/g	0.666	2.00
32598-14-4	PCB-105		100	99.5	pg/g	1.00	2.00
74472-37-0	PCB-114		98.3	97.9	pg/g	0.666	2.00
31508-00-6	PCB-118		85.4	83.5	pg/g	1.33	4.00
65510-44-3	PCB-123		80.0	79.7	pg/g	0.666	2.00
57465-28-8	PCB-126		94.9	94.6	pg/g	0.666	2.00
33979-03-2	PCB-155		92.2	92	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	209	209	pg/g	1.33	4.00
52663-72-6	PCB-167		111	111	pg/g	0.666	2.00
32774-16-6	PCB-169		94.5	94.2	pg/g	1.00	2.00
74487-85-7	PCB-188		94.4	94.2	pg/g	0.666	2.00
39635-31-9	PCB-189		97.1	96.9	pg/g	0.666	2.00
2136-99-4	PCB-202		141	140	pg/g	1.00	2.00
74472-53-0	PCB-205		138	138	pg/g	0.666	2.00
40186-72-9	PCB-206		134	134	pg/g	1.00	2.00
52663-77-1	PCB-208		145	145	pg/g	0.666	2.00
2051-24-3	PCB-209		132	131	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		76.7	200	pg/g	38.3	(15%-140%)
13C-3-MoCB		85.9	200	pg/g	43.0	(15%-140%)
13C-4-DiCB		94.6	200	pg/g	47.3	(30%-140%)
13C-15-DiCB		109	200	pg/g	54.6	(30%-140%)
13C-19-TrCB		106	200	pg/g	52.8	(30%-140%)
13C-37-TrCB		132	200	pg/g	66.0	(30%-140%)
13C-54-TeCB		134	200	pg/g	66.8	(30%-140%)
13C-77-TeCB		143	200	pg/g	71.3	(30%-140%)
13C-81-TeCB		144	200	pg/g	71.9	(30%-140%)
13C-104-PeCB		147	200	pg/g	73.3	(30%-140%)
13C-105-PeCB		129	200	pg/g	64.4	(30%-140%)
13C-114-PeCB		124	200	pg/g	61.8	(30%-140%)
13C-118-PeCB		132	200	pg/g	66.0	(30%-140%)
13C-123-PeCB		137	200	pg/g	68.4	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010062**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCS for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 17:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-2**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		132	200	pg/g	66.2	(30%-140%)
13C-155-HxCB		144	200	pg/g	72.0	(30%-140%)
13C-156-HxCB	C	247	400	pg/g	61.7	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		118	200	pg/g	58.8	(30%-140%)
13C-169-HxCB		142	200	pg/g	71.0	(30%-140%)
13C-188-HpCB		108	200	pg/g	53.9	(30%-140%)
13C-189-HpCB		114	200	pg/g	57.2	(30%-140%)
13C-202-OcCB		107	200	pg/g	53.7	(30%-140%)
13C-205-OcCB		147	200	pg/g	73.5	(30%-140%)
13C-206-NoCB		141	200	pg/g	70.7	(30%-140%)
13C-208-NoCB		134	200	pg/g	66.9	(30%-140%)
13C-209-DeCB		162	200	pg/g	81.1	(30%-140%)
13C-28-TrCB		136	200	pg/g	67.9	(40%-125%)
13C-111-PeCB		146	200	pg/g	72.9	(40%-125%)
13C-178-HpCB		149	200	pg/g	74.5	(40%-125%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010063**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCSD for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		41.7	41.4	pg/g	1.00	5.00
2051-62-9	PCB-3		44.7	44.2	pg/g	1.00	2.00
13029-08-8	PCB-4		39.7	38.9	pg/g	1.00	4.00
2050-68-2	PCB-15		46.6	45.9	pg/g	1.00	20.0
38444-73-4	PCB-19		44.4	44.2	pg/g	0.666	2.00
38444-90-5	PCB-37		43.8	43.5	pg/g	0.666	20.0
15968-05-5	PCB-54		85.2	85	pg/g	0.666	2.00
32598-13-3	PCB-77		81.1	80.8	pg/g	0.666	2.00
70362-50-4	PCB-81		90.0	89.7	pg/g	0.666	2.00
56558-16-8	PCB-104		91.7	91.5	pg/g	0.666	2.00
32598-14-4	PCB-105		100	99.8	pg/g	1.00	2.00
74472-37-0	PCB-114		98.5	98.1	pg/g	0.666	2.00
31508-00-6	PCB-118		85.1	83.2	pg/g	1.33	4.00
65510-44-3	PCB-123		80.0	79.7	pg/g	0.666	2.00
57465-28-8	PCB-126		93.8	93.4	pg/g	0.666	2.00
33979-03-2	PCB-155		92.3	92.1	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	210	210	pg/g	1.33	4.00
52663-72-6	PCB-167		113	113	pg/g	0.666	2.00
32774-16-6	PCB-169		95.6	95.3	pg/g	1.00	2.00
74487-85-7	PCB-188		95.0	94.8	pg/g	0.666	2.00
39635-31-9	PCB-189		97.4	97.1	pg/g	0.666	2.00
2136-99-4	PCB-202		142	141	pg/g	1.00	2.00
74472-53-0	PCB-205		138	137	pg/g	0.666	2.00
40186-72-9	PCB-206		135	135	pg/g	1.00	2.00
52663-77-1	PCB-208		147	147	pg/g	0.666	2.00
2051-24-3	PCB-209		131	131	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		93.7	200	pg/g	46.9	(15%-140%)
13C-3-MoCB		107	200	pg/g	53.7	(15%-140%)
13C-4-DiCB		123	200	pg/g	61.7	(30%-140%)
13C-15-DiCB		138	200	pg/g	68.8	(30%-140%)
13C-19-TrCB		140	200	pg/g	69.9	(30%-140%)
13C-37-TrCB		156	200	pg/g	78.2	(30%-140%)
13C-54-TeCB		175	200	pg/g	87.3	(30%-140%)
13C-77-TeCB		163	200	pg/g	81.4	(30%-140%)
13C-81-TeCB		164	200	pg/g	81.9	(30%-140%)
13C-104-PeCB		186	200	pg/g	93.2	(30%-140%)
13C-105-PeCB		152	200	pg/g	76.2	(30%-140%)
13C-114-PeCB		147	200	pg/g	73.4	(30%-140%)
13C-118-PeCB		157	200	pg/g	78.5	(30%-140%)
13C-123-PeCB		163	200	pg/g	81.6	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010063**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCSD for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		160	200	pg/g	80.0	(30%-140%)
13C-155-HxCB		178	200	pg/g	88.9	(30%-140%)
13C-156-HxCB	C	309	400	pg/g	77.2	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		148	200	pg/g	73.9	(30%-140%)
13C-169-HxCB		180	200	pg/g	90.0	(30%-140%)
13C-188-HpCB		127	200	pg/g	63.6	(30%-140%)
13C-189-HpCB		143	200	pg/g	71.5	(30%-140%)
13C-202-OcCB		133	200	pg/g	66.3	(30%-140%)
13C-205-OcCB		178	200	pg/g	89.2	(30%-140%)
13C-206-NoCB		170	200	pg/g	85.1	(30%-140%)
13C-208-NoCB		162	200	pg/g	81.0	(30%-140%)
13C-209-DeCB		199	200	pg/g	99.3	(30%-140%)
13C-28-TrCB		170	200	pg/g	84.9	(40%-125%)
13C-111-PeCB		174	200	pg/g	87.1	(40%-125%)
13C-178-HpCB		185	200	pg/g	92.3	(40%-125%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010064**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260(5878001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 22:16**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.8 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		36.2	36	pg/g	0.987	4.93
2051-62-9	PCB-3		43.0	42.6	pg/g	0.987	1.97
13029-08-8	PCB-4		35.9	35	pg/g	0.987	3.95
2050-68-2	PCB-15		43.9	43.2	pg/g	0.987	19.7
38444-73-4	PCB-19		43.4	43.2	pg/g	0.657	1.97
38444-90-5	PCB-37		47.4	47	pg/g	0.657	19.7
15968-05-5	PCB-54		80.2	80.1	pg/g	0.657	1.97
32598-13-3	PCB-77		84.0	83.8	pg/g	0.657	1.97
70362-50-4	PCB-81		88.5	88.2	pg/g	0.657	1.97
56558-16-8	PCB-104		87.4	87.2	pg/g	0.657	1.97
32598-14-4	PCB-105		124	123	pg/g	0.987	1.97
74472-37-0	PCB-114		94.7	94.4	pg/g	0.657	1.97
31508-00-6	PCB-118		131	129	pg/g	1.32	3.95
65510-44-3	PCB-123		84.8	84.4	pg/g	0.657	1.97
57465-28-8	PCB-126		93.7	93.3	pg/g	0.657	1.97
33979-03-2	PCB-155		91.7	91.5	pg/g	0.657	1.97
PCB-156/157	PCB-156/157	C	220	219	pg/g	1.32	3.95
52663-72-6	PCB-167		118	118	pg/g	0.657	1.97
32774-16-6	PCB-169		92.8	92.5	pg/g	0.987	1.97
74487-85-7	PCB-188		93.3	93	pg/g	0.657	1.97
39635-31-9	PCB-189		98.2	97.9	pg/g	0.657	1.97
2136-99-4	PCB-202		144	144	pg/g	0.987	1.97
74472-53-0	PCB-205		139	138	pg/g	0.657	1.97
40186-72-9	PCB-206		138	137	pg/g	0.987	1.97
52663-77-1	PCB-208		146	146	pg/g	0.657	1.97
2051-24-3	PCB-209		133	132	pg/g	0.657	1.97

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		70.8	197	pg/g	35.9	(15%-150%)
13C-3-MoCB		92.7	197	pg/g	47.0	(15%-150%)
13C-4-DiCB		103	197	pg/g	52.0	(25%-150%)
13C-15-DiCB		142	197	pg/g	71.9	(25%-150%)
13C-19-TrCB		122	197	pg/g	62.1	(25%-150%)
13C-37-TrCB		166	197	pg/g	84.3	(25%-150%)
13C-54-TeCB		162	197	pg/g	82.0	(25%-150%)
13C-77-TeCB		187	197	pg/g	95.0	(25%-150%)
13C-81-TeCB		184	197	pg/g	93.0	(25%-150%)
13C-104-PeCB		175	197	pg/g	88.5	(25%-150%)
13C-105-PeCB		157	197	pg/g	79.7	(25%-150%)
13C-114-PeCB		153	197	pg/g	77.6	(25%-150%)
13C-118-PeCB		161	197	pg/g	81.8	(25%-150%)
13C-123-PeCB		168	197	pg/g	85.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010064**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260(5878001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 22:16**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.8 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		167	197	pg/g	84.8	(25%-150%)
13C-155-HxCB		172	197	pg/g	87.3	(25%-150%)
13C-156-HxCB	C	326	395	pg/g	82.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		153	197	pg/g	77.4	(25%-150%)
13C-169-HxCB		196	197	pg/g	99.1	(25%-150%)
13C-188-HpCB		114	197	pg/g	58.0	(25%-150%)
13C-189-HpCB		141	197	pg/g	71.2	(25%-150%)
13C-202-OcCB		119	197	pg/g	60.5	(25%-150%)
13C-205-OcCB		179	197	pg/g	90.7	(25%-150%)
13C-206-NoCB		173	197	pg/g	87.5	(25%-150%)
13C-208-NoCB		157	197	pg/g	79.7	(25%-150%)
13C-209-DeCB		201	197	pg/g	102	(25%-150%)
13C-28-TrCB		172	197	pg/g	87.0	(30%-135%)
13C-111-PeCB		182	197	pg/g	92.5	(30%-135%)
13C-178-HpCB		184	197	pg/g	93.4	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010065**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260(5878001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 23:23**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		40.6	40.4	pg/g	0.995	4.97
2051-62-9	PCB-3		48.4	48	pg/g	0.995	1.99
13029-08-8	PCB-4		39.1	38.3	pg/g	0.995	3.98
2050-68-2	PCB-15		48.5	47.9	pg/g	0.995	19.9
38444-73-4	PCB-19		44.8	44.6	pg/g	0.663	1.99
38444-90-5	PCB-37		47.5	47.2	pg/g	0.663	19.9
15968-05-5	PCB-54		85.2	85.1	pg/g	0.663	1.99
32598-13-3	PCB-77		83.3	83	pg/g	0.663	1.99
70362-50-4	PCB-81		88.7	88.5	pg/g	0.663	1.99
56558-16-8	PCB-104		92.4	92.2	pg/g	0.663	1.99
32598-14-4	PCB-105		123	122	pg/g	0.995	1.99
74472-37-0	PCB-114		97.9	97.6	pg/g	0.663	1.99
31508-00-6	PCB-118		133	131	pg/g	1.33	3.98
65510-44-3	PCB-123		85.7	85.4	pg/g	0.663	1.99
57465-28-8	PCB-126		92.9	92.5	pg/g	0.663	1.99
33979-03-2	PCB-155		94.2	94	pg/g	0.663	1.99
PCB-156/157	PCB-156/157	C	236	236	pg/g	1.33	3.98
52663-72-6	PCB-167		126	126	pg/g	0.663	1.99
32774-16-6	PCB-169		94.3	94.1	pg/g	0.995	1.99
74487-85-7	PCB-188		95.0	94.8	pg/g	0.663	1.99
39635-31-9	PCB-189		101	100	pg/g	0.663	1.99
2136-99-4	PCB-202		147	146	pg/g	0.995	1.99
74472-53-0	PCB-205		138	138	pg/g	0.663	1.99
40186-72-9	PCB-206		141	140	pg/g	0.995	1.99
52663-77-1	PCB-208		148	148	pg/g	0.663	1.99
2051-24-3	PCB-209		137	137	pg/g	0.663	1.99

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		69.7	199	pg/g	35.1	(15%-150%)
13C-3-MoCB		97.3	199	pg/g	48.9	(15%-150%)
13C-4-DiCB		101	199	pg/g	50.7	(25%-150%)
13C-15-DiCB		141	199	pg/g	70.9	(25%-150%)
13C-19-TrCB		126	199	pg/g	63.2	(25%-150%)
13C-37-TrCB		163	199	pg/g	81.7	(25%-150%)
13C-54-TeCB		163	199	pg/g	82.1	(25%-150%)
13C-77-TeCB		188	199	pg/g	94.3	(25%-150%)
13C-81-TeCB		186	199	pg/g	93.4	(25%-150%)
13C-104-PeCB		180	199	pg/g	90.7	(25%-150%)
13C-105-PeCB		166	199	pg/g	83.4	(25%-150%)
13C-114-PeCB		157	199	pg/g	79.0	(25%-150%)
13C-118-PeCB		169	199	pg/g	85.0	(25%-150%)
13C-123-PeCB		175	199	pg/g	87.9	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-2962**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010065**	**Date Collected:**	**03/07/2014 10:10**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**	**Date Received:**	**03/11/2014 09:00**	**%Moisture:**	**6.1**
Client ID:	**CACV-14-49260(5878001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 23:23**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		176	199	pg/g	88.5	(25%-150%)
13C-155-HxCB		179	199	pg/g	89.7	(25%-150%)
13C-156-HxCB	C	339	398	pg/g	85.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		160	199	pg/g	80.6	(25%-150%)
13C-169-HxCB		195	199	pg/g	97.8	(25%-150%)
13C-188-HpCB		122	199	pg/g	61.4	(25%-150%)
13C-189-HpCB		144	199	pg/g	72.3	(25%-150%)
13C-202-OcCB		131	199	pg/g	65.7	(25%-150%)
13C-205-OcCB		188	199	pg/g	94.6	(25%-150%)
13C-206-NoCB		180	199	pg/g	90.5	(25%-150%)
13C-208-NoCB		164	199	pg/g	82.5	(25%-150%)
13C-209-DeCB		208	199	pg/g	105	(25%-150%)
13C-28-TrCB		177	199	pg/g	89.2	(30%-135%)
13C-111-PeCB		188	199	pg/g	94.6	(30%-135%)
13C-178-HpCB		191	199	pg/g	96.0	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3000

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CAWA-14-49277	Mar 13 2014	11:50	SO	1
CAWA-14-49278	Mar 13 2014	12:05	SO	1
CAWR-14-49293	Mar 13 2014	12:15	SO	1
CAWR-14-49294	Mar 13 2014	12:45	SO	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Sherri Sherwood	Sherri Sherwood	3/14/14 3pm			

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49277 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/13/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1150	MEDIA:		Sed
PRS ID:	Water-Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:		~~66~~ 5pm 3/7/14 WA-61499	FIELD PREP:	NA	
LOCATION TYPE:	BH	ok	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.29 7cm	EXCAVATED:		YES / NO / (NA)

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediments

LOCATION COMMENTS: WA-6 @ the Rio

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
K : 12.45 dpm
Bi/Ac: 917 dpm

Gross Alpha 18 dpm

Gross Beta/Gamma 1794 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY (Printed Name) (Signature) Scott Mugler	Date/Time 3/14/14 955	RECEIVED BY (Printed Name) (Signature) Sherwood Sheri Sherwood	Date/Time 3/14/14 955
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49278 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/13/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1205	MEDIA:		Sed
PRS ID:	Water-Canyon	OK SRC 3/13	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	ST Scm 3/14/14	WA-61500499	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:	0.229	7cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.557	17cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS:
Fine Sediments

LOCATION COMMENTS: WA-6 @ Rio. Depth sample at WA-61499 (7-17cm)

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Stgd Lab
Gross Alpha 47 dpm
12H5 2pm
Gross Beta/Gamma 1531 dpm
917 2pm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Muggleton	3/14/14 955	(Printed Name) S. Sherwood	3/14/14 955
(Signature)		(Signature) Sheri Sherwood	
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWR-14-49293 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/13/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1215	MEDIA:		Sed
PRS ID:	White Rock Canyon	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	70 Scan 9/7/14	WR-11	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.196	6cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Gamma Spec	250 ML POLY	1	NONE	Y	
	ISOU	250 ML POLY	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediments

LOCATION COMMENTS: Rio Grande below water canyon

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

DKed Pu

α: 12.45 dpm

3/8: 917 dpm

Gross Alpha 23 dpm

Gross Beta/Gamma 1326 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Muggleton (Signature)	3/14/14 955	(Printed Name) S. Sherwood (Signature) Sherwood	3/14/14 955
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/18/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWR-14-49294 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/13/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1245	MEDIA:		Sed
PRS ID:	White Rock Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:		WR-12	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.393 12cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Gamma Spec	250 ML POLY	1	NONE	Y	
	ISOU	250 ML POLY	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine sediments

LOCATION COMMENTS: Rio Grande below water canyon

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Gross Alpha 18 dpm

Gross Beta/Gamma 1463 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Muggleton (Signature)	3/14/14 955	(Printed Name) Sherwood (Signature)	3/14/14 955
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/18/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3000

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
5898	EPA:1668A	4				

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
5898	EPA:1668A	25527	25525	3					1	1	1			1	1						
5898	EPA:1668A	25607	25605	1					1					1	1						

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:1668A	PCBCONGENERS	CACV-14-49260	12010064	MS	0	29	26	0
EPA:1668A	PCBCONGENERS	CACV-14-49260	12010065	MSD	0	29	26	0
EPA:1668A	PCBCONGENERS	CAWA-14-49277	5898001	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWA-14-49278	5898002	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWR-14-49293	5898003	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWR-14-49294	5898004	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	LCS	12010062	LCS	0	29	26	0
EPA:1668A	PCBCONGENERS	LCS	12010146	LCS	0	29	26	0
EPA:1668A	PCBCONGENERS	LCSD	12010063	LCSD	0	29	26	0
EPA:1668A	PCBCONGENERS	LCSD	12010147	LCSD	0	29	26	0
EPA:1668A	PCBCONGENERS	MB	12010061	MB	177	29	0	0
EPA:1668A	PCBCONGENERS	MB	12010145	MB	177	29	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

DATA VALIDATION REPORT

13. Display Flagged Data.

None.

Reason Code	Description
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49277	WA-61499	REG	EPA:1668A	0	177
CAWA-14-49278	WA-61499	REG	EPA:1668A	0	177
CAWR-14-49293	WR-11	REG	EPA:1668A	0	177
CAWR-14-49294	WR-12	REG	EPA:1668A	0	177

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

April 11, 2014

Mr. Keith Greene
Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: 2012 WQH with LOCUS EDD
Work Order: 5898
SDG: 2014-3000

Dear Mr. Greene:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 15, 2014. This original data report has been prepared and reviewed in accordance with CFAôs standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynthia Larkins
Project Manager

Chain of Custody: 2014-3000
Enclosures

problem solved

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Los Alamos National Laboratory
2012 WQH with LOCUS EDD
Workorder #: 5898
SDG # : 2014-3000

Case Narrative

Receipt Narrative
for
Los Alamos National Laboratory
SDG: 2014-3000
Work Order: 5898

Laboratory Identification
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, North Carolina 28405
(910) 795-0421

Summary
Sample receipt: The samples arrived at Cape Fear Analytical LLC (CFA), Wilmington, North Carolina on March 15, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. Shipping container temperatures were checked, documented, and within specifications. All sample containers arrived without any visible signs of tampering or breakage. Appropriate sample containers were received. Sample containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Sufficient sample was received for analysis. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
5898001	CAWA-14-49277
5898002	CAWA-14-49278
5898003	CAWR-14-49293
5898004	CAWR-14-49294

Case Narrative
Sample analyses were conducted using methodology as outlined in Cape Fear Analyticalôs Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist and data from the following fractions: PCB Congeners.

Sincerely,

Cynde Larkins

Cynthia Larkins
Project Manager

List of current CFA Certifications as of 25 March 2014

State	Certification
California (NELAC)	09270CA
New Jersey (NELAC)	NC013
North Carolina	NC01894
South Carolina	99063001
Utah (Primary NELAC)	CFAL

Chain of Custody and Supporting Documentation

CFA WO # 5898

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3000

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CAWA-14-49277	Mar 13 2014	11:50	SO	1
CAWA-14-49278	Mar 13 2014	12:05	SO	1
CAWR-14-49293	Mar 13 2014	12:15	SO	1
CAWR-14-49294	Mar 13 2014	12:45	SO	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Sherri Sherwood	Sherri Sherwood	3/14/14 3pm	[signature]	Matthew Cash	3/15/14 13:10
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: LANL	Work Order: 5898
Received By: Matt Cash	Date/Time Received: 15 MAR14 1330

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			
Samples < 2x background?			

* Notify RSO of any responses in this column immediately.

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?			✓	Preservation Method: ice bags blue ice dry ice none other (describe) 8.1°C
4	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
5	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
6	Samples received within holding time?	✓			Sample IDs, tests affected:
7	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
8	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
9	Number of containers received match number indicated on COC?	✓			Sample IDs, containers affected:
10	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CL Date: 18MAR14

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 14MAR14
ACTWGT: 32.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO CHRIS CORNWELL
CAPE FEAR ANALYTICAL
3306 KITTY HAWK ROAD, SUITE 120

WILMINGTON NC 28405
(910) 795-0421
REF: WE991316W200

FedEx Express

TRK# 0201 5908 1776 7936

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO ILMA

28405
NC-US GSO

Part # 150148-434 RITZ 10/11

WO #

Subject: RE: CFA receipt 2014-3000 and 2014-3001
From: "Greene, Keith R" <kgreene@lanl.gov>
Date: 3/18/2014 4:10 PM
To: Cynde Larkins <cynde.larkins@cfanalytical.com>
CC: Valerie Davis <Valerie.Davis@cfanalytical.com>

proceed

-----Original Message-----
From: Cynde Larkins [mailto:cynde.larkins@cfanalytical.com]
Sent: Tuesday, March 18, 2014 2:03 PM
To: Greene, Keith R
Cc: Valerie Davis
Subject: CFA receipt 2014-3000 and 2014-3001

Keith,

The samples for 2014-3000 and 2014-3001 were received Saturday, March 15, 2014 out of temperature. They registered at 8.1° Celsius. Do you want us to proceed with extraction and analysis of these samples?

Thank you,

--
Cynde Larkins
Project Manager Assistant
Cape Fear Analytical
3306 Kitty Hawk Road
Suite 120
Wilmington, NC 28405
(910) 795-0421

How was your customer experience? Customer service is a high priority for us, so we listen to what our customers have to say! Thank you for taking time to email us your thoughts and opinions at feedback@cfanalytical.com

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PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Los Alamos National Laboratory (LANL)
SDG 2014-3000
Work Order 5898

Method/Analysis Information

Product:	**Method 1668A PCB Congeners in Solids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3540C
Analytical Batch Number:	25527, 25607
Clean Up Batch Number:	25526, 25606
Extraction Batch Number:	25525, 25605

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
5898001	CAWA-14-49277
5898002	CAWA-14-49278
5898003	CAWR-14-49293
5898004	CAWR-14-49294
12010061	Method Blank (MB)
12010062	Laboratory Control Sample (LCS)
12010063	Laboratory Control Sample Duplicate (LCSD)
12010145	Method Blank (MB)
12010146	Laboratory Control Sample (LCS)
12010147	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard. Any known exceptions are discussed in the narrative.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
Two surrogates recovered below the acceptance limits. All native analytes were within acceptance limits. 12010147 (LCSD)- Batch 25607.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Sample 5898004 (CAWR-14-49294)- Batch 25607 was re-extracted in order to confirm surrogate failures. All surrogate limits were met in the re-extracted run.

Miscellaneous Information

Nonconformance (NCR) Documentation

A NCR was not required for this SDG.

Manual Integrations

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	High-Resolution GC/MS System	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

LANL001 Los Alamos National Laboratory

Client SDG: 2014-3000 CFA Work Order: 5898

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
B	The target analyte was detected in the associated blank.
C	Congener has coeluters. When Cxxx, refer to congener number xxx for data
J	Value is estimated
U	Analyte was analyzed for , but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 11 APR 2014 **Title: Data Validator**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898001**	**Date Collected:**	**03/13/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**4.5**
Client ID:	**CAWA-14-49277**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 09:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.997	.997	pg/g	0.997	4.98
2051-61-8	PCB-2	U	.997	.997	pg/g	0.997	1.99
2051-62-9	PCB-3	U	.997	.997	pg/g	0.997	1.99
13029-08-8	PCB-4	U	.997	.997	pg/g	0.997	3.99
16605-91-7	PCB-5	U	.997	.997	pg/g	0.997	3.99
25569-80-6	PCB-6	U	.997	.997	pg/g	0.997	1.99
33284-50-3	PCB-7	U	.997	.997	pg/g	0.997	3.99
34883-43-7	PCB-8	U	.997	.997	pg/g	0.997	19.9
34883-39-1	PCB-9	U	.997	.997	pg/g	0.997	1.99
33146-45-1	PCB-10	U	.997	.997	pg/g	0.997	3.99
2050-67-1	PCB-11	BJ	3.09	2.54	pg/g	1.99	49.8
PCB-12/13	PCB-13/12	CU	.997	.997	pg/g	0.997	7.97
34883-41-5	PCB-14	U	.997	.997	pg/g	0.997	3.99
2050-68-2	PCB-15	U	.997	.997	pg/g	0.997	19.9
38444-78-9	PCB-16	U	.997	.997	pg/g	0.997	3.99
37680-66-3	PCB-17	U	.664	.664	pg/g	0.664	3.99
PCB-18/30	PCB-18/30	CU	1.33	1.33	pg/g	1.33	3.99
38444-73-4	PCB-19	U	.664	.664	pg/g	0.664	1.99
PCB-20/28	PCB-20/28	CJ	2.42	2.25	pg/g	1.33	19.9
PCB-21/33	PCB-21/33	CU	1.33	1.33	pg/g	1.33	7.97
38444-85-8	PCB-22	U	0.799	.664	pg/g	0.664	3.99
55720-44-0	PCB-23	U	.664	.664	pg/g	0.664	1.99
55702-45-9	PCB-24	U	.664	.664	pg/g	0.664	1.99
55712-37-3	PCB-25	U	.664	.664	pg/g	0.664	1.99
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	3.99
38444-76-7	PCB-27	U	.664	.664	pg/g	0.664	1.99
16606-02-3	PCB-31	J	2.40	2.25	pg/g	0.664	9.97
38444-77-8	PCB-32	U	.664	.664	pg/g	0.664	1.99
37680-68-5	PCB-34	U	.664	.664	pg/g	0.664	1.99
37680-69-6	PCB-35	U	.664	.664	pg/g	0.664	3.99
38444-87-0	PCB-36	U	.664	.664	pg/g	0.664	3.99
38444-90-5	PCB-37	U	0.839	.664	pg/g	0.664	19.9

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898001**	**Date Collected:**	**03/13/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**4.5**
Client ID:	**CAWA-14-49277**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 09:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	J	1.18	.94	pg/g	0.664	1.99
38444-88-1	PCB-39	U	.664	.664	pg/g	0.664	3.99
PCB-40/71	PCB-40/71	CU	1.33	1.33	pg/g	1.33	3.99
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	1.99
36559-22-5	PCB-42	U	.997	.997	pg/g	0.997	1.99
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	3.99
PCB-44/47/65	PCB-44/65/47	CJ	3.68	3.34	pg/g	3.33	5.98
PCB-45/51	PCB-45/51	CU	1.33	1.33	pg/g	1.33	3.99
41464-47-5	PCB-46	U	.664	.664	pg/g	0.664	1.99
70362-47-9	PCB-48	U	.664	.664	pg/g	0.664	1.99
PCB-49/69	PCB-69/49	CJ	2.07	1.76	pg/g	1.33	3.99
PCB-50/53	PCB-50/53	CU	1.33	1.33	pg/g	1.33	3.99
35693-99-3	PCB-52		4.67	4.33	pg/g	1.33	1.99
15968-05-5	PCB-54	U	.664	.664	pg/g	0.664	1.99
74338-24-2	PCB-55	U	.997	.997	pg/g	0.997	1.99
41464-43-1	PCB-56	J	2.35	1.85	pg/g	0.664	3.99
70424-67-8	PCB-57	U	.997	.997	pg/g	0.997	1.99
41464-49-7	PCB-58	U	.997	.997	pg/g	0.997	1.99
PCB-59/62/75	PCB-59/62/75	CU	1.99	1.99	pg/g	1.99	5.98
33025-41-1	PCB-60	U	1.09	.664	pg/g	0.664	3.99
PCB-61-76	PCB-61/76/70/74	C	9.19	8.99	pg/g	2.65	7.97
74472-34-7	PCB-63	U	.664	.664	pg/g	0.664	4.98
52663-58-8	PCB-64	J	1.45	1.09	pg/g	0.997	1.99
32598-10-0	PCB-66	J	4.00	3.81	pg/g	0.997	4.98
73575-53-8	PCB-67	U	.997	.997	pg/g	0.997	1.99
73575-52-7	PCB-68	U	.664	.664	pg/g	0.664	1.99
41464-42-0	PCB-72	U	.664	.664	pg/g	0.664	3.99
74338-23-1	PCB-73	U	.997	.997	pg/g	0.997	1.99
32598-13-3	PCB-77	U	.664	.664	pg/g	0.664	1.99
70362-49-1	PCB-78	U	.664	.664	pg/g	0.664	1.99
41464-48-6	PCB-79	U	.664	.664	pg/g	0.664	3.99
33284-52-5	PCB-80	U	.664	.664	pg/g	0.664	3.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898001**	**Date Collected:**	**03/13/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**4.5**
Client ID:	**CAWA-14-49277**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 09:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.664	.664	pg/g	0.664	1.99
52663-62-4	PCB-82	J	1.38	1.02	pg/g	0.997	4.98
60145-20-2	PCB-83	U	.997	.997	pg/g	0.997	1.99
52663-60-2	PCB-84		2.65	2.27	pg/g	0.997	1.99
PCB-85-117	PCB-117/116/85	CJ	2.53	2.23	pg/g	1.99	5.98
PCB-86-125	PCB-86/87/97/109/119/125	CJ	8.01	7.71	pg/g	3.99	12.0
PCB-88/91	PCB-88/91	CJ	1.76	1.39	pg/g	1.33	3.99
73575-57-2	PCB-89	U	.664	.664	pg/g	0.664	1.99
PCB-90-113	PCB-113/90/101	C	16.2	15.8	pg/g	1.99	5.98
52663-61-3	PCB-92		2.86	2.53	pg/g	0.997	1.99
PCB-93/100	PCB-93/100	CU	1.99	1.99	pg/g	1.99	3.99
73575-55-0	PCB-94	U	.664	.664	pg/g	0.664	1.99
38379-99-6	PCB-95		11.6	11.3	pg/g	1.33	3.99
73575-54-9	PCB-96	U	.664	.664	pg/g	0.664	1.99
PCB-98/102	PCB-102/98	CU	1.33	1.33	pg/g	1.33	3.99
38380-01-7	PCB-99		5.77	5.15	pg/g	1.33	1.99
60145-21-3	PCB-103	U	.664	.664	pg/g	0.664	4.98
56558-16-8	PCB-104	U	.664	.664	pg/g	0.664	1.99
32598-14-4	PCB-105		4.10	3.48	pg/g	0.997	1.99
70424-69-0	PCB-106	U	.997	.997	pg/g	0.997	1.99
70424-68-9	PCB-107	U	0.801	.664	pg/g	0.664	3.99
PCB-108/124	PCB-108/124	CU	1.33	1.33	pg/g	1.33	3.99
PCB-110/115	PCB-110/115	C	21.1	18.6	pg/g	2.65	3.99
39635-32-0	PCB-111	U	.664	.664	pg/g	0.664	1.99
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	1.99
74472-37-0	PCB-114	U	.664	.664	pg/g	0.664	1.99
31508-00-6	PCB-118		9.67	7.82	pg/g	1.33	3.99
68194-12-7	PCB-120	U	.664	.664	pg/g	0.664	1.99
56558-18-0	PCB-121	U	.664	.664	pg/g	0.664	1.99
76842-07-4	PCB-122	U	.664	.664	pg/g	0.664	6.90
65510-44-3	PCB-123	U	.664	.664	pg/g	0.664	1.99
57465-28-8	PCB-126	U	.664	.664	pg/g	0.664	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898001**	**Date Collected:**	**03/13/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**4.5**
Client ID:	**CAWA-14-49277**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 09:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.664	.664	pg/g	0.664	1.99
PCB-128/166	PCB-128/166	C	6.43	6.11	pg/g	1.33	3.99
PCB-129-163	PCB-138/163/129	C	69.4	69.1	pg/g	2.65	5.98
52663-66-8	PCB-130		2.93	2.57	pg/g	0.997	1.99
61798-70-7	PCB-131	U	.664	.664	pg/g	0.664	1.99
38380-05-1	PCB-132		17.1	15.9	pg/g	0.997	1.99
35694-04-3	PCB-133	U	0.739	.664	pg/g	0.664	1.99
52704-70-8	PCB-134	J	1.82	1.36	pg/g	1.33	1.99
PCB-135/151	PCB-151/135	C	18.4	18.1	pg/g	1.33	3.99
38411-22-2	PCB-136		4.52	4.3	pg/g	0.664	1.99
35694-06-5	PCB-137	U	1.41	1.33	pg/g	1.33	1.99
PCB-139/140	PCB-139/140	CU	1.33	1.33	pg/g	1.33	3.99
52712-04-6	PCB-141		11.6	11.2	pg/g	1.33	3.99
41411-61-4	PCB-142	U	.664	.664	pg/g	0.664	1.99
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	1.99
68194-14-9	PCB-144	J	2.05	1.75	pg/g	0.664	1.99
74472-40-5	PCB-145	U	.664	.664	pg/g	0.664	1.99
51908-16-8	PCB-146		8.48	7.96	pg/g	0.997	1.99
PCB-147/149	PCB-147/149	C	49.2	47.7	pg/g	1.99	7.97
74472-41-6	PCB-148	U	.664	.664	pg/g	0.664	1.99
68194-08-1	PCB-150	U	.997	.997	pg/g	0.997	1.99
68194-09-2	PCB-152	U	.664	.664	pg/g	0.664	1.99
PCB-153/168	PCB-153/168	C	59.7	59.4	pg/g	1.99	7.97
60145-22-4	PCB-154	U	.664	.664	pg/g	0.664	1.99
33979-03-2	PCB-155	U	.664	.664	pg/g	0.664	1.99
PCB-156/157	PCB-156/157	C	4.47	4.18	pg/g	1.33	3.99
74472-42-7	PCB-158		4.67	4.43	pg/g	0.664	1.99
39635-35-3	PCB-159	U	.664	.664	pg/g	0.664	1.99
41411-62-5	PCB-160	U	.664	.664	pg/g	0.664	1.99
74472-43-8	PCB-161	U	.997	.997	pg/g	0.997	1.99
39635-34-2	PCB-162	U	.997	.997	pg/g	0.997	1.99
74472-45-0	PCB-164		4.74	4.48	pg/g	0.664	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898001**	**Date Collected:**	**03/13/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**4.5**
Client ID:	**CAWA-14-49277**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 09:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.664	.664	pg/g	0.664	1.99
52663-72-6	PCB-167		2.54	2.29	pg/g	0.664	1.99
32774-16-6	PCB-169	U	.997	.997	pg/g	0.997	1.99
35065-30-6	PCB-170		28.7	28.2	pg/g	0.664	1.99
PCB-171/173	PCB-173/171	C	6.86	6.56	pg/g	1.33	3.99
52663-74-8	PCB-172		4.77	4.46	pg/g	0.997	1.99
38411-25-5	PCB-174		27.2	26.9	pg/g	1.33	1.99
40186-70-7	PCB-175	U	.997	.997	pg/g	0.997	1.99
52663-65-7	PCB-176		2.22	2.02	pg/g	0.664	1.99
52663-70-4	PCB-177		17.3	17	pg/g	0.997	1.99
52663-67-9	PCB-178		5.61	5.34	pg/g	1.33	1.99
52663-64-6	PCB-179		8.76	8.57	pg/g	0.664	1.99
PCB-180/193	PCB-193/180	CU	1.99	1.99	pg/g	1.99	3.99
74472-47-2	PCB-181	U	.997	.997	pg/g	0.997	1.99
60145-23-5	PCB-182	U	.664	.664	pg/g	0.664	1.99
PCB-183/185	PCB-183/185	C	12.7	12.4	pg/g	1.33	3.99
74472-48-3	PCB-184	U	.664	.664	pg/g	0.664	1.99
74472-49-4	PCB-186	U	.664	.664	pg/g	0.664	1.99
52663-68-0	PCB-187		34.1	33.6	pg/g	0.997	1.99
74487-85-7	PCB-188	U	.664	.664	pg/g	0.664	1.99
39635-31-9	PCB-189	J	1.15	.897	pg/g	0.664	1.99
41411-64-7	PCB-190		6.13	5.91	pg/g	0.997	1.99
74472-50-7	PCB-191	J	1.00	.778	pg/g	0.664	1.99
74472-51-8	PCB-192	U	.664	.664	pg/g	0.664	1.99
35694-08-7	PCB-194		13.7	13.3	pg/g	0.664	1.99
52663-78-2	PCB-195		6.17	5.89	pg/g	0.997	1.99
42740-50-1	PCB-196		5.63	5.33	pg/g	0.664	1.99
PCB-197/200	PCB-197/200	CJ	1.72	1.46	pg/g	1.33	3.99
PCB-198/199	PCB-198/199	C	14.7	14.4	pg/g	1.33	3.99
40186-71-8	PCB-201	J	1.17	.936	pg/g	0.664	1.99
2136-99-4	PCB-202		2.35	2.06	pg/g	0.997	1.99
52663-76-0	PCB-203		8.67	8.27	pg/g	1.33	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898001**	**Date Collected:**	**03/13/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**4.5**
Client ID:	**CAWA-14-49277**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 09:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.997	.997	pg/g	0.997	1.99
74472-53-0	PCB-205	U	0.789	.664	pg/g	0.664	1.99
40186-72-9	PCB-206		3.79	3.38	pg/g	0.997	1.99
52663-79-3	PCB-207	U	.664	.664	pg/g	0.664	1.99
52663-77-1	PCB-208	J	1.11	.788	pg/g	0.664	1.99
2051-24-3	PCB-209		2.37	2.02	pg/g	0.664	1.99
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs		7.63	5.44	pg/g		
26914-33-0	Total Tetra PCBs		28.5	25.2	pg/g		
25429-29-2	Total Penta PCBs		88.3	79.3	pg/g		
26601-64-9	Total Hexa PCBs		270	261	pg/g		
28655-71-2	Total Hepta PCBs		156	153	pg/g		
55722-26-4	Total Octa PCBs		54.9	51.7	pg/g		
53742-07-7	Total Nona PCBs		4.90	4.17	pg/g		
DECACB(Tot)	Total Deca PCB		2.37	2.02	pg/g		
1336-36-3	Total PCB Congeners		613	581	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		118	199	pg/g	59.2	(15%-150%)
13C-3-MoCB		130	199	pg/g	65.4	(15%-150%)
13C-4-DiCB		141	199	pg/g	70.9	(25%-150%)
13C-15-DiCB		161	199	pg/g	80.8	(25%-150%)
13C-19-TrCB		151	199	pg/g	75.7	(25%-150%)
13C-37-TrCB		181	199	pg/g	91.0	(25%-150%)
13C-54-TeCB		180	199	pg/g	90.2	(25%-150%)
13C-77-TeCB		218	199	pg/g	109	(25%-150%)
13C-81-TeCB		213	199	pg/g	107	(25%-150%)
13C-104-PeCB		190	199	pg/g	95.6	(25%-150%)
13C-105-PeCB		191	199	pg/g	95.8	(25%-150%)
13C-114-PeCB		184	199	pg/g	92.5	(25%-150%)
13C-118-PeCB		197	199	pg/g	98.9	(25%-150%)
13C-123-PeCB		205	199	pg/g	103	(25%-150%)
13C-126-PeCB		206	199	pg/g	103	(25%-150%)
13C-155-HxCB		176	199	pg/g	88.3	(25%-150%)
13C-156-HxCB	C	380	399	pg/g	95.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		178	199	pg/g	89.5	(25%-150%)
13C-169-HxCB		226	199	pg/g	113	(25%-150%)
13C-188-HpCB		118	199	pg/g	59.4	(25%-150%)
13C-189-HpCB		158	199	pg/g	79.2	(25%-150%)
13C-202-OcCB		129	199	pg/g	64.5	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898001**	**Date Collected:**	**03/13/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**4.5**
Client ID:	**CAWA-14-49277**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 09:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-6**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		201	199	pg/g	101	(25%-150%)
13C-206-NoCB		185	199	pg/g	92.7	(25%-150%)
13C-208-NoCB		171	199	pg/g	85.6	(25%-150%)
13C-209-DeCB		184	199	pg/g	92.3	(25%-150%)
13C-28-TrCB		180	199	pg/g	90.2	(30%-135%)
13C-111-PeCB		207	199	pg/g	104	(30%-135%)
13C-178-HpCB		190	199	pg/g	95.2	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898002**	**Date Collected:**	**03/13/2014 12:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**5.4**
Client ID:	**CAWA-14-49278**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 10:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.99 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.962	.962	pg/g	0.962	4.81
2051-61-8	PCB-2	U	.962	.962	pg/g	0.962	1.92
2051-62-9	PCB-3	U	.962	.962	pg/g	0.962	1.92
13029-08-8	PCB-4	U	.962	.962	pg/g	0.962	3.85
16605-91-7	PCB-5	U	.962	.962	pg/g	0.962	3.85
25569-80-6	PCB-6	U	.962	.962	pg/g	0.962	1.92
33284-50-3	PCB-7	U	.962	.962	pg/g	0.962	3.85
34883-43-7	PCB-8	U	.962	.962	pg/g	0.962	19.2
34883-39-1	PCB-9	U	.962	.962	pg/g	0.962	1.92
33146-45-1	PCB-10	U	.962	.962	pg/g	0.962	3.85
2050-67-1	PCB-11	BJ	2.95	2.4	pg/g	1.92	48.1
PCB-12/13	PCB-13/12	CU	.962	.962	pg/g	0.962	7.69
34883-41-5	PCB-14	U	.962	.962	pg/g	0.962	3.85
2050-68-2	PCB-15	U	.962	.962	pg/g	0.962	19.2
38444-78-9	PCB-16	U	.962	.962	pg/g	0.962	3.85
37680-66-3	PCB-17	U	.64	.64	pg/g	0.640	3.85
PCB-18/30	PCB-18/30	CU	1.28	1.28	pg/g	1.28	3.85
38444-73-4	PCB-19	U	.64	.64	pg/g	0.640	1.92
PCB-20/28	PCB-20/28	CU	1.28	1.28	pg/g	1.28	19.2
PCB-21/33	PCB-21/33	CU	1.28	1.28	pg/g	1.28	7.69
38444-85-8	PCB-22	U	.64	.64	pg/g	0.640	3.85
55720-44-0	PCB-23	U	.64	.64	pg/g	0.640	1.92
55702-45-9	PCB-24	U	.64	.64	pg/g	0.640	1.92
55712-37-3	PCB-25	U	.64	.64	pg/g	0.640	1.92
PCB-26/29	PCB-26/29	CU	1.28	1.28	pg/g	1.28	3.85
38444-76-7	PCB-27	U	.64	.64	pg/g	0.640	1.92
16606-02-3	PCB-31	J	0.798	.652	pg/g	0.640	9.62
38444-77-8	PCB-32	U	.64	.64	pg/g	0.640	1.92
37680-68-5	PCB-34	U	.64	.64	pg/g	0.640	1.92
37680-69-6	PCB-35	U	.64	.64	pg/g	0.640	3.85
38444-87-0	PCB-36	U	.64	.64	pg/g	0.640	3.85
38444-90-5	PCB-37	U	.64	.64	pg/g	0.640	19.2

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898002**	**Date Collected:**	**03/13/2014 12:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**5.4**
Client ID:	**CAWA-14-49278**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 10:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.99 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	J	2.09	1.85	pg/g	0.640	1.92
38444-88-1	PCB-39	U	.64	.64	pg/g	0.640	3.85
PCB-40/71	PCB-40/71	CU	1.28	1.28	pg/g	1.28	3.85
52663-59-9	PCB-41	U	1.28	1.28	pg/g	1.28	1.92
36559-22-5	PCB-42	U	.962	.962	pg/g	0.962	1.92
70362-46-8	PCB-43	U	1.28	1.28	pg/g	1.28	3.85
PCB-44/47/65	PCB-44/65/47	CU	3.21	3.21	pg/g	3.21	5.77
PCB-45/51	PCB-45/51	CU	1.28	1.28	pg/g	1.28	3.85
41464-47-5	PCB-46	U	.64	.64	pg/g	0.640	1.92
70362-47-9	PCB-48	U	.64	.64	pg/g	0.640	1.92
PCB-49/69	PCB-69/49	CU	1.28	1.28	pg/g	1.28	3.85
PCB-50/53	PCB-50/53	CU	1.28	1.28	pg/g	1.28	3.85
35693-99-3	PCB-52	U	1.44	1.28	pg/g	1.28	1.92
15968-05-5	PCB-54	U	.64	.64	pg/g	0.640	1.92
74338-24-2	PCB-55	U	.962	.962	pg/g	0.962	1.92
41464-43-1	PCB-56	U	0.687	.64	pg/g	0.640	3.85
70424-67-8	PCB-57	U	.962	.962	pg/g	0.962	1.92
41464-49-7	PCB-58	U	.962	.962	pg/g	0.962	1.92
PCB-59/62/75	PCB-59/62/75	CU	1.92	1.92	pg/g	1.92	5.77
33025-41-1	PCB-60	U	.64	.64	pg/g	0.640	3.85
PCB-61-76	PCB-61/76/70/74	CU	2.56	2.56	pg/g	2.56	7.69
74472-34-7	PCB-63	U	.64	.64	pg/g	0.640	4.81
52663-58-8	PCB-64	U	.962	.962	pg/g	0.962	1.92
32598-10-0	PCB-66	U	1.09	.962	pg/g	0.962	4.81
73575-53-8	PCB-67	U	.962	.962	pg/g	0.962	1.92
73575-52-7	PCB-68	U	.64	.64	pg/g	0.640	1.92
41464-42-0	PCB-72	U	.64	.64	pg/g	0.640	3.85
74338-23-1	PCB-73	U	.962	.962	pg/g	0.962	1.92
32598-13-3	PCB-77	U	.64	.64	pg/g	0.640	1.92
70362-49-1	PCB-78	U	.64	.64	pg/g	0.640	1.92
41464-48-6	PCB-79	U	.64	.64	pg/g	0.640	3.85
33284-52-5	PCB-80	U	.64	.64	pg/g	0.640	3.85

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898002**	**Date Collected:**	**03/13/2014 12:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**5.4**
Client ID:	**CAWA-14-49278**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 10:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.99 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.64	.64	pg/g	0.640	1.92
52663-62-4	PCB-82	U	.962	.962	pg/g	0.962	4.81
60145-20-2	PCB-83	U	.962	.962	pg/g	0.962	1.92
52663-60-2	PCB-84	U	.962	.962	pg/g	0.962	1.92
PCB-85-117	PCB-117/116/85	CU	1.92	1.92	pg/g	1.92	5.77
PCB-86-125	PCB-86/87/97/109/119/125	CU	3.85	3.85	pg/g	3.85	11.5
PCB-88/91	PCB-88/91	CU	1.28	1.28	pg/g	1.28	3.85
73575-57-2	PCB-89	U	.64	.64	pg/g	0.640	1.92
PCB-90-113	PCB-113/90/101	CJ	3.29	2.98	pg/g	1.92	5.77
52663-61-3	PCB-92	U	.962	.962	pg/g	0.962	1.92
PCB-93/100	PCB-93/100	CU	1.92	1.92	pg/g	1.92	3.85
73575-55-0	PCB-94	U	.64	.64	pg/g	0.640	1.92
38379-99-6	PCB-95	J	2.16	1.84	pg/g	1.28	3.85
73575-54-9	PCB-96	U	.64	.64	pg/g	0.640	1.92
PCB-98/102	PCB-102/98	CU	1.28	1.28	pg/g	1.28	3.85
38380-01-7	PCB-99	U	1.78	1.28	pg/g	1.28	1.92
60145-21-3	PCB-103	U	.64	.64	pg/g	0.640	4.81
56558-16-8	PCB-104	U	.64	.64	pg/g	0.640	1.92
32598-14-4	PCB-105	U	1.24	.962	pg/g	0.962	1.92
70424-69-0	PCB-106	U	.962	.962	pg/g	0.962	1.92
70424-68-9	PCB-107	U	.64	.64	pg/g	0.640	3.85
PCB-108/124	PCB-108/124	CU	1.28	1.28	pg/g	1.28	3.85
PCB-110/115	PCB-110/115	CJ	5.96	3.54	pg/g	2.56	3.85
39635-32-0	PCB-111	U	.64	.64	pg/g	0.640	1.92
74472-36-9	PCB-112	U	1.28	1.28	pg/g	1.28	1.92
74472-37-0	PCB-114	U	.64	.64	pg/g	0.640	1.92
31508-00-6	PCB-118	U	2.98	1.28	pg/g	1.28	3.85
68194-12-7	PCB-120	U	.64	.64	pg/g	0.640	1.92
56558-18-0	PCB-121	U	.64	.64	pg/g	0.640	1.92
76842-07-4	PCB-122	U	.64	.64	pg/g	0.640	6.65
65510-44-3	PCB-123	U	.64	.64	pg/g	0.640	1.92
57465-28-8	PCB-126	U	.64	.64	pg/g	0.640	1.92

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898002**	**Date Collected:**	**03/13/2014 12:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**5.4**
Client ID:	**CAWA-14-49278**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 10:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.99 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.64	.64	pg/g	0.640	1.92
PCB-128/166	PCB-128/166	CJ	1.71	1.4	pg/g	1.28	3.85
PCB-129-163	PCB-138/163/129	C	14.6	14.3	pg/g	2.56	5.77
52663-66-8	PCB-130	U	.962	.962	pg/g	0.962	1.92
61798-70-7	PCB-131	U	.64	.64	pg/g	0.640	1.92
38380-05-1	PCB-132		3.64	2.46	pg/g	0.962	1.92
35694-04-3	PCB-133	U	.64	.64	pg/g	0.640	1.92
52704-70-8	PCB-134	U	1.28	1.28	pg/g	1.28	1.92
PCB-135/151	PCB-151/135	CJ	3.46	3.12	pg/g	1.28	3.85
38411-22-2	PCB-136	J	0.965	.742	pg/g	0.640	1.92
35694-06-5	PCB-137	U	1.28	1.28	pg/g	1.28	1.92
PCB-139/140	PCB-139/140	CU	1.28	1.28	pg/g	1.28	3.85
52712-04-6	PCB-141	J	2.03	1.7	pg/g	1.28	3.85
41411-61-4	PCB-142	U	.64	.64	pg/g	0.640	1.92
68194-15-0	PCB-143	U	1.28	1.28	pg/g	1.28	1.92
68194-14-9	PCB-144	U	.64	.64	pg/g	0.640	1.92
74472-40-5	PCB-145	U	.64	.64	pg/g	0.640	1.92
51908-16-8	PCB-146	J	1.98	1.46	pg/g	0.962	1.92
PCB-147/149	PCB-147/149	C	10.6	9.1	pg/g	1.92	7.69
74472-41-6	PCB-148	U	.64	.64	pg/g	0.640	1.92
68194-08-1	PCB-150	U	.962	.962	pg/g	0.962	1.92
68194-09-2	PCB-152	U	.64	.64	pg/g	0.640	1.92
PCB-153/168	PCB-153/168	C	11.8	11.5	pg/g	1.92	7.69
60145-22-4	PCB-154	U	.64	.64	pg/g	0.640	1.92
33979-03-2	PCB-155	U	.64	.64	pg/g	0.640	1.92
PCB-156/157	PCB-156/157	CU	1.28	1.28	pg/g	1.28	3.85
74472-42-7	PCB-158	J	1.13	.882	pg/g	0.640	1.92
39635-35-3	PCB-159	U	.64	.64	pg/g	0.640	1.92
41411-62-5	PCB-160	U	.64	.64	pg/g	0.640	1.92
74472-43-8	PCB-161	U	.962	.962	pg/g	0.962	1.92
39635-34-2	PCB-162	U	.962	.962	pg/g	0.962	1.92
74472-45-0	PCB-164	J	1.19	.934	pg/g	0.640	1.92

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898002**	**Date Collected:**	**03/13/2014 12:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**5.4**
Client ID:	**CAWA-14-49278**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 10:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.99 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.64	.64	pg/g	0.640	1.92
52663-72-6	PCB-167	U	.64	.64	pg/g	0.640	1.92
32774-16-6	PCB-169	U	.962	.962	pg/g	0.962	1.92
35065-30-6	PCB-170		6.59	6.12	pg/g	0.640	1.92
PCB-171/173	PCB-173/171	CJ	1.66	1.36	pg/g	1.28	3.85
52663-74-8	PCB-172	U	1.16	.962	pg/g	0.962	1.92
38411-25-5	PCB-174		6.24	5.94	pg/g	1.28	1.92
40186-70-7	PCB-175	U	.962	.962	pg/g	0.962	1.92
52663-65-7	PCB-176	U	.64	.64	pg/g	0.640	1.92
52663-70-4	PCB-177		4.08	3.78	pg/g	0.962	1.92
52663-67-9	PCB-178	U	1.33	1.28	pg/g	1.28	1.92
52663-64-6	PCB-179		2.19	1.99	pg/g	0.640	1.92
PCB-180/193	PCB-193/180	CU	1.92	1.92	pg/g	1.92	3.85
74472-47-2	PCB-181	U	.962	.962	pg/g	0.962	1.92
60145-23-5	PCB-182	U	.64	.64	pg/g	0.640	1.92
PCB-183/185	PCB-183/185	CJ	3.03	2.73	pg/g	1.28	3.85
74472-48-3	PCB-184	U	.64	.64	pg/g	0.640	1.92
74472-49-4	PCB-186	U	.64	.64	pg/g	0.640	1.92
52663-68-0	PCB-187		8.32	7.83	pg/g	0.962	1.92
74487-85-7	PCB-188	U	.64	.64	pg/g	0.640	1.92
39635-31-9	PCB-189	U	.64	.64	pg/g	0.640	1.92
41411-64-7	PCB-190	J	1.42	1.19	pg/g	0.962	1.92
74472-50-7	PCB-191	U	.64	.64	pg/g	0.640	1.92
74472-51-8	PCB-192	U	.64	.64	pg/g	0.640	1.92
35694-08-7	PCB-194		3.75	3.42	pg/g	0.640	1.92
52663-78-2	PCB-195	J	1.57	1.3	pg/g	0.962	1.92
42740-50-1	PCB-196	J	1.56	1.26	pg/g	0.640	1.92
PCB-197/200	PCB-197/200	CU	1.28	1.28	pg/g	1.28	3.85
PCB-198/199	PCB-198/199	CJ	4.14	3.8	pg/g	1.28	3.85
40186-71-8	PCB-201	U	.64	.64	pg/g	0.640	1.92
2136-99-4	PCB-202	U	.962	.962	pg/g	0.962	1.92
52663-76-0	PCB-203		2.59	2.2	pg/g	1.28	1.92

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898002**	**Date Collected:**	**03/13/2014 12:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**5.4**
Client ID:	**CAWA-14-49278**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 10:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.99 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.962	.962	pg/g	0.962	1.92
74472-53-0	PCB-205	U	.64	.64	pg/g	0.640	1.92
40186-72-9	PCB-206	U	1.26	.962	pg/g	0.962	1.92
52663-79-3	PCB-207	U	.64	.64	pg/g	0.640	1.92
52663-77-1	PCB-208	U	.64	.64	pg/g	0.640	1.92
2051-24-3	PCB-209	U	0.964	.64	pg/g	0.640	1.92
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs		2.89	2.5	pg/g		
26914-33-0	Total Tetra PCBs	U	3.22	0	pg/g		
25429-29-2	Total Penta PCBs		17.4	8.36	pg/g		
26601-64-9	Total Hexa PCBs		53.0	47.5	pg/g		
28655-71-2	Total Hepta PCBs		36.0	30.9	pg/g		
55722-26-4	Total Octa PCBs		13.6	12	pg/g		
53742-07-7	Total Nona PCBs	U	1.26	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0.964	0	pg/g		
1336-36-3	Total PCB Congeners		128	101	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		95.4	192	pg/g	49.6	(15%-150%)
13C-3-MoCB		121	192	pg/g	63.0	(15%-150%)
13C-4-DiCB		123	192	pg/g	63.7	(25%-150%)
13C-15-DiCB		150	192	pg/g	78.0	(25%-150%)
13C-19-TrCB		138	192	pg/g	71.5	(25%-150%)
13C-37-TrCB		168	192	pg/g	87.2	(25%-150%)
13C-54-TeCB		155	192	pg/g	80.5	(25%-150%)
13C-77-TeCB		197	192	pg/g	103	(25%-150%)
13C-81-TeCB		193	192	pg/g	100	(25%-150%)
13C-104-PeCB		177	192	pg/g	92.1	(25%-150%)
13C-105-PeCB		172	192	pg/g	89.4	(25%-150%)
13C-114-PeCB		165	192	pg/g	86.0	(25%-150%)
13C-118-PeCB		174	192	pg/g	90.3	(25%-150%)
13C-123-PeCB		181	192	pg/g	94.0	(25%-150%)
13C-126-PeCB		186	192	pg/g	96.9	(25%-150%)
13C-155-HxCB		163	192	pg/g	84.6	(25%-150%)
13C-156-HxCB	C	350	385	pg/g	91.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		165	192	pg/g	85.7	(25%-150%)
13C-169-HxCB		211	192	pg/g	110	(25%-150%)
13C-188-HpCB		105	192	pg/g	54.6	(25%-150%)
13C-189-HpCB		140	192	pg/g	73.0	(25%-150%)
13C-202-OcCB		111	192	pg/g	57.9	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898002**	**Date Collected:**	**03/13/2014 12:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**5.4**
Client ID:	**CAWA-14-49278**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 10:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-7**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10.99 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		184	192	pg/g	95.6	(25%-150%)
13C-206-NoCB		163	192	pg/g	84.7	(25%-150%)
13C-208-NoCB		152	192	pg/g	79.2	(25%-150%)
13C-209-DeCB		166	192	pg/g	86.4	(25%-150%)
13C-28-TrCB		171	192	pg/g	89.0	(30%-135%)
13C-111-PeCB		192	192	pg/g	99.8	(30%-135%)
13C-178-HpCB		185	192	pg/g	96.0	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898003**	**Date Collected:**	**03/13/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**26.4**
Client ID:	**CAWR-14-49293**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 11:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**13.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.989	.989	pg/g	0.989	4.94
2051-61-8	PCB-2	U	.989	.989	pg/g	0.989	1.98
2051-62-9	PCB-3	U	.989	.989	pg/g	0.989	1.98
13029-08-8	PCB-4	U	.989	.989	pg/g	0.989	3.96
16605-91-7	PCB-5	U	.989	.989	pg/g	0.989	3.96
25569-80-6	PCB-6	U	.989	.989	pg/g	0.989	1.98
33284-50-3	PCB-7	U	.989	.989	pg/g	0.989	3.96
34883-43-7	PCB-8	U	.989	.989	pg/g	0.989	19.8
34883-39-1	PCB-9	U	.989	.989	pg/g	0.989	1.98
33146-45-1	PCB-10	U	.989	.989	pg/g	0.989	3.96
2050-67-1	PCB-11	BJ	4.35	3.79	pg/g	1.98	49.4
PCB-12/13	PCB-13/12	CU	.989	.989	pg/g	0.989	7.91
34883-41-5	PCB-14	U	.989	.989	pg/g	0.989	3.96
2050-68-2	PCB-15	U	.989	.989	pg/g	0.989	19.8
38444-78-9	PCB-16	U	.989	.989	pg/g	0.989	3.96
37680-66-3	PCB-17	U	.659	.659	pg/g	0.659	3.96
PCB-18/30	PCB-18/30	CU	1.32	1.32	pg/g	1.32	3.96
38444-73-4	PCB-19	U	.659	.659	pg/g	0.659	1.98
PCB-20/28	PCB-20/28	CU	1.32	1.32	pg/g	1.32	19.8
PCB-21/33	PCB-21/33	CU	1.32	1.32	pg/g	1.32	7.91
38444-85-8	PCB-22	U	.659	.659	pg/g	0.659	3.96
55720-44-0	PCB-23	U	.659	.659	pg/g	0.659	1.98
55702-45-9	PCB-24	U	.659	.659	pg/g	0.659	1.98
55712-37-3	PCB-25	U	.659	.659	pg/g	0.659	1.98
PCB-26/29	PCB-26/29	CU	1.32	1.32	pg/g	1.32	3.96
38444-76-7	PCB-27	U	.659	.659	pg/g	0.659	1.98
16606-02-3	PCB-31	U	.659	.659	pg/g	0.659	9.89
38444-77-8	PCB-32	U	.659	.659	pg/g	0.659	1.98
37680-68-5	PCB-34	U	.659	.659	pg/g	0.659	1.98
37680-69-6	PCB-35	U	.659	.659	pg/g	0.659	3.96
38444-87-0	PCB-36	U	.659	.659	pg/g	0.659	3.96
38444-90-5	PCB-37	U	.659	.659	pg/g	0.659	19.8

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898003**	**Date Collected:**	**03/13/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**26.4**
Client ID:	**CAWR-14-49293**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 11:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**13.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.659	.659	pg/g	0.659	1.98
38444-88-1	PCB-39	U	.659	.659	pg/g	0.659	3.96
PCB-40/71	PCB-40/71	CU	1.32	1.32	pg/g	1.32	3.96
52663-59-9	PCB-41	U	1.32	1.32	pg/g	1.32	1.98
36559-22-5	PCB-42	U	.989	.989	pg/g	0.989	1.98
70362-46-8	PCB-43	U	1.32	1.32	pg/g	1.32	3.96
PCB-44/47/65	PCB-44/65/47	CU	3.3	3.3	pg/g	3.30	5.93
PCB-45/51	PCB-45/51	CU	1.32	1.32	pg/g	1.32	3.96
41464-47-5	PCB-46	U	.659	.659	pg/g	0.659	1.98
70362-47-9	PCB-48	U	.659	.659	pg/g	0.659	1.98
PCB-49/69	PCB-69/49	CU	1.32	1.32	pg/g	1.32	3.96
PCB-50/53	PCB-50/53	CU	1.32	1.32	pg/g	1.32	3.96
35693-99-3	PCB-52	U	1.32	1.32	pg/g	1.32	1.98
15968-05-5	PCB-54	U	.659	.659	pg/g	0.659	1.98
74338-24-2	PCB-55	U	.989	.989	pg/g	0.989	1.98
41464-43-1	PCB-56	U	.659	.659	pg/g	0.659	3.96
70424-67-8	PCB-57	U	.989	.989	pg/g	0.989	1.98
41464-49-7	PCB-58	U	.989	.989	pg/g	0.989	1.98
PCB-59/62/75	PCB-59/62/75	CU	1.98	1.98	pg/g	1.98	5.93
33025-41-1	PCB-60	U	.659	.659	pg/g	0.659	3.96
PCB-61-76	PCB-61/76/70/74	CU	2.63	2.63	pg/g	2.63	7.91
74472-34-7	PCB-63	U	.659	.659	pg/g	0.659	4.94
52663-58-8	PCB-64	U	.989	.989	pg/g	0.989	1.98
32598-10-0	PCB-66	U	.989	.989	pg/g	0.989	4.94
73575-53-8	PCB-67	U	.989	.989	pg/g	0.989	1.98
73575-52-7	PCB-68	U	.659	.659	pg/g	0.659	1.98
41464-42-0	PCB-72	U	.659	.659	pg/g	0.659	3.96
74338-23-1	PCB-73	U	.989	.989	pg/g	0.989	1.98
32598-13-3	PCB-77	U	.659	.659	pg/g	0.659	1.98
70362-49-1	PCB-78	U	.659	.659	pg/g	0.659	1.98
41464-48-6	PCB-79	U	.659	.659	pg/g	0.659	3.96
33284-52-5	PCB-80	U	.659	.659	pg/g	0.659	3.96

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898003**	**Date Collected:**	**03/13/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**26.4**
Client ID:	**CAWR-14-49293**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 11:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**13.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.659	.659	pg/g	0.659	1.98
52663-62-4	PCB-82	U	.989	.989	pg/g	0.989	4.94
60145-20-2	PCB-83	U	.989	.989	pg/g	0.989	1.98
52663-60-2	PCB-84	U	.989	.989	pg/g	0.989	1.98
PCB-85-117	PCB-117/116/85	CU	1.98	1.98	pg/g	1.98	5.93
PCB-86-125	PCB-86/87/97/109/119/125	CU	3.96	3.96	pg/g	3.96	11.9
PCB-88/91	PCB-88/91	CU	1.32	1.32	pg/g	1.32	3.96
73575-57-2	PCB-89	U	.659	.659	pg/g	0.659	1.98
PCB-90-113	PCB-113/90/101	CU	1.98	1.98	pg/g	1.98	5.93
52663-61-3	PCB-92	U	.989	.989	pg/g	0.989	1.98
PCB-93/100	PCB-93/100	CU	1.98	1.98	pg/g	1.98	3.96
73575-55-0	PCB-94	U	.659	.659	pg/g	0.659	1.98
38379-99-6	PCB-95	U	1.32	1.32	pg/g	1.32	3.96
73575-54-9	PCB-96	U	.659	.659	pg/g	0.659	1.98
PCB-98/102	PCB-102/98	CU	1.32	1.32	pg/g	1.32	3.96
38380-01-7	PCB-99	U	1.32	1.32	pg/g	1.32	1.98
60145-21-3	PCB-103	U	.659	.659	pg/g	0.659	4.94
56558-16-8	PCB-104	U	.659	.659	pg/g	0.659	1.98
32598-14-4	PCB-105	U	.989	.989	pg/g	0.989	1.98
70424-69-0	PCB-106	U	.989	.989	pg/g	0.989	1.98
70424-68-9	PCB-107	U	.659	.659	pg/g	0.659	3.96
PCB-108/124	PCB-108/124	CU	1.32	1.32	pg/g	1.32	3.96
PCB-110/115	PCB-110/115	CU	2.63	2.63	pg/g	2.63	3.96
39635-32-0	PCB-111	U	.659	.659	pg/g	0.659	1.98
74472-36-9	PCB-112	U	1.32	1.32	pg/g	1.32	1.98
74472-37-0	PCB-114	U	.659	.659	pg/g	0.659	1.98
31508-00-6	PCB-118	U	1.32	1.32	pg/g	1.32	3.96
68194-12-7	PCB-120	U	.659	.659	pg/g	0.659	1.98
56558-18-0	PCB-121	U	.659	.659	pg/g	0.659	1.98
76842-07-4	PCB-122	U	.659	.659	pg/g	0.659	6.84
65510-44-3	PCB-123	U	.659	.659	pg/g	0.659	1.98
57465-28-8	PCB-126	U	.659	.659	pg/g	0.659	1.98

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898003**	**Date Collected:**	**03/13/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**26.4**
Client ID:	**CAWR-14-49293**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 11:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**13.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.659	.659	pg/g	0.659	1.98
PCB-128/166	PCB-128/166	CU	1.32	1.32	pg/g	1.32	3.96
PCB-129-163	PCB-138/163/129	CU	2.63	2.63	pg/g	2.63	5.93
52663-66-8	PCB-130	U	.989	.989	pg/g	0.989	1.98
61798-70-7	PCB-131	U	.659	.659	pg/g	0.659	1.98
38380-05-1	PCB-132	U	.989	.989	pg/g	0.989	1.98
35694-04-3	PCB-133	U	.659	.659	pg/g	0.659	1.98
52704-70-8	PCB-134	U	1.32	1.32	pg/g	1.32	1.98
PCB-135/151	PCB-151/135	CU	1.32	1.32	pg/g	1.32	3.96
38411-22-2	PCB-136	U	.659	.659	pg/g	0.659	1.98
35694-06-5	PCB-137	U	1.32	1.32	pg/g	1.32	1.98
PCB-139/140	PCB-139/140	CU	1.32	1.32	pg/g	1.32	3.96
52712-04-6	PCB-141	U	1.32	1.32	pg/g	1.32	3.96
41411-61-4	PCB-142	U	.659	.659	pg/g	0.659	1.98
68194-15-0	PCB-143	U	1.32	1.32	pg/g	1.32	1.98
68194-14-9	PCB-144	U	.659	.659	pg/g	0.659	1.98
74472-40-5	PCB-145	U	.659	.659	pg/g	0.659	1.98
51908-16-8	PCB-146	U	.989	.989	pg/g	0.989	1.98
PCB-147/149	PCB-147/149	CU	1.98	1.98	pg/g	1.98	7.91
74472-41-6	PCB-148	U	.659	.659	pg/g	0.659	1.98
68194-08-1	PCB-150	U	.989	.989	pg/g	0.989	1.98
68194-09-2	PCB-152	U	.659	.659	pg/g	0.659	1.98
PCB-153/168	PCB-153/168	CU	1.98	1.98	pg/g	1.98	7.91
60145-22-4	PCB-154	U	.659	.659	pg/g	0.659	1.98
33979-03-2	PCB-155	U	.659	.659	pg/g	0.659	1.98
PCB-156/157	PCB-156/157	CU	1.32	1.32	pg/g	1.32	3.96
74472-42-7	PCB-158	U	.659	.659	pg/g	0.659	1.98
39635-35-3	PCB-159	U	.659	.659	pg/g	0.659	1.98
41411-62-5	PCB-160	U	.659	.659	pg/g	0.659	1.98
74472-43-8	PCB-161	U	.989	.989	pg/g	0.989	1.98
39635-34-2	PCB-162	U	.989	.989	pg/g	0.989	1.98
74472-45-0	PCB-164	U	.659	.659	pg/g	0.659	1.98

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898003**	**Date Collected:**	**03/13/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**26.4**
Client ID:	**CAWR-14-49293**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 11:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**13.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.659	.659	pg/g	0.659	1.98
52663-72-6	PCB-167	U	.659	.659	pg/g	0.659	1.98
32774-16-6	PCB-169	U	.989	.989	pg/g	0.989	1.98
35065-30-6	PCB-170	U	.659	.659	pg/g	0.659	1.98
PCB-171/173	PCB-173/171	CU	1.32	1.32	pg/g	1.32	3.96
52663-74-8	PCB-172	U	.989	.989	pg/g	0.989	1.98
38411-25-5	PCB-174	U	1.32	1.32	pg/g	1.32	1.98
40186-70-7	PCB-175	U	.989	.989	pg/g	0.989	1.98
52663-65-7	PCB-176	U	.659	.659	pg/g	0.659	1.98
52663-70-4	PCB-177	U	.989	.989	pg/g	0.989	1.98
52663-67-9	PCB-178	U	1.32	1.32	pg/g	1.32	1.98
52663-64-6	PCB-179	U	.659	.659	pg/g	0.659	1.98
PCB-180/193	PCB-193/180	CU	1.98	1.98	pg/g	1.98	3.96
74472-47-2	PCB-181	U	.989	.989	pg/g	0.989	1.98
60145-23-5	PCB-182	U	.659	.659	pg/g	0.659	1.98
PCB-183/185	PCB-183/185	CU	1.32	1.32	pg/g	1.32	3.96
74472-48-3	PCB-184	U	.659	.659	pg/g	0.659	1.98
74472-49-4	PCB-186	U	.659	.659	pg/g	0.659	1.98
52663-68-0	PCB-187	U	.989	.989	pg/g	0.989	1.98
74487-85-7	PCB-188	U	.659	.659	pg/g	0.659	1.98
39635-31-9	PCB-189	U	.659	.659	pg/g	0.659	1.98
41411-64-7	PCB-190	U	.989	.989	pg/g	0.989	1.98
74472-50-7	PCB-191	U	.659	.659	pg/g	0.659	1.98
74472-51-8	PCB-192	U	.659	.659	pg/g	0.659	1.98
35694-08-7	PCB-194	U	.659	.659	pg/g	0.659	1.98
52663-78-2	PCB-195	U	.989	.989	pg/g	0.989	1.98
42740-50-1	PCB-196	U	.659	.659	pg/g	0.659	1.98
PCB-197/200	PCB-197/200	CU	1.32	1.32	pg/g	1.32	3.96
PCB-198/199	PCB-198/199	CU	1.32	1.32	pg/g	1.32	3.96
40186-71-8	PCB-201	U	.659	.659	pg/g	0.659	1.98
2136-99-4	PCB-202	U	.989	.989	pg/g	0.989	1.98
52663-76-0	PCB-203	U	1.32	1.32	pg/g	1.32	1.98

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898003**	**Date Collected:**	**03/13/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**26.4**
Client ID:	**CAWR-14-49293**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 11:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**13.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.989	.989	pg/g	0.989	1.98
74472-53-0	PCB-205	U	.659	.659	pg/g	0.659	1.98
40186-72-9	PCB-206	U	.989	.989	pg/g	0.989	1.98
52663-79-3	PCB-207	U	.659	.659	pg/g	0.659	1.98
52663-77-1	PCB-208	U	.659	.659	pg/g	0.659	1.98
2051-24-3	PCB-209	U	.659	.659	pg/g	0.659	1.98
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	0	0	pg/g		
25429-29-2	Total Penta PCBs	U	0	0	pg/g		
26601-64-9	Total Hexa PCBs	U	0	0	pg/g		
28655-71-2	Total Hepta PCBs	U	0	0	pg/g		
55722-26-4	Total Octa PCBs	U	0	0	pg/g		
53742-07-7	Total Nona PCBs	U	0	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0	0	pg/g		
1336-36-3	Total PCB Congeners	U	0	0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		51.1	198	pg/g	25.9	(15%-150%)
13C-3-MoCB		68.0	198	pg/g	34.4	(15%-150%)
13C-4-DiCB		75.3	198	pg/g	38.1	(25%-150%)
13C-15-DiCB		98.8	198	pg/g	50.0	(25%-150%)
13C-19-TrCB		89.0	198	pg/g	45.0	(25%-150%)
13C-37-TrCB		120	198	pg/g	60.9	(25%-150%)
13C-54-TeCB		107	198	pg/g	54.0	(25%-150%)
13C-77-TeCB		143	198	pg/g	72.4	(25%-150%)
13C-81-TeCB		139	198	pg/g	70.1	(25%-150%)
13C-104-PeCB		122	198	pg/g	61.6	(25%-150%)
13C-105-PeCB		123	198	pg/g	62.0	(25%-150%)
13C-114-PeCB		117	198	pg/g	58.9	(25%-150%)
13C-118-PeCB		124	198	pg/g	62.6	(25%-150%)
13C-123-PeCB		129	198	pg/g	65.3	(25%-150%)
13C-126-PeCB		131	198	pg/g	66.3	(25%-150%)
13C-155-HxCB		118	198	pg/g	59.7	(25%-150%)
13C-156-HxCB	C	255	396	pg/g	64.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		118	198	pg/g	59.5	(25%-150%)
13C-169-HxCB		153	198	pg/g	77.4	(25%-150%)
13C-188-HpCB		82.8	198	pg/g	41.9	(25%-150%)
13C-189-HpCB		108	198	pg/g	54.6	(25%-150%)
13C-202-OcCB		89.8	198	pg/g	45.4	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898003**	**Date Collected:**	**03/13/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**26.4**
Client ID:	**CAWR-14-49293**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 11:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_2-8**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**13.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		140	198	pg/g	70.9	(25%-150%)
13C-206-NoCB		130	198	pg/g	65.9	(25%-150%)
13C-208-NoCB		120	198	pg/g	60.9	(25%-150%)
13C-209-DeCB		144	198	pg/g	72.9	(25%-150%)
13C-28-TrCB		146	198	pg/g	73.8	(30%-135%)
13C-111-PeCB		162	198	pg/g	81.7	(30%-135%)
13C-178-HpCB		152	198	pg/g	76.9	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898004**	**Date Collected:**	**03/13/2014 12:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**22.5**
Client ID:	**CAWR-14-49294**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 19:14**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**13 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.993	.993	pg/g	0.993	4.96
2051-61-8	PCB-2	U	.993	.993	pg/g	0.993	1.99
2051-62-9	PCB-3	U	.993	.993	pg/g	0.993	1.99
13029-08-8	PCB-4	U	.993	.993	pg/g	0.993	3.97
16605-91-7	PCB-5	U	.993	.993	pg/g	0.993	3.97
25569-80-6	PCB-6	U	.993	.993	pg/g	0.993	1.99
33284-50-3	PCB-7	U	.993	.993	pg/g	0.993	3.97
34883-43-7	PCB-8	U	.993	.993	pg/g	0.993	19.9
34883-39-1	PCB-9	U	.993	.993	pg/g	0.993	1.99
33146-45-1	PCB-10	U	.993	.993	pg/g	0.993	3.97
2050-67-1	PCB-11	BU	2.00	1.99	pg/g	1.99	49.6
PCB-12/13	PCB-13/12	CU	.993	.993	pg/g	0.993	7.94
34883-41-5	PCB-14	U	.993	.993	pg/g	0.993	3.97
2050-68-2	PCB-15	U	.993	.993	pg/g	0.993	19.9
38444-78-9	PCB-16	U	.993	.993	pg/g	0.993	3.97
37680-66-3	PCB-17	U	.661	.661	pg/g	0.661	3.97
PCB-18/30	PCB-18/30	CU	1.32	1.32	pg/g	1.32	3.97
38444-73-4	PCB-19	U	.661	.661	pg/g	0.661	1.99
PCB-20/28	PCB-20/28	CU	1.32	1.32	pg/g	1.32	19.9
PCB-21/33	PCB-21/33	CU	1.32	1.32	pg/g	1.32	7.94
38444-85-8	PCB-22	U	.661	.661	pg/g	0.661	3.97
55720-44-0	PCB-23	U	.661	.661	pg/g	0.661	1.99
55702-45-9	PCB-24	U	.661	.661	pg/g	0.661	1.99
55712-37-3	PCB-25	U	.661	.661	pg/g	0.661	1.99
PCB-26/29	PCB-26/29	CU	1.32	1.32	pg/g	1.32	3.97
38444-76-7	PCB-27	U	.661	.661	pg/g	0.661	1.99
16606-02-3	PCB-31	U	.661	.661	pg/g	0.661	9.93
38444-77-8	PCB-32	U	.661	.661	pg/g	0.661	1.99
37680-68-5	PCB-34	U	.661	.661	pg/g	0.661	1.99
37680-69-6	PCB-35	U	.661	.661	pg/g	0.661	3.97
38444-87-0	PCB-36	U	.661	.661	pg/g	0.661	3.97
38444-90-5	PCB-37	U	.661	.661	pg/g	0.661	19.9

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898004**	**Date Collected:**	**03/13/2014 12:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**22.5**
Client ID:	**CAWR-14-49294**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 19:14**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**13 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.661	.661	pg/g	0.661	1.99
38444-88-1	PCB-39	U	.661	.661	pg/g	0.661	3.97
PCB-40/71	PCB-40/71	CU	1.32	1.32	pg/g	1.32	3.97
52663-59-9	PCB-41	U	1.32	1.32	pg/g	1.32	1.99
36559-22-5	PCB-42	U	.993	.993	pg/g	0.993	1.99
70362-46-8	PCB-43	U	1.32	1.32	pg/g	1.32	3.97
PCB-44/47/65	PCB-44/65/47	CU	3.32	3.32	pg/g	3.32	5.96
PCB-45/51	PCB-45/51	CU	1.32	1.32	pg/g	1.32	3.97
41464-47-5	PCB-46	U	.661	.661	pg/g	0.661	1.99
70362-47-9	PCB-48	U	.661	.661	pg/g	0.661	1.99
PCB-49/69	PCB-69/49	CU	1.32	1.32	pg/g	1.32	3.97
PCB-50/53	PCB-50/53	CU	1.32	1.32	pg/g	1.32	3.97
35693-99-3	PCB-52	U	1.32	1.32	pg/g	1.32	1.99
15968-05-5	PCB-54	U	.661	.661	pg/g	0.661	1.99
74338-24-2	PCB-55	U	.993	.993	pg/g	0.993	1.99
41464-43-1	PCB-56	U	.661	.661	pg/g	0.661	3.97
70424-67-8	PCB-57	U	.993	.993	pg/g	0.993	1.99
41464-49-7	PCB-58	U	.993	.993	pg/g	0.993	1.99
PCB-59/62/75	PCB-59/62/75	CU	1.99	1.99	pg/g	1.99	5.96
33025-41-1	PCB-60	U	.661	.661	pg/g	0.661	3.97
PCB-61-76	PCB-61/76/70/74	CU	2.64	2.64	pg/g	2.64	7.94
74472-34-7	PCB-63	U	.661	.661	pg/g	0.661	4.96
52663-58-8	PCB-64	U	.993	.993	pg/g	0.993	1.99
32598-10-0	PCB-66	U	.993	.993	pg/g	0.993	4.96
73575-53-8	PCB-67	U	.993	.993	pg/g	0.993	1.99
73575-52-7	PCB-68	U	.661	.661	pg/g	0.661	1.99
41464-42-0	PCB-72	U	.661	.661	pg/g	0.661	3.97
74338-23-1	PCB-73	U	.993	.993	pg/g	0.993	1.99
32598-13-3	PCB-77	U	.661	.661	pg/g	0.661	1.99
70362-49-1	PCB-78	U	.661	.661	pg/g	0.661	1.99
41464-48-6	PCB-79	U	.661	.661	pg/g	0.661	3.97
33284-52-5	PCB-80	U	.661	.661	pg/g	0.661	3.97

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898004**	**Date Collected:**	**03/13/2014 12:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**22.5**
Client ID:	**CAWR-14-49294**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 19:14**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**13 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.661	.661	pg/g	0.661	1.99
52663-62-4	PCB-82	U	.993	.993	pg/g	0.993	4.96
60145-20-2	PCB-83	U	.993	.993	pg/g	0.993	1.99
52663-60-2	PCB-84	U	.993	.993	pg/g	0.993	1.99
PCB-85-117	PCB-117/116/85	CU	1.99	1.99	pg/g	1.99	5.96
PCB-86-125	PCB-86/87/97/109/119/125	CU	3.97	3.97	pg/g	3.97	11.9
PCB-88/91	PCB-88/91	CU	1.32	1.32	pg/g	1.32	3.97
73575-57-2	PCB-89	U	.661	.661	pg/g	0.661	1.99
PCB-90-113	PCB-113/90/101	CJ	2.40	2.1	pg/g	1.99	5.96
52663-61-3	PCB-92	U	.993	.993	pg/g	0.993	1.99
PCB-93/100	PCB-93/100	CU	1.99	1.99	pg/g	1.99	3.97
73575-55-0	PCB-94	U	.661	.661	pg/g	0.661	1.99
38379-99-6	PCB-95	J	1.76	1.46	pg/g	1.32	3.97
73575-54-9	PCB-96	U	.661	.661	pg/g	0.661	1.99
PCB-98/102	PCB-102/98	CU	1.32	1.32	pg/g	1.32	3.97
38380-01-7	PCB-99	U	1.32	1.32	pg/g	1.32	1.99
60145-21-3	PCB-103	U	.661	.661	pg/g	0.661	4.96
56558-16-8	PCB-104	U	.661	.661	pg/g	0.661	1.99
32598-14-4	PCB-105	U	.993	.993	pg/g	0.993	1.99
70424-69-0	PCB-106	U	.993	.993	pg/g	0.993	1.99
70424-68-9	PCB-107	U	.661	.661	pg/g	0.661	3.97
PCB-108/124	PCB-108/124	CU	1.32	1.32	pg/g	1.32	3.97
PCB-110/115	PCB-110/115	CU	2.64	2.64	pg/g	2.64	3.97
39635-32-0	PCB-111	U	.661	.661	pg/g	0.661	1.99
74472-36-9	PCB-112	U	1.32	1.32	pg/g	1.32	1.99
74472-37-0	PCB-114	U	.661	.661	pg/g	0.661	1.99
31508-00-6	PCB-118	U	1.72	1.32	pg/g	1.32	3.97
68194-12-7	PCB-120	U	.661	.661	pg/g	0.661	1.99
56558-18-0	PCB-121	U	.661	.661	pg/g	0.661	1.99
76842-07-4	PCB-122	U	.661	.661	pg/g	0.661	6.85
65510-44-3	PCB-123	U	.661	.661	pg/g	0.661	1.99
57465-28-8	PCB-126	U	.661	.661	pg/g	0.661	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898004**	**Date Collected:**	**03/13/2014 12:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**22.5**
Client ID:	**CAWR-14-49294**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 19:14**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**13 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.661	.661	pg/g	0.661	1.99
PCB-128/166	PCB-128/166	CU	1.32	1.32	pg/g	1.32	3.97
PCB-129-163	PCB-138/163/129	C	9.06	8.75	pg/g	2.64	5.96
52663-66-8	PCB-130	U	.993	.993	pg/g	0.993	1.99
61798-70-7	PCB-131	U	.661	.661	pg/g	0.661	1.99
38380-05-1	PCB-132	U	2.15	.993	pg/g	0.993	1.99
35694-04-3	PCB-133	U	.661	.661	pg/g	0.661	1.99
52704-70-8	PCB-134	U	1.32	1.32	pg/g	1.32	1.99
PCB-135/151	PCB-151/135	CJ	2.05	1.72	pg/g	1.32	3.97
38411-22-2	PCB-136	U	.661	.661	pg/g	0.661	1.99
35694-06-5	PCB-137	U	1.32	1.32	pg/g	1.32	1.99
PCB-139/140	PCB-139/140	CU	1.32	1.32	pg/g	1.32	3.97
52712-04-6	PCB-141	U	1.32	1.32	pg/g	1.32	3.97
41411-61-4	PCB-142	U	.661	.661	pg/g	0.661	1.99
68194-15-0	PCB-143	U	1.32	1.32	pg/g	1.32	1.99
68194-14-9	PCB-144	U	.661	.661	pg/g	0.661	1.99
74472-40-5	PCB-145	U	.661	.661	pg/g	0.661	1.99
51908-16-8	PCB-146	U	1.16	.993	pg/g	0.993	1.99
PCB-147/149	PCB-147/149	CJ	5.56	4.06	pg/g	1.99	7.94
74472-41-6	PCB-148	U	.661	.661	pg/g	0.661	1.99
68194-08-1	PCB-150	U	.993	.993	pg/g	0.993	1.99
68194-09-2	PCB-152	U	.661	.661	pg/g	0.661	1.99
PCB-153/168	PCB-153/168	CJ	6.47	6.17	pg/g	1.99	7.94
60145-22-4	PCB-154	U	.661	.661	pg/g	0.661	1.99
33979-03-2	PCB-155	U	.661	.661	pg/g	0.661	1.99
PCB-156/157	PCB-156/157	CU	1.32	1.32	pg/g	1.32	3.97
74472-42-7	PCB-158	U	0.721	.661	pg/g	0.661	1.99
39635-35-3	PCB-159	U	.661	.661	pg/g	0.661	1.99
41411-62-5	PCB-160	U	.661	.661	pg/g	0.661	1.99
74472-43-8	PCB-161	U	.993	.993	pg/g	0.993	1.99
39635-34-2	PCB-162	U	.993	.993	pg/g	0.993	1.99
74472-45-0	PCB-164	U	.661	.661	pg/g	0.661	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898004**	**Date Collected:**	**03/13/2014 12:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**22.5**
Client ID:	**CAWR-14-49294**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 19:14**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**13 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.661	.661	pg/g	0.661	1.99
52663-72-6	PCB-167	U	.661	.661	pg/g	0.661	1.99
32774-16-6	PCB-169	U	.993	.993	pg/g	0.993	1.99
35065-30-6	PCB-170		3.32	2.86	pg/g	0.661	1.99
PCB-171/173	PCB-173/171	CU	1.32	1.32	pg/g	1.32	3.97
52663-74-8	PCB-172	U	.993	.993	pg/g	0.993	1.99
38411-25-5	PCB-174		3.21	2.92	pg/g	1.32	1.99
40186-70-7	PCB-175	U	.993	.993	pg/g	0.993	1.99
52663-65-7	PCB-176	U	.661	.661	pg/g	0.661	1.99
52663-70-4	PCB-177	J	1.91	1.62	pg/g	0.993	1.99
52663-67-9	PCB-178	U	1.32	1.32	pg/g	1.32	1.99
52663-64-6	PCB-179	J	0.874	.682	pg/g	0.661	1.99
PCB-180/193	PCB-193/180	CU	1.99	1.99	pg/g	1.99	3.97
74472-47-2	PCB-181	U	.993	.993	pg/g	0.993	1.99
60145-23-5	PCB-182	U	.661	.661	pg/g	0.661	1.99
PCB-183/185	PCB-183/185	CJ	1.78	1.48	pg/g	1.32	3.97
74472-48-3	PCB-184	U	.661	.661	pg/g	0.661	1.99
74472-49-4	PCB-186	U	.661	.661	pg/g	0.661	1.99
52663-68-0	PCB-187		3.95	3.46	pg/g	0.993	1.99
74487-85-7	PCB-188	U	.661	.661	pg/g	0.661	1.99
39635-31-9	PCB-189	U	.661	.661	pg/g	0.661	1.99
41411-64-7	PCB-190	U	.993	.993	pg/g	0.993	1.99
74472-50-7	PCB-191	U	.661	.661	pg/g	0.661	1.99
74472-51-8	PCB-192	U	.661	.661	pg/g	0.661	1.99
35694-08-7	PCB-194	J	2.15	1.82	pg/g	0.661	1.99
52663-78-2	PCB-195	U	.993	.993	pg/g	0.993	1.99
42740-50-1	PCB-196	U	.661	.661	pg/g	0.661	1.99
PCB-197/200	PCB-197/200	CU	1.32	1.32	pg/g	1.32	3.97
PCB-198/199	PCB-198/199	CJ	2.17	1.82	pg/g	1.32	3.97
40186-71-8	PCB-201	U	.661	.661	pg/g	0.661	1.99
2136-99-4	PCB-202	U	.993	.993	pg/g	0.993	1.99
52663-76-0	PCB-203	U	1.41	1.32	pg/g	1.32	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898004**	**Date Collected:**	**03/13/2014 12:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**22.5**
Client ID:	**CAWR-14-49294**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 19:14**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**13 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.993	.993	pg/g	0.993	1.99
74472-53-0	PCB-205	U	.661	.661	pg/g	0.661	1.99
40186-72-9	PCB-206	U	.993	.993	pg/g	0.993	1.99
52663-79-3	PCB-207	U	.661	.661	pg/g	0.661	1.99
52663-77-1	PCB-208	U	.661	.661	pg/g	0.661	1.99
2051-24-3	PCB-209	U	.661	.661	pg/g	0.661	1.99
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	0	0	pg/g		
25429-29-2	Total Penta PCBs		5.88	3.56	pg/g		
26601-64-9	Total Hexa PCBs		27.2	20.7	pg/g		
28655-71-2	Total Hepta PCBs		15.1	13	pg/g		
55722-26-4	Total Octa PCBs		5.74	3.64	pg/g		
53742-07-7	Total Nona PCBs	U	0	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0	0	pg/g		
1336-36-3	Total PCB Congeners		53.8	40.9	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		113	199	pg/g	56.9	(15%-150%)
13C-3-MoCB		114	199	pg/g	57.3	(15%-150%)
13C-4-DiCB		132	199	pg/g	66.5	(25%-150%)
13C-15-DiCB		152	199	pg/g	76.6	(25%-150%)
13C-19-TrCB		150	199	pg/g	75.3	(25%-150%)
13C-37-TrCB		173	199	pg/g	87.4	(25%-150%)
13C-54-TeCB		180	199	pg/g	90.7	(25%-150%)
13C-77-TeCB		188	199	pg/g	94.6	(25%-150%)
13C-81-TeCB		191	199	pg/g	96.1	(25%-150%)
13C-104-PeCB		182	199	pg/g	91.7	(25%-150%)
13C-105-PeCB		167	199	pg/g	83.9	(25%-150%)
13C-114-PeCB		160	199	pg/g	80.4	(25%-150%)
13C-118-PeCB		173	199	pg/g	87.1	(25%-150%)
13C-123-PeCB		178	199	pg/g	89.8	(25%-150%)
13C-126-PeCB		182	199	pg/g	91.7	(25%-150%)
13C-155-HxCB		171	199	pg/g	86.0	(25%-150%)
13C-156-HxCB	C	343	397	pg/g	86.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		159	199	pg/g	79.9	(25%-150%)
13C-169-HxCB		202	199	pg/g	102	(25%-150%)
13C-188-HpCB		120	199	pg/g	60.5	(25%-150%)
13C-189-HpCB		154	199	pg/g	77.4	(25%-150%)
13C-202-OcCB		132	199	pg/g	66.5	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5898004**	**Date Collected:**	**03/13/2014 12:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/15/2014 13:30**	**%Moisture:**	**22.5**
Client ID:	**CAWR-14-49294**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 19:14**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**13 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		186	199	pg/g	93.9	(25%-150%)
13C-206-NoCB		171	199	pg/g	86.3	(25%-150%)
13C-208-NoCB		159	199	pg/g	80.1	(25%-150%)
13C-209-DeCB		198	199	pg/g	100	(25%-150%)
13C-28-TrCB		181	199	pg/g	91.0	(30%-135%)
13C-111-PeCB		181	199	pg/g	91.2	(30%-135%)
13C-178-HpCB		186	199	pg/g	93.7	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

Quality Control Summary

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3000

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010062	LCS for batch 25525	13C-1-MoCB		38.3	(15%-140%)
		13C-3-MoCB		43.0	(15%-140%)
		13C-4-DiCB		47.3	(30%-140%)
		13C-15-DiCB		54.6	(30%-140%)
		13C-19-TrCB		52.8	(30%-140%)
		13C-37-TrCB		66.0	(30%-140%)
		13C-54-TeCB		66.8	(30%-140%)
		13C-77-TeCB		71.3	(30%-140%)
		13C-81-TeCB		71.9	(30%-140%)
		13C-104-PeCB		73.3	(30%-140%)
		13C-105-PeCB		64.4	(30%-140%)
		13C-114-PeCB		61.8	(30%-140%)
		13C-118-PeCB		66.0	(30%-140%)
		13C-123-PeCB		68.4	(30%-140%)
		13C-126-PeCB		66.2	(30%-140%)
		13C-155-HxCB		72.0	(30%-140%)
		13C-156-HxCB	C	61.7	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		58.8	(30%-140%)
		13C-169-HxCB		71.0	(30%-140%)
		13C-188-HpCB		53.9	(30%-140%)
		13C-189-HpCB		57.2	(30%-140%)
		13C-202-OcCB		53.7	(30%-140%)
		13C-205-OcCB		73.5	(30%-140%)
		13C-206-NoCB		70.7	(30%-140%)
		13C-208-NoCB		66.9	(30%-140%)
		13C-209-DeCB		81.1	(30%-140%)
		13C-28-TrCB		67.9	(40%-125%)
		13C-111-PeCB		72.9	(40%-125%)
		13C-178-HpCB		74.5	(40%-125%)
12010063	LCSD for batch 25525	13C-1-MoCB		46.9	(15%-140%)
		13C-3-MoCB		53.7	(15%-140%)
		13C-4-DiCB		61.7	(30%-140%)
		13C-15-DiCB		68.8	(30%-140%)
		13C-19-TrCB		69.9	(30%-140%)
		13C-37-TrCB		78.2	(30%-140%)
		13C-54-TeCB		87.3	(30%-140%)
		13C-77-TeCB		81.4	(30%-140%)
		13C-81-TeCB		81.9	(30%-140%)
		13C-104-PeCB		93.2	(30%-140%)
		13C-105-PeCB		76.2	(30%-140%)
		13C-114-PeCB		73.4	(30%-140%)
		13C-118-PeCB		78.5	(30%-140%)
		13C-123-PeCB		81.6	(30%-140%)
		13C-126-PeCB		80.0	(30%-140%)
		13C-155-HxCB		88.9	(30%-140%)
		13C-156-HxCB	C	77.2	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		73.9	(30%-140%)
		13C-169-HxCB		90.0	(30%-140%)
		13C-188-HpCB		63.6	(30%-140%)
		13C-189-HpCB		71.5	(30%-140%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3000

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010063	LCSD for batch 25525	13C-202-OcCB		66.3	(30%-140%)
		13C-205-OcCB		89.2	(30%-140%)
		13C-206-NoCB		85.1	(30%-140%)
		13C-208-NoCB		81.0	(30%-140%)
		13C-209-DeCB		99.3	(30%-140%)
		13C-28-TrCB		84.9	(40%-125%)
		13C-111-PeCB		87.1	(40%-125%)
		13C-178-HpCB		92.3	(40%-125%)
12010061	MB for batch 25525	13C-1-MoCB		53.9	(15%-150%)
		13C-3-MoCB		57.8	(15%-150%)
		13C-4-DiCB		67.3	(25%-150%)
		13C-15-DiCB		68.2	(25%-150%)
		13C-19-TrCB		70.1	(25%-150%)
		13C-37-TrCB		75.3	(25%-150%)
		13C-54-TeCB		83.5	(25%-150%)
		13C-77-TeCB		79.1	(25%-150%)
		13C-81-TeCB		79.8	(25%-150%)
		13C-104-PeCB		85.4	(25%-150%)
		13C-105-PeCB		70.4	(25%-150%)
		13C-114-PeCB		68.4	(25%-150%)
		13C-118-PeCB		73.3	(25%-150%)
		13C-123-PeCB		75.0	(25%-150%)
		13C-126-PeCB		74.0	(25%-150%)
		13C-155-HxCB		83.9	(25%-150%)
		13C-156-HxCB	C	72.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		68.9	(25%-150%)
		13C-169-HxCB		84.7	(25%-150%)
		13C-188-HpCB		58.7	(25%-150%)
		13C-189-HpCB		63.4	(25%-150%)
		13C-202-OcCB		60.0	(25%-150%)
		13C-205-OcCB		82.9	(25%-150%)
		13C-206-NoCB		79.9	(25%-150%)
		13C-208-NoCB		74.4	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		80.6	(30%-135%)
		13C-111-PeCB		82.9	(30%-135%)
		13C-178-HpCB		86.7	(30%-135%)
5898001	CAWA-14-49277	13C-1-MoCB		59.2	(15%-150%)
		13C-3-MoCB		65.4	(15%-150%)
		13C-4-DiCB		70.9	(25%-150%)
		13C-15-DiCB		80.8	(25%-150%)
		13C-19-TrCB		75.7	(25%-150%)
		13C-37-TrCB		91.0	(25%-150%)
		13C-54-TeCB		90.2	(25%-150%)
		13C-77-TeCB		109	(25%-150%)
		13C-81-TeCB		107	(25%-150%)
		13C-104-PeCB		95.6	(25%-150%)
		13C-105-PeCB		95.8	(25%-150%)
		13C-114-PeCB		92.5	(25%-150%)
		13C-118-PeCB		98.9	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3000

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5898001	CAWA-14-49277	13C-123-PeCB		103	(25%-150%)
		13C-126-PeCB		103	(25%-150%)
		13C-155-HxCB		88.3	(25%-150%)
		13C-156-HxCB	C	95.3	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		89.5	(25%-150%)
		13C-169-HxCB		113	(25%-150%)
		13C-188-HpCB		59.4	(25%-150%)
		13C-189-HpCB		79.2	(25%-150%)
		13C-202-OcCB		64.5	(25%-150%)
		13C-205-OcCB		101	(25%-150%)
		13C-206-NoCB		92.7	(25%-150%)
		13C-208-NoCB		85.6	(25%-150%)
		13C-209-DeCB		92.3	(25%-150%)
		13C-28-TrCB		90.2	(30%-135%)
		13C-111-PeCB		104	(30%-135%)
		13C-178-HpCB		95.2	(30%-135%)
5898002	CAWA-14-49278	13C-1-MoCB		49.6	(15%-150%)
		13C-3-MoCB		63.0	(15%-150%)
		13C-4-DiCB		63.7	(25%-150%)
		13C-15-DiCB		78.0	(25%-150%)
		13C-19-TrCB		71.5	(25%-150%)
		13C-37-TrCB		87.2	(25%-150%)
		13C-54-TeCB		80.5	(25%-150%)
		13C-77-TeCB		103	(25%-150%)
		13C-81-TeCB		100	(25%-150%)
		13C-104-PeCB		92.1	(25%-150%)
		13C-105-PeCB		89.4	(25%-150%)
		13C-114-PeCB		86.0	(25%-150%)
		13C-118-PeCB		90.3	(25%-150%)
		13C-123-PeCB		94.0	(25%-150%)
		13C-126-PeCB		96.9	(25%-150%)
		13C-155-HxCB		84.6	(25%-150%)
		13C-156-HxCB	C	91.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		85.7	(25%-150%)
		13C-169-HxCB		110	(25%-150%)
		13C-188-HpCB		54.6	(25%-150%)
		13C-189-HpCB		73.0	(25%-150%)
		13C-202-OcCB		57.9	(25%-150%)
		13C-205-OcCB		95.6	(25%-150%)
		13C-206-NoCB		84.7	(25%-150%)
		13C-208-NoCB		79.2	(25%-150%)
		13C-209-DeCB		86.4	(25%-150%)
		13C-28-TrCB		89.0	(30%-135%)
		13C-111-PeCB		99.8	(30%-135%)
		13C-178-HpCB		96.0	(30%-135%)
5898003	CAWR-14-49293	13C-1-MoCB		25.9	(15%-150%)
		13C-3-MoCB		34.4	(15%-150%)
		13C-4-DiCB		38.1	(25%-150%)
		13C-15-DiCB		50.0	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3000

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5898003	CAWR-14-49293	13C-19-TrCB		45.0	(25%-150%)
		13C-37-TrCB		60.9	(25%-150%)
		13C-54-TeCB		54.0	(25%-150%)
		13C-77-TeCB		72.4	(25%-150%)
		13C-81-TeCB		70.1	(25%-150%)
		13C-104-PeCB		61.6	(25%-150%)
		13C-105-PeCB		62.0	(25%-150%)
		13C-114-PeCB		58.9	(25%-150%)
		13C-118-PeCB		62.6	(25%-150%)
		13C-123-PeCB		65.3	(25%-150%)
		13C-126-PeCB		66.3	(25%-150%)
		13C-155-HxCB		59.7	(25%-150%)
		13C-156-HxCB	C	64.6	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		59.5	(25%-150%)
		13C-169-HxCB		77.4	(25%-150%)
		13C-188-HpCB		41.9	(25%-150%)
		13C-189-HpCB		54.6	(25%-150%)
		13C-202-OcCB		45.4	(25%-150%)
		13C-205-OcCB		70.9	(25%-150%)
		13C-206-NoCB		65.9	(25%-150%)
		13C-208-NoCB		60.9	(25%-150%)
		13C-209-DeCB		72.9	(25%-150%)
		13C-28-TrCB		73.8	(30%-135%)
		13C-111-PeCB		81.7	(30%-135%)
		13C-178-HpCB		76.9	(30%-135%)
12010146	LCS for batch 25605	13C-1-MoCB		66.8	(15%-140%)
		13C-3-MoCB		65.9	(15%-140%)
		13C-4-DiCB		81.4	(30%-140%)
		13C-15-DiCB		100	(30%-140%)
		13C-19-TrCB		95.8	(30%-140%)
		13C-37-TrCB		111	(30%-140%)
		13C-54-TeCB		109	(30%-140%)
		13C-77-TeCB		127	(30%-140%)
		13C-81-TeCB		128	(30%-140%)
		13C-104-PeCB		109	(30%-140%)
		13C-105-PeCB		108	(30%-140%)
		13C-114-PeCB		105	(30%-140%)
		13C-118-PeCB		112	(30%-140%)
		13C-123-PeCB		116	(30%-140%)
		13C-126-PeCB		119	(30%-140%)
		13C-155-HxCB		105	(30%-140%)
		13C-156-HxCB	C	110	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		102	(30%-140%)
		13C-169-HxCB		133	(30%-140%)
		13C-188-HpCB		77.6	(30%-140%)
		13C-189-HpCB		98.2	(30%-140%)
		13C-202-OcCB		84.4	(30%-140%)
		13C-205-OcCB		120	(30%-140%)
		13C-206-NoCB		111	(30%-140%)
		13C-208-NoCB		104	(30%-140%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3000

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010146	LCS for batch 25605	13C-209-DeCB		129	(30%-140%)
		13C-28-TrCB		108	(40%-125%)
		13C-111-PeCB		116	(40%-125%)
		13C-178-HpCB		121	(40%-125%)
12010147	LCSD for batch 25605	13C-1-MoCB		24.1	(15%-140%)
		13C-3-MoCB		26.2	(15%-140%)
		13C-4-DiCB		29.2 *	(30%-140%)
		13C-15-DiCB		34.3	(30%-140%)
		13C-19-TrCB		33.2	(30%-140%)
		13C-37-TrCB		41.9	(30%-140%)
		13C-54-TeCB		45.5	(30%-140%)
		13C-77-TeCB		45.6	(30%-140%)
		13C-81-TeCB		46.5	(30%-140%)
		13C-104-PeCB		43.1	(30%-140%)
		13C-105-PeCB		40.1	(30%-140%)
		13C-114-PeCB		38.3	(30%-140%)
		13C-118-PeCB		40.1	(30%-140%)
		13C-123-PeCB		41.9	(30%-140%)
		13C-126-PeCB		43.2	(30%-140%)
		13C-155-HxCB		41.6	(30%-140%)
		13C-156-HxCB	C	41.9	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		38.8	(30%-140%)
		13C-169-HxCB		47.2	(30%-140%)
		13C-188-HpCB		28.3 *	(30%-140%)
		13C-189-HpCB		36.9	(30%-140%)
		13C-202-OcCB		31.5	(30%-140%)
		13C-205-OcCB		46.0	(30%-140%)
		13C-206-NoCB		41.6	(30%-140%)
		13C-208-NoCB		39.0	(30%-140%)
		13C-209-DeCB		48.5	(30%-140%)
		13C-28-TrCB		44.2	(40%-125%)
		13C-111-PeCB		42.9	(40%-125%)
		13C-178-HpCB		45.2	(40%-125%)
12010145	MB for batch 25605	13C-1-MoCB		38.6	(15%-150%)
		13C-3-MoCB		45.6	(15%-150%)
		13C-4-DiCB		52.5	(25%-150%)
		13C-15-DiCB		70.4	(25%-150%)
		13C-19-TrCB		65.8	(25%-150%)
		13C-37-TrCB		88.9	(25%-150%)
		13C-54-TeCB		88.3	(25%-150%)
		13C-77-TeCB		95.3	(25%-150%)
		13C-81-TeCB		95.8	(25%-150%)
		13C-104-PeCB		94.4	(25%-150%)
		13C-105-PeCB		86.6	(25%-150%)
		13C-114-PeCB		80.8	(25%-150%)
		13C-118-PeCB		86.2	(25%-150%)
		13C-123-PeCB		90.3	(25%-150%)
		13C-126-PeCB		90.3	(25%-150%)
		13C-155-HxCB		90.7	(25%-150%)
		13C-156-HxCB	C	87.4	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3000

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010145	MB for batch 25605	13C-157-HxCB	C156L		
		13C-167-HxCB		80.8	(25%-150%)
		13C-169-HxCB		97.8	(25%-150%)
		13C-188-HpCB		66.3	(25%-150%)
		13C-189-HpCB		80.6	(25%-150%)
		13C-202-OcCB		69.4	(25%-150%)
		13C-205-OcCB		97.3	(25%-150%)
		13C-206-NoCB		89.3	(25%-150%)
		13C-208-NoCB		83.1	(25%-150%)
		13C-209-DeCB		102	(25%-150%)
		13C-28-TrCB		85.3	(30%-135%)
		13C-111-PeCB		90.0	(30%-135%)
		13C-178-HpCB		90.7	(30%-135%)
5898004	CAWR-14-49294	13C-1-MoCB		56.9	(15%-150%)
		13C-3-MoCB		57.3	(15%-150%)
		13C-4-DiCB		66.5	(25%-150%)
		13C-15-DiCB		76.6	(25%-150%)
		13C-19-TrCB		75.3	(25%-150%)
		13C-37-TrCB		87.4	(25%-150%)
		13C-54-TeCB		90.7	(25%-150%)
		13C-77-TeCB		94.6	(25%-150%)
		13C-81-TeCB		96.1	(25%-150%)
		13C-104-PeCB		91.7	(25%-150%)
		13C-105-PeCB		83.9	(25%-150%)
		13C-114-PeCB		80.4	(25%-150%)
		13C-118-PeCB		87.1	(25%-150%)
		13C-123-PeCB		89.8	(25%-150%)
		13C-126-PeCB		91.7	(25%-150%)
		13C-155-HxCB		86.0	(25%-150%)
		13C-156-HxCB	C	86.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		79.9	(25%-150%)
		13C-169-HxCB		102	(25%-150%)
		13C-188-HpCB		60.5	(25%-150%)
		13C-189-HpCB		77.4	(25%-150%)
		13C-202-OcCB		66.5	(25%-150%)
		13C-205-OcCB		93.9	(25%-150%)
		13C-206-NoCB		86.3	(25%-150%)
		13C-208-NoCB		80.1	(25%-150%)
		13C-209-DeCB		100	(25%-150%)
		13C-28-TrCB		91.0	(30%-135%)
		13C-111-PeCB		91.2	(30%-135%)
		13C-178-HpCB		93.7	(30%-135%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3000**
Client ID: **LCS for batch 25525**
Lab Sample ID: **12010062**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample**
Matrix: **SOLID**
Analysis Date: **03/25/2014 17:45**
Dilution: **1**
Prep Batch ID: **25525**
Batch ID: **25527**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS	PCB-1	50.0		42.0	84	50-150
2051-62-9	LCS	PCB-3	50.0		43.6	87.3	50-150
13029-08-8	LCS	PCB-4	50.0		39.9	79.8	50-150
2050-68-2	LCS	PCB-15	50.0		46.3	92.5	50-150
38444-73-4	LCS	PCB-19	50.0		43.8	87.6	50-150
38444-90-5	LCS	PCB-37	50.0		43.3	86.7	50-150
15968-05-5	LCS	PCB-54	100		86.8	86.8	50-150
32598-13-3	LCS	PCB-77	100		79.6	79.6	50-150
70362-50-4	LCS	PCB-81	100		90.1	90.1	50-150
56558-16-8	LCS	PCB-104	100		91.9	91.9	50-150
32598-14-4	LCS	PCB-105	100		99.5	99.5	50-150
74472-37-0	LCS	PCB-114	100		97.9	97.9	50-150
31508-00-6	LCS	PCB-118	100		83.5	83.5	50-150
65510-44-3	LCS	PCB-123	100		79.7	79.7	50-150
57465-28-8	LCS	PCB-126	100		94.6	94.6	50-150
33979-03-2	LCS	PCB-155	100		92.0	92	50-150
38380-08-4	LCS	PCB-156/157	200	C	209	104	50-150
52663-72-6	LCS	PCB-167	100		111	111	50-150
32774-16-6	LCS	PCB-169	100		94.2	94.2	50-150
74487-85-7	LCS	PCB-188	100		94.2	94.2	50-150
39635-31-9	LCS	PCB-189	100		96.9	96.9	50-150
2136-99-4	LCS	PCB-202	150		140	93.6	50-150
74472-53-0	LCS	PCB-205	150		138	91.7	50-150
40186-72-9	LCS	PCB-206	150		134	89.2	50-150
52663-77-1	LCS	PCB-208	150		145	96.7	50-150
2051-24-3	LCS	PCB-209	150		131	87.5	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 2014-3000
Client ID: LCSD for batch 25525
Lab Sample ID: 12010063
Instrument: HRP791
Analyst: MJC

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOLID
Analysis Date: 03/25/2014 18:53
Dilution: 1
Prep Batch ID: 25525
Batch ID: 25527

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	PCB-1	50.0		41.4	82.9	50-150	1.36	0-20
2051-62-9	LCSD	PCB-3	50.0		44.2	88.5	50-150	1.32	0-20
13029-08-8	LCSD	PCB-4	50.0		38.9	77.7	50-150	2.59	0-20
2050-68-2	LCSD	PCB-15	50.0		45.9	91.9	50-150	0.699	0-20
38444-73-4	LCSD	PCB-19	50.0		44.2	88.5	50-150	0.945	0-20
38444-90-5	LCSD	PCB-37	50.0		43.5	87	50-150	0.368	0-20
15968-05-5	LCSD	PCB-54	100		85.0	85	50-150	2.05	0-20
32598-13-3	LCSD	PCB-77	100		80.8	80.8	50-150	1.56	0-20
70362-50-4	LCSD	PCB-81	100		89.7	89.7	50-150	0.385	0-20
56558-16-8	LCSD	PCB-104	100		91.5	91.5	50-150	0.436	0-20
32598-14-4	LCSD	PCB-105	100		99.8	99.8	50-150	0.347	0-20
74472-37-0	LCSD	PCB-114	100		98.1	98.1	50-150	0.188	0-20
31508-00-6	LCSD	PCB-118	100		83.2	83.2	50-150	0.365	0-20
65510-44-3	LCSD	PCB-123	100		79.7	79.7	50-150	0.0477	0-20
57465-28-8	LCSD	PCB-126	100		93.4	93.4	50-150	1.19	0-20
33979-03-2	LCSD	PCB-155	100		92.1	92.1	50-150	0.0652	0-20
38380-08-4	LCSD	PCB-156/157	200	C	210	105	50-150	0.496	0-20
52663-72-6	LCSD	PCB-167	100		113	113	50-150	1.88	0-20
32774-16-6	LCSD	PCB-169	100		95.3	95.3	50-150	1.14	0-20
74487-85-7	LCSD	PCB-188	100		94.8	94.8	50-150	0.597	0-20
39635-31-9	LCSD	PCB-189	100		97.1	97.1	50-150	0.278	0-20
2136-99-4	LCSD	PCB-202	150		141	94.3	50-150	0.680	0-20
74472-53-0	LCSD	PCB-205	150		137	91.7	50-150	0.096	0-20
40186-72-9	LCSD	PCB-206	150		135	89.9	50-150	0.817	0-20
52663-77-1	LCSD	PCB-208	150		147	98.1	50-150	1.41	0-20
2051-24-3	LCSD	PCB-209	150		131	87.3	50-150	0.204	0-20

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3000**
Client ID: **LCS for batch 25605**
Lab Sample ID: **12010146**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample**
Matrix: **SOLID**
Analysis Date: **04/10/2014 15:52**
Dilution: **1**
Prep Batch ID: **25605**
Batch ID: **25607**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS	PCB-1	50.0		43.9	87.7	50-150
2051-62-9	LCS	PCB-3	50.0		53.0	106	50-150
13029-08-8	LCS	PCB-4	50.0		40.2	80.4	50-150
2050-68-2	LCS	PCB-15	50.0		47.1	94.2	50-150
38444-73-4	LCS	PCB-19	50.0		46.6	93.1	50-150
38444-90-5	LCS	PCB-37	50.0		46.8	93.6	50-150
15968-05-5	LCS	PCB-54	100		91.5	91.5	50-150
32598-13-3	LCS	PCB-77	100		87.2	87.2	50-150
70362-50-4	LCS	PCB-81	100		95.6	95.6	50-150
56558-16-8	LCS	PCB-104	100		100	100	50-150
32598-14-4	LCS	PCB-105	100		106	106	50-150
74472-37-0	LCS	PCB-114	100		101	101	50-150
31508-00-6	LCS	PCB-118	100		87.6	87.6	50-150
65510-44-3	LCS	PCB-123	100		85.1	85.1	50-150
57465-28-8	LCS	PCB-126	100		97.6	97.6	50-150
33979-03-2	LCS	PCB-155	100		101	101	50-150
38380-08-4	LCS	PCB-156/157	200	C	225	112	50-150
52663-72-6	LCS	PCB-167	100		121	121	50-150
32774-16-6	LCS	PCB-169	100		101	101	50-150
74487-85-7	LCS	PCB-188	100		102	102	50-150
39635-31-9	LCS	PCB-189	100		105	105	50-150
2136-99-4	LCS	PCB-202	150		152	101	50-150
74472-53-0	LCS	PCB-205	150		149	99	50-150
40186-72-9	LCS	PCB-206	150		144	96.1	50-150
52663-77-1	LCS	PCB-208	150		158	106	50-150
2051-24-3	LCS	PCB-209	150		140	93.6	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3000**
Client ID: **LCSD for batch 25605**
Lab Sample ID: **12010147**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample Duplicate**
Matrix: **SOLID**
Analysis Date: **04/10/2014 16:59**
Dilution: **1**
Prep Batch ID: **25605**
Batch ID: **25607**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	PCB-1	50.0		41.5	83.1	50-150	5.48	0-20
2051-62-9	LCSD	PCB-3	50.0		45.6	91.2	50-150	14.9	0-20
13029-08-8	LCSD	PCB-4	50.0		43.0	85.9	50-150	6.63	0-20
2050-68-2	LCSD	PCB-15	50.0		46.1	92.1	50-150	2.20	0-20
38444-73-4	LCSD	PCB-19	50.0		46.9	93.7	50-150	0.659	0-20
38444-90-5	LCSD	PCB-37	50.0		46.9	93.8	50-150	0.179	0-20
15968-05-5	LCSD	PCB-54	100		87.9	87.9	50-150	3.98	0-20
32598-13-3	LCSD	PCB-77	100		85.3	85.3	50-150	2.12	0-20
70362-50-4	LCSD	PCB-81	100		93.5	93.5	50-150	2.27	0-20
56558-16-8	LCSD	PCB-104	100		97.0	97	50-150	3.13	0-20
32598-14-4	LCSD	PCB-105	100		101	101	50-150	4.73	0-20
74472-37-0	LCSD	PCB-114	100		102	102	50-150	1.40	0-20
31508-00-6	LCSD	PCB-118	100		85.5	85.5	50-150	2.49	0-20
65510-44-3	LCSD	PCB-123	100		87.5	87.5	50-150	2.86	0-20
57465-28-8	LCSD	PCB-126	100		97.4	97.4	50-150	0.197	0-20
33979-03-2	LCSD	PCB-155	100		97.4	97.4	50-150	3.33	0-20
38380-08-4	LCSD	PCB-156/157	200	C	218	109	50-150	3.06	0-20
52663-72-6	LCSD	PCB-167	100		118	118	50-150	2.62	0-20
32774-16-6	LCSD	PCB-169	100		98.8	98.8	50-150	1.71	0-20
74487-85-7	LCSD	PCB-188	100		101	101	50-150	0.785	0-20
39635-31-9	LCSD	PCB-189	100		102	102	50-150	2.77	0-20
2136-99-4	LCSD	PCB-202	150		151	101	50-150	0.548	0-20
74472-53-0	LCSD	PCB-205	150		147	98.2	50-150	0.884	0-20
40186-72-9	LCSD	PCB-206	150		144	96.2	50-150	0.0485	0-20
52663-77-1	LCSD	PCB-208	150		156	104	50-150	1.28	0-20
2051-24-3	LCSD	PCB-209	150		139	92.6	50-150	1.10	0-20

Method Blank Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Matrix:**	**SOLID**
Client ID:	**MB for batch 25525**	**Instrument ID:**	**HRP791**	**Data File:**	**c25mar14b-4**
Lab Sample ID:	**12010061**	**Prep Date:**	**24-MAR-14**	**Analyzed:**	**03/25/14 20:01**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 25525	12010062	c25mar14b-2	03/25/14	1745
02	LCSD for batch 25525	12010063	c25mar14b-3	03/25/14	1853
03	CAWA-14-49277	5898001	c25mar14b_2-6	03/26/14	0944
04	CAWA-14-49278	5898002	c25mar14b_2-7	03/26/14	1052
05	CAWR-14-49293	5898003	c25mar14b_2-8	03/26/14	1159

Method Blank Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Matrix:**	**SOLID**
Client ID:	**MB for batch 25605**	**Instrument ID:**	**HRP791**	**Data File:**	**c09apr14a_3-4**
Lab Sample ID:	**12010145**	**Prep Date:**	**09-APR-14**	**Analyzed:**	**04/10/14 18:07**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 25605	12010146	c09apr14a_3-2	04/10/14	1552
02	LCSD for batch 25605	12010147	c09apr14a_3-3	04/10/14	1659
03	CAWR-14-49294	5898004	c09apr14a_3-5	04/10/14	1914

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	1	1	pg/g	1.00	5.00
2051-61-8	PCB-2	U	1	1	pg/g	1.00	2.00
2051-62-9	PCB-3	U	1	1	pg/g	1.00	2.00
13029-08-8	PCB-4	U	1	1	pg/g	1.00	4.00
16605-91-7	PCB-5	U	1	1	pg/g	1.00	4.00
25569-80-6	PCB-6	U	1	1	pg/g	1.00	2.00
33284-50-3	PCB-7	U	1	1	pg/g	1.00	4.00
34883-43-7	PCB-8	U	1	1	pg/g	1.00	20.0
34883-39-1	PCB-9	U	1	1	pg/g	1.00	2.00
33146-45-1	PCB-10	U	1	1	pg/g	1.00	4.00
2050-67-1	PCB-11	U	2.43	2	pg/g	2.00	50.0
PCB-12/13	PCB-13/12	CU	1	1	pg/g	1.00	8.00
34883-41-5	PCB-14	U	1	1	pg/g	1.00	4.00
2050-68-2	PCB-15	U	1	1	pg/g	1.00	20.0
38444-78-9	PCB-16	U	1	1	pg/g	1.00	4.00
37680-66-3	PCB-17	U	.666	.666	pg/g	0.666	4.00
PCB-18/30	PCB-18/30	CU	1.33	1.33	pg/g	1.33	4.00
38444-73-4	PCB-19	U	.666	.666	pg/g	0.666	2.00
PCB-20/28	PCB-20/28	CU	1.33	1.33	pg/g	1.33	20.0
PCB-21/33	PCB-21/33	CU	1.33	1.33	pg/g	1.33	8.00
38444-85-8	PCB-22	U	.666	.666	pg/g	0.666	4.00
55720-44-0	PCB-23	U	.666	.666	pg/g	0.666	2.00
55702-45-9	PCB-24	U	.666	.666	pg/g	0.666	2.00
55712-37-3	PCB-25	U	.666	.666	pg/g	0.666	2.00
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	4.00
38444-76-7	PCB-27	U	.666	.666	pg/g	0.666	2.00
16606-02-3	PCB-31	U	.666	.666	pg/g	0.666	10.0
38444-77-8	PCB-32	U	.666	.666	pg/g	0.666	2.00
37680-68-5	PCB-34	U	.666	.666	pg/g	0.666	2.00
37680-69-6	PCB-35	U	.666	.666	pg/g	0.666	4.00
38444-87-0	PCB-36	U	.666	.666	pg/g	0.666	4.00
38444-90-5	PCB-37	U	.666	.666	pg/g	0.666	20.0

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.666	.666	pg/g	0.666	2.00
38444-88-1	PCB-39	U	.666	.666	pg/g	0.666	4.00
PCB-40/71	PCB-40/71	CU	1.33	1.33	pg/g	1.33	4.00
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	2.00
36559-22-5	PCB-42	U	1	1	pg/g	1.00	2.00
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	4.00
PCB-44/47/65	PCB-44/65/47	CU	3.34	3.34	pg/g	3.34	6.00
PCB-45/51	PCB-45/51	CU	1.33	1.33	pg/g	1.33	4.00
41464-47-5	PCB-46	U	.666	.666	pg/g	0.666	2.00
70362-47-9	PCB-48	U	.666	.666	pg/g	0.666	2.00
PCB-49/69	PCB-69/49	CU	1.33	1.33	pg/g	1.33	4.00
PCB-50/53	PCB-50/53	CU	1.33	1.33	pg/g	1.33	4.00
35693-99-3	PCB-52	U	1.33	1.33	pg/g	1.33	2.00
15968-05-5	PCB-54	U	.666	.666	pg/g	0.666	2.00
74338-24-2	PCB-55	U	1	1	pg/g	1.00	2.00
41464-43-1	PCB-56	U	.666	.666	pg/g	0.666	4.00
70424-67-8	PCB-57	U	1	1	pg/g	1.00	2.00
41464-49-7	PCB-58	U	1	1	pg/g	1.00	2.00
PCB-59/62/75	PCB-59/62/75	CU	2	2	pg/g	2.00	6.00
33025-41-1	PCB-60	U	.666	.666	pg/g	0.666	4.00
PCB-61-76	PCB-61/76/70/74	CU	2.66	2.66	pg/g	2.66	8.00
74472-34-7	PCB-63	U	.666	.666	pg/g	0.666	5.00
52663-58-8	PCB-64	U	1	1	pg/g	1.00	2.00
32598-10-0	PCB-66	U	1	1	pg/g	1.00	5.00
73575-53-8	PCB-67	U	1	1	pg/g	1.00	2.00
73575-52-7	PCB-68	U	.666	.666	pg/g	0.666	2.00
41464-42-0	PCB-72	U	.666	.666	pg/g	0.666	4.00
74338-23-1	PCB-73	U	1	1	pg/g	1.00	2.00
32598-13-3	PCB-77	U	.666	.666	pg/g	0.666	2.00
70362-49-1	PCB-78	U	.666	.666	pg/g	0.666	2.00
41464-48-6	PCB-79	U	.666	.666	pg/g	0.666	4.00
33284-52-5	PCB-80	U	.666	.666	pg/g	0.666	4.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.666	.666	pg/g	0.666	2.00
52663-62-4	PCB-82	U	1	1	pg/g	1.00	5.00
60145-20-2	PCB-83	U	1	1	pg/g	1.00	2.00
52663-60-2	PCB-84	U	1	1	pg/g	1.00	2.00
PCB-85-117	PCB-117/116/85	CU	2	2	pg/g	2.00	6.00
PCB-86-125	PCB-86/87/97/109/119/125	CU	4	4	pg/g	4.00	12.0
PCB-88/91	PCB-88/91	CU	1.33	1.33	pg/g	1.33	4.00
73575-57-2	PCB-89	U	.666	.666	pg/g	0.666	2.00
PCB-90-113	PCB-113/90/101	CU	2	2	pg/g	2.00	6.00
52663-61-3	PCB-92	U	1	1	pg/g	1.00	2.00
PCB-93/100	PCB-93/100	CU	2	2	pg/g	2.00	4.00
73575-55-0	PCB-94	U	.666	.666	pg/g	0.666	2.00
38379-99-6	PCB-95	U	1.33	1.33	pg/g	1.33	4.00
73575-54-9	PCB-96	U	.666	.666	pg/g	0.666	2.00
PCB-98/102	PCB-102/98	CU	1.33	1.33	pg/g	1.33	4.00
38380-01-7	PCB-99	U	1.33	1.33	pg/g	1.33	2.00
60145-21-3	PCB-103	U	.666	.666	pg/g	0.666	5.00
56558-16-8	PCB-104	U	.666	.666	pg/g	0.666	2.00
32598-14-4	PCB-105	U	1	1	pg/g	1.00	2.00
70424-69-0	PCB-106	U	1	1	pg/g	1.00	2.00
70424-68-9	PCB-107	U	.666	.666	pg/g	0.666	4.00
PCB-108/124	PCB-108/124	CU	1.33	1.33	pg/g	1.33	4.00
PCB-110/115	PCB-110/115	CU	2.66	2.66	pg/g	2.66	4.00
39635-32-0	PCB-111	U	.666	.666	pg/g	0.666	2.00
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	2.00
74472-37-0	PCB-114	U	.666	.666	pg/g	0.666	2.00
31508-00-6	PCB-118	U	1.33	1.33	pg/g	1.33	4.00
68194-12-7	PCB-120	U	.666	.666	pg/g	0.666	2.00
56558-18-0	PCB-121	U	.666	.666	pg/g	0.666	2.00
76842-07-4	PCB-122	U	.666	.666	pg/g	0.666	6.92
65510-44-3	PCB-123	U	.666	.666	pg/g	0.666	2.00
57465-28-8	PCB-126	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.666	.666	pg/g	0.666	2.00
PCB-128/166	PCB-128/166	CU	1.33	1.33	pg/g	1.33	4.00
PCB-129-163	PCB-138/163/129	CU	2.66	2.66	pg/g	2.66	6.00
52663-66-8	PCB-130	U	1	1	pg/g	1.00	2.00
61798-70-7	PCB-131	U	.666	.666	pg/g	0.666	2.00
38380-05-1	PCB-132	U	1	1	pg/g	1.00	2.00
35694-04-3	PCB-133	U	.666	.666	pg/g	0.666	2.00
52704-70-8	PCB-134	U	1.33	1.33	pg/g	1.33	2.00
PCB-135/151	PCB-151/135	CU	1.33	1.33	pg/g	1.33	4.00
38411-22-2	PCB-136	U	.666	.666	pg/g	0.666	2.00
35694-06-5	PCB-137	U	1.33	1.33	pg/g	1.33	2.00
PCB-139/140	PCB-139/140	CU	1.33	1.33	pg/g	1.33	4.00
52712-04-6	PCB-141	U	1.33	1.33	pg/g	1.33	4.00
41411-61-4	PCB-142	U	.666	.666	pg/g	0.666	2.00
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	2.00
68194-14-9	PCB-144	U	.666	.666	pg/g	0.666	2.00
74472-40-5	PCB-145	U	.666	.666	pg/g	0.666	2.00
51908-16-8	PCB-146	U	1	1	pg/g	1.00	2.00
PCB-147/149	PCB-147/149	CU	2	2	pg/g	2.00	8.00
74472-41-6	PCB-148	U	.666	.666	pg/g	0.666	2.00
68194-08-1	PCB-150	U	1	1	pg/g	1.00	2.00
68194-09-2	PCB-152	U	.666	.666	pg/g	0.666	2.00
PCB-153/168	PCB-153/168	CU	2	2	pg/g	2.00	8.00
60145-22-4	PCB-154	U	.666	.666	pg/g	0.666	2.00
33979-03-2	PCB-155	U	.666	.666	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	CU	1.33	1.33	pg/g	1.33	4.00
74472-42-7	PCB-158	U	.666	.666	pg/g	0.666	2.00
39635-35-3	PCB-159	U	.666	.666	pg/g	0.666	2.00
41411-62-5	PCB-160	U	.666	.666	pg/g	0.666	2.00
74472-43-8	PCB-161	U	1	1	pg/g	1.00	2.00
39635-34-2	PCB-162	U	1	1	pg/g	1.00	2.00
74472-45-0	PCB-164	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.666	.666	pg/g	0.666	2.00
52663-72-6	PCB-167	U	.666	.666	pg/g	0.666	2.00
32774-16-6	PCB-169	U	1	1	pg/g	1.00	2.00
35065-30-6	PCB-170	U	.666	.666	pg/g	0.666	2.00
PCB-171/173	PCB-173/171	CU	1.33	1.33	pg/g	1.33	4.00
52663-74-8	PCB-172	U	1	1	pg/g	1.00	2.00
38411-25-5	PCB-174	U	1.33	1.33	pg/g	1.33	2.00
40186-70-7	PCB-175	U	1	1	pg/g	1.00	2.00
52663-65-7	PCB-176	U	.666	.666	pg/g	0.666	2.00
52663-70-4	PCB-177	U	1	1	pg/g	1.00	2.00
52663-67-9	PCB-178	U	1.33	1.33	pg/g	1.33	2.00
52663-64-6	PCB-179	U	.666	.666	pg/g	0.666	2.00
PCB-180/193	PCB-193/180	CU	2	2	pg/g	2.00	4.00
74472-47-2	PCB-181	U	1	1	pg/g	1.00	2.00
60145-23-5	PCB-182	U	.666	.666	pg/g	0.666	2.00
PCB-183/185	PCB-183/185	CU	1.33	1.33	pg/g	1.33	4.00
74472-48-3	PCB-184	U	.666	.666	pg/g	0.666	2.00
74472-49-4	PCB-186	U	.666	.666	pg/g	0.666	2.00
52663-68-0	PCB-187	U	1	1	pg/g	1.00	2.00
74487-85-7	PCB-188	U	.666	.666	pg/g	0.666	2.00
39635-31-9	PCB-189	U	.666	.666	pg/g	0.666	2.00
41411-64-7	PCB-190	U	1	1	pg/g	1.00	2.00
74472-50-7	PCB-191	U	.666	.666	pg/g	0.666	2.00
74472-51-8	PCB-192	U	.666	.666	pg/g	0.666	2.00
35694-08-7	PCB-194	U	.666	.666	pg/g	0.666	2.00
52663-78-2	PCB-195	U	1	1	pg/g	1.00	2.00
42740-50-1	PCB-196	U	.666	.666	pg/g	0.666	2.00
PCB-197/200	PCB-197/200	CU	1.33	1.33	pg/g	1.33	4.00
PCB-198/199	PCB-198/199	CU	1.33	1.33	pg/g	1.33	4.00
40186-71-8	PCB-201	U	.666	.666	pg/g	0.666	2.00
2136-99-4	PCB-202	U	1	1	pg/g	1.00	2.00
52663-76-0	PCB-203	U	1.33	1.33	pg/g	1.33	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	1	1	pg/g	1.00	2.00
74472-53-0	PCB-205	U	.666	.666	pg/g	0.666	2.00
40186-72-9	PCB-206	U	1	1	pg/g	1.00	2.00
52663-79-3	PCB-207	U	.666	.666	pg/g	0.666	2.00
52663-77-1	PCB-208	U	.666	.666	pg/g	0.666	2.00
2051-24-3	PCB-209	U	.666	.666	pg/g	0.666	2.00
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	2.43	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	0	0	pg/g		
25429-29-2	Total Penta PCBs	U	0	0	pg/g		
26601-64-9	Total Hexa PCBs	U	0	0	pg/g		
28655-71-2	Total Hepta PCBs	U	0	0	pg/g		
55722-26-4	Total Octa PCBs	U	0	0	pg/g		
53742-07-7	Total Nona PCBs	U	0	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0	0	pg/g		
1336-36-3	Total PCB Congeners	U	2.43	0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		108	200	pg/g	53.9	(15%-150%)
13C-3-MoCB		116	200	pg/g	57.8	(15%-150%)
13C-4-DiCB		135	200	pg/g	67.3	(25%-150%)
13C-15-DiCB		136	200	pg/g	68.2	(25%-150%)
13C-19-TrCB		140	200	pg/g	70.1	(25%-150%)
13C-37-TrCB		151	200	pg/g	75.3	(25%-150%)
13C-54-TeCB		167	200	pg/g	83.5	(25%-150%)
13C-77-TeCB		158	200	pg/g	79.1	(25%-150%)
13C-81-TeCB		160	200	pg/g	79.8	(25%-150%)
13C-104-PeCB		171	200	pg/g	85.4	(25%-150%)
13C-105-PeCB		141	200	pg/g	70.4	(25%-150%)
13C-114-PeCB		137	200	pg/g	68.4	(25%-150%)
13C-118-PeCB		147	200	pg/g	73.3	(25%-150%)
13C-123-PeCB		150	200	pg/g	75.0	(25%-150%)
13C-126-PeCB		148	200	pg/g	74.0	(25%-150%)
13C-155-HxCB		168	200	pg/g	83.9	(25%-150%)
13C-156-HxCB	C	291	400	pg/g	72.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		138	200	pg/g	68.9	(25%-150%)
13C-169-HxCB		169	200	pg/g	84.7	(25%-150%)
13C-188-HpCB		117	200	pg/g	58.7	(25%-150%)
13C-189-HpCB		127	200	pg/g	63.4	(25%-150%)
13C-202-OcCB		120	200	pg/g	60.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		166	200	pg/g	82.9	(25%-150%)
13C-206-NoCB		160	200	pg/g	79.9	(25%-150%)
13C-208-NoCB		149	200	pg/g	74.4	(25%-150%)
13C-209-DeCB		180	200	pg/g	89.8	(25%-150%)
13C-28-TrCB		161	200	pg/g	80.6	(30%-135%)
13C-111-PeCB		166	200	pg/g	82.9	(30%-135%)
13C-178-HpCB		173	200	pg/g	86.7	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010062**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCS for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 17:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-2**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		42.2	42	pg/g	1.00	5.00
2051-62-9	PCB-3		44.1	43.6	pg/g	1.00	2.00
13029-08-8	PCB-4		40.8	39.9	pg/g	1.00	4.00
2050-68-2	PCB-15		46.9	46.3	pg/g	1.00	20.0
38444-73-4	PCB-19		44.0	43.8	pg/g	0.666	2.00
38444-90-5	PCB-37		43.7	43.3	pg/g	0.666	20.0
15968-05-5	PCB-54		86.9	86.8	pg/g	0.666	2.00
32598-13-3	PCB-77		79.8	79.6	pg/g	0.666	2.00
70362-50-4	PCB-81		90.3	90.1	pg/g	0.666	2.00
56558-16-8	PCB-104		92.1	91.9	pg/g	0.666	2.00
32598-14-4	PCB-105		100	99.5	pg/g	1.00	2.00
74472-37-0	PCB-114		98.3	97.9	pg/g	0.666	2.00
31508-00-6	PCB-118		85.4	83.5	pg/g	1.33	4.00
65510-44-3	PCB-123		80.0	79.7	pg/g	0.666	2.00
57465-28-8	PCB-126		94.9	94.6	pg/g	0.666	2.00
33979-03-2	PCB-155		92.2	92	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	209	209	pg/g	1.33	4.00
52663-72-6	PCB-167		111	111	pg/g	0.666	2.00
32774-16-6	PCB-169		94.5	94.2	pg/g	1.00	2.00
74487-85-7	PCB-188		94.4	94.2	pg/g	0.666	2.00
39635-31-9	PCB-189		97.1	96.9	pg/g	0.666	2.00
2136-99-4	PCB-202		141	140	pg/g	1.00	2.00
74472-53-0	PCB-205		138	138	pg/g	0.666	2.00
40186-72-9	PCB-206		134	134	pg/g	1.00	2.00
52663-77-1	PCB-208		145	145	pg/g	0.666	2.00
2051-24-3	PCB-209		132	131	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		76.7	200	pg/g	38.3	(15%-140%)
13C-3-MoCB		85.9	200	pg/g	43.0	(15%-140%)
13C-4-DiCB		94.6	200	pg/g	47.3	(30%-140%)
13C-15-DiCB		109	200	pg/g	54.6	(30%-140%)
13C-19-TrCB		106	200	pg/g	52.8	(30%-140%)
13C-37-TrCB		132	200	pg/g	66.0	(30%-140%)
13C-54-TeCB		134	200	pg/g	66.8	(30%-140%)
13C-77-TeCB		143	200	pg/g	71.3	(30%-140%)
13C-81-TeCB		144	200	pg/g	71.9	(30%-140%)
13C-104-PeCB		147	200	pg/g	73.3	(30%-140%)
13C-105-PeCB		129	200	pg/g	64.4	(30%-140%)
13C-114-PeCB		124	200	pg/g	61.8	(30%-140%)
13C-118-PeCB		132	200	pg/g	66.0	(30%-140%)
13C-123-PeCB		137	200	pg/g	68.4	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010062**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCS for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 17:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-2**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		132	200	pg/g	66.2	(30%-140%)
13C-155-HxCB		144	200	pg/g	72.0	(30%-140%)
13C-156-HxCB	C	247	400	pg/g	61.7	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		118	200	pg/g	58.8	(30%-140%)
13C-169-HxCB		142	200	pg/g	71.0	(30%-140%)
13C-188-HpCB		108	200	pg/g	53.9	(30%-140%)
13C-189-HpCB		114	200	pg/g	57.2	(30%-140%)
13C-202-OcCB		107	200	pg/g	53.7	(30%-140%)
13C-205-OcCB		147	200	pg/g	73.5	(30%-140%)
13C-206-NoCB		141	200	pg/g	70.7	(30%-140%)
13C-208-NoCB		134	200	pg/g	66.9	(30%-140%)
13C-209-DeCB		162	200	pg/g	81.1	(30%-140%)
13C-28-TrCB		136	200	pg/g	67.9	(40%-125%)
13C-111-PeCB		146	200	pg/g	72.9	(40%-125%)
13C-178-HpCB		149	200	pg/g	74.5	(40%-125%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010063**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCSD for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		41.7	41.4	pg/g	1.00	5.00
2051-62-9	PCB-3		44.7	44.2	pg/g	1.00	2.00
13029-08-8	PCB-4		39.7	38.9	pg/g	1.00	4.00
2050-68-2	PCB-15		46.6	45.9	pg/g	1.00	20.0
38444-73-4	PCB-19		44.4	44.2	pg/g	0.666	2.00
38444-90-5	PCB-37		43.8	43.5	pg/g	0.666	20.0
15968-05-5	PCB-54		85.2	85	pg/g	0.666	2.00
32598-13-3	PCB-77		81.1	80.8	pg/g	0.666	2.00
70362-50-4	PCB-81		90.0	89.7	pg/g	0.666	2.00
56558-16-8	PCB-104		91.7	91.5	pg/g	0.666	2.00
32598-14-4	PCB-105		100	99.8	pg/g	1.00	2.00
74472-37-0	PCB-114		98.5	98.1	pg/g	0.666	2.00
31508-00-6	PCB-118		85.1	83.2	pg/g	1.33	4.00
65510-44-3	PCB-123		80.0	79.7	pg/g	0.666	2.00
57465-28-8	PCB-126		93.8	93.4	pg/g	0.666	2.00
33979-03-2	PCB-155		92.3	92.1	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	210	210	pg/g	1.33	4.00
52663-72-6	PCB-167		113	113	pg/g	0.666	2.00
32774-16-6	PCB-169		95.6	95.3	pg/g	1.00	2.00
74487-85-7	PCB-188		95.0	94.8	pg/g	0.666	2.00
39635-31-9	PCB-189		97.4	97.1	pg/g	0.666	2.00
2136-99-4	PCB-202		142	141	pg/g	1.00	2.00
74472-53-0	PCB-205		138	137	pg/g	0.666	2.00
40186-72-9	PCB-206		135	135	pg/g	1.00	2.00
52663-77-1	PCB-208		147	147	pg/g	0.666	2.00
2051-24-3	PCB-209		131	131	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		93.7	200	pg/g	46.9	(15%-140%)
13C-3-MoCB		107	200	pg/g	53.7	(15%-140%)
13C-4-DiCB		123	200	pg/g	61.7	(30%-140%)
13C-15-DiCB		138	200	pg/g	68.8	(30%-140%)
13C-19-TrCB		140	200	pg/g	69.9	(30%-140%)
13C-37-TrCB		156	200	pg/g	78.2	(30%-140%)
13C-54-TeCB		175	200	pg/g	87.3	(30%-140%)
13C-77-TeCB		163	200	pg/g	81.4	(30%-140%)
13C-81-TeCB		164	200	pg/g	81.9	(30%-140%)
13C-104-PeCB		186	200	pg/g	93.2	(30%-140%)
13C-105-PeCB		152	200	pg/g	76.2	(30%-140%)
13C-114-PeCB		147	200	pg/g	73.4	(30%-140%)
13C-118-PeCB		157	200	pg/g	78.5	(30%-140%)
13C-123-PeCB		163	200	pg/g	81.6	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010063**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCSD for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		160	200	pg/g	80.0	(30%-140%)
13C-155-HxCB		178	200	pg/g	88.9	(30%-140%)
13C-156-HxCB	C	309	400	pg/g	77.2	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		148	200	pg/g	73.9	(30%-140%)
13C-169-HxCB		180	200	pg/g	90.0	(30%-140%)
13C-188-HpCB		127	200	pg/g	63.6	(30%-140%)
13C-189-HpCB		143	200	pg/g	71.5	(30%-140%)
13C-202-OcCB		133	200	pg/g	66.3	(30%-140%)
13C-205-OcCB		178	200	pg/g	89.2	(30%-140%)
13C-206-NoCB		170	200	pg/g	85.1	(30%-140%)
13C-208-NoCB		162	200	pg/g	81.0	(30%-140%)
13C-209-DeCB		199	200	pg/g	99.3	(30%-140%)
13C-28-TrCB		170	200	pg/g	84.9	(40%-125%)
13C-111-PeCB		174	200	pg/g	87.1	(40%-125%)
13C-178-HpCB		185	200	pg/g	92.3	(40%-125%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010145**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**MB for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 18:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	1	1	pg/g	1.00	5.00
2051-61-8	PCB-2	U	1	1	pg/g	1.00	2.00
2051-62-9	PCB-3	U	1	1	pg/g	1.00	2.00
13029-08-8	PCB-4	U	1	1	pg/g	1.00	4.00
16605-91-7	PCB-5	U	1	1	pg/g	1.00	4.00
25569-80-6	PCB-6	U	1	1	pg/g	1.00	2.00
33284-50-3	PCB-7	U	1	1	pg/g	1.00	4.00
34883-43-7	PCB-8	U	1	1	pg/g	1.00	20.0
34883-39-1	PCB-9	U	1	1	pg/g	1.00	2.00
33146-45-1	PCB-10	U	1	1	pg/g	1.00	4.00
2050-67-1	PCB-11	U	2.27	2	pg/g	2.00	50.0
PCB-12/13	PCB-13/12	CU	1	1	pg/g	1.00	8.00
34883-41-5	PCB-14	U	1	1	pg/g	1.00	4.00
2050-68-2	PCB-15	U	1	1	pg/g	1.00	20.0
38444-78-9	PCB-16	U	1	1	pg/g	1.00	4.00
37680-66-3	PCB-17	U	.666	.666	pg/g	0.666	4.00
PCB-18/30	PCB-18/30	CU	1.33	1.33	pg/g	1.33	4.00
38444-73-4	PCB-19	U	.666	.666	pg/g	0.666	2.00
PCB-20/28	PCB-20/28	CU	1.33	1.33	pg/g	1.33	20.0
PCB-21/33	PCB-21/33	CU	1.33	1.33	pg/g	1.33	8.00
38444-85-8	PCB-22	U	.666	.666	pg/g	0.666	4.00
55720-44-0	PCB-23	U	.666	.666	pg/g	0.666	2.00
55702-45-9	PCB-24	U	.666	.666	pg/g	0.666	2.00
55712-37-3	PCB-25	U	.666	.666	pg/g	0.666	2.00
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	4.00
38444-76-7	PCB-27	U	.666	.666	pg/g	0.666	2.00
16606-02-3	PCB-31	U	.666	.666	pg/g	0.666	10.0
38444-77-8	PCB-32	U	.666	.666	pg/g	0.666	2.00
37680-68-5	PCB-34	U	.666	.666	pg/g	0.666	2.00
37680-69-6	PCB-35	U	.666	.666	pg/g	0.666	4.00
38444-87-0	PCB-36	U	.666	.666	pg/g	0.666	4.00
38444-90-5	PCB-37	U	.666	.666	pg/g	0.666	20.0

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010145**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**MB for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 18:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.666	.666	pg/g	0.666	2.00
38444-88-1	PCB-39	U	.666	.666	pg/g	0.666	4.00
PCB-40/71	PCB-40/71	CU	1.33	1.33	pg/g	1.33	4.00
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	2.00
36559-22-5	PCB-42	U	1	1	pg/g	1.00	2.00
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	4.00
PCB-44/47/65	PCB-44/65/47	CU	3.34	3.34	pg/g	3.34	6.00
PCB-45/51	PCB-45/51	CU	1.33	1.33	pg/g	1.33	4.00
41464-47-5	PCB-46	U	.666	.666	pg/g	0.666	2.00
70362-47-9	PCB-48	U	.666	.666	pg/g	0.666	2.00
PCB-49/69	PCB-69/49	CU	1.33	1.33	pg/g	1.33	4.00
PCB-50/53	PCB-50/53	CU	1.33	1.33	pg/g	1.33	4.00
35693-99-3	PCB-52	U	1.33	1.33	pg/g	1.33	2.00
15968-05-5	PCB-54	U	.666	.666	pg/g	0.666	2.00
74338-24-2	PCB-55	U	1	1	pg/g	1.00	2.00
41464-43-1	PCB-56	U	.666	.666	pg/g	0.666	4.00
70424-67-8	PCB-57	U	1	1	pg/g	1.00	2.00
41464-49-7	PCB-58	U	1	1	pg/g	1.00	2.00
PCB-59/62/75	PCB-59/62/75	CU	2	2	pg/g	2.00	6.00
33025-41-1	PCB-60	U	.666	.666	pg/g	0.666	4.00
PCB-61-76	PCB-61/76/70/74	CU	2.66	2.66	pg/g	2.66	8.00
74472-34-7	PCB-63	U	.666	.666	pg/g	0.666	5.00
52663-58-8	PCB-64	U	1	1	pg/g	1.00	2.00
32598-10-0	PCB-66	U	1	1	pg/g	1.00	5.00
73575-53-8	PCB-67	U	1	1	pg/g	1.00	2.00
73575-52-7	PCB-68	U	.666	.666	pg/g	0.666	2.00
41464-42-0	PCB-72	U	.666	.666	pg/g	0.666	4.00
74338-23-1	PCB-73	U	1	1	pg/g	1.00	2.00
32598-13-3	PCB-77	U	.666	.666	pg/g	0.666	2.00
70362-49-1	PCB-78	U	.666	.666	pg/g	0.666	2.00
41464-48-6	PCB-79	U	.666	.666	pg/g	0.666	4.00
33284-52-5	PCB-80	U	.666	.666	pg/g	0.666	4.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010145**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**MB for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 18:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.666	.666	pg/g	0.666	2.00
52663-62-4	PCB-82	U	1	1	pg/g	1.00	5.00
60145-20-2	PCB-83	U	1	1	pg/g	1.00	2.00
52663-60-2	PCB-84	U	1	1	pg/g	1.00	2.00
PCB-85-117	PCB-117/116/85	CU	2	2	pg/g	2.00	6.00
PCB-86-125	PCB-86/87/97/109/119/125	CU	4	4	pg/g	4.00	12.0
PCB-88/91	PCB-88/91	CU	1.33	1.33	pg/g	1.33	4.00
73575-57-2	PCB-89	U	.666	.666	pg/g	0.666	2.00
PCB-90-113	PCB-113/90/101	CU	2	2	pg/g	2.00	6.00
52663-61-3	PCB-92	U	1	1	pg/g	1.00	2.00
PCB-93/100	PCB-93/100	CU	2	2	pg/g	2.00	4.00
73575-55-0	PCB-94	U	.666	.666	pg/g	0.666	2.00
38379-99-6	PCB-95	U	1.33	1.33	pg/g	1.33	4.00
73575-54-9	PCB-96	U	.666	.666	pg/g	0.666	2.00
PCB-98/102	PCB-102/98	CU	1.33	1.33	pg/g	1.33	4.00
38380-01-7	PCB-99	U	1.33	1.33	pg/g	1.33	2.00
60145-21-3	PCB-103	U	.666	.666	pg/g	0.666	5.00
56558-16-8	PCB-104	U	.666	.666	pg/g	0.666	2.00
32598-14-4	PCB-105	U	1	1	pg/g	1.00	2.00
70424-69-0	PCB-106	U	1	1	pg/g	1.00	2.00
70424-68-9	PCB-107	U	.666	.666	pg/g	0.666	4.00
PCB-108/124	PCB-108/124	CU	1.33	1.33	pg/g	1.33	4.00
PCB-110/115	PCB-110/115	CU	2.66	2.66	pg/g	2.66	4.00
39635-32-0	PCB-111	U	.666	.666	pg/g	0.666	2.00
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	2.00
74472-37-0	PCB-114	U	.666	.666	pg/g	0.666	2.00
31508-00-6	PCB-118	U	1.33	1.33	pg/g	1.33	4.00
68194-12-7	PCB-120	U	.666	.666	pg/g	0.666	2.00
56558-18-0	PCB-121	U	.666	.666	pg/g	0.666	2.00
76842-07-4	PCB-122	U	.666	.666	pg/g	0.666	6.90
65510-44-3	PCB-123	U	.666	.666	pg/g	0.666	2.00
57465-28-8	PCB-126	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010145**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**MB for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 18:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.666	.666	pg/g	0.666	2.00
PCB-128/166	PCB-128/166	CU	1.33	1.33	pg/g	1.33	4.00
PCB-129-163	PCB-138/163/129	CU	2.66	2.66	pg/g	2.66	6.00
52663-66-8	PCB-130	U	1	1	pg/g	1.00	2.00
61798-70-7	PCB-131	U	.666	.666	pg/g	0.666	2.00
38380-05-1	PCB-132	U	1	1	pg/g	1.00	2.00
35694-04-3	PCB-133	U	.666	.666	pg/g	0.666	2.00
52704-70-8	PCB-134	U	1.33	1.33	pg/g	1.33	2.00
PCB-135/151	PCB-151/135	CU	1.33	1.33	pg/g	1.33	4.00
38411-22-2	PCB-136	U	.666	.666	pg/g	0.666	2.00
35694-06-5	PCB-137	U	1.33	1.33	pg/g	1.33	2.00
PCB-139/140	PCB-139/140	CU	1.33	1.33	pg/g	1.33	4.00
52712-04-6	PCB-141	U	1.33	1.33	pg/g	1.33	4.00
41411-61-4	PCB-142	U	.666	.666	pg/g	0.666	2.00
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	2.00
68194-14-9	PCB-144	U	.666	.666	pg/g	0.666	2.00
74472-40-5	PCB-145	U	.666	.666	pg/g	0.666	2.00
51908-16-8	PCB-146	U	1	1	pg/g	1.00	2.00
PCB-147/149	PCB-147/149	CU	2	2	pg/g	2.00	8.00
74472-41-6	PCB-148	U	.666	.666	pg/g	0.666	2.00
68194-08-1	PCB-150	U	1	1	pg/g	1.00	2.00
68194-09-2	PCB-152	U	.666	.666	pg/g	0.666	2.00
PCB-153/168	PCB-153/168	CU	2	2	pg/g	2.00	8.00
60145-22-4	PCB-154	U	.666	.666	pg/g	0.666	2.00
33979-03-2	PCB-155	U	.666	.666	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	CU	1.33	1.33	pg/g	1.33	4.00
74472-42-7	PCB-158	U	.666	.666	pg/g	0.666	2.00
39635-35-3	PCB-159	U	.666	.666	pg/g	0.666	2.00
41411-62-5	PCB-160	U	.666	.666	pg/g	0.666	2.00
74472-43-8	PCB-161	U	1	1	pg/g	1.00	2.00
39635-34-2	PCB-162	U	1	1	pg/g	1.00	2.00
74472-45-0	PCB-164	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010145**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**MB for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 18:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.666	.666	pg/g	0.666	2.00
52663-72-6	PCB-167	U	.666	.666	pg/g	0.666	2.00
32774-16-6	PCB-169	U	1	1	pg/g	1.00	2.00
35065-30-6	PCB-170	U	.666	.666	pg/g	0.666	2.00
PCB-171/173	PCB-173/171	CU	1.33	1.33	pg/g	1.33	4.00
52663-74-8	PCB-172	U	1	1	pg/g	1.00	2.00
38411-25-5	PCB-174	U	1.33	1.33	pg/g	1.33	2.00
40186-70-7	PCB-175	U	1	1	pg/g	1.00	2.00
52663-65-7	PCB-176	U	.666	.666	pg/g	0.666	2.00
52663-70-4	PCB-177	U	1	1	pg/g	1.00	2.00
52663-67-9	PCB-178	U	1.33	1.33	pg/g	1.33	2.00
52663-64-6	PCB-179	U	.666	.666	pg/g	0.666	2.00
PCB-180/193	PCB-193/180	CU	2	2	pg/g	2.00	4.00
74472-47-2	PCB-181	U	1	1	pg/g	1.00	2.00
60145-23-5	PCB-182	U	.666	.666	pg/g	0.666	2.00
PCB-183/185	PCB-183/185	CU	1.33	1.33	pg/g	1.33	4.00
74472-48-3	PCB-184	U	.666	.666	pg/g	0.666	2.00
74472-49-4	PCB-186	U	.666	.666	pg/g	0.666	2.00
52663-68-0	PCB-187	U	1	1	pg/g	1.00	2.00
74487-85-7	PCB-188	U	.666	.666	pg/g	0.666	2.00
39635-31-9	PCB-189	U	.666	.666	pg/g	0.666	2.00
41411-64-7	PCB-190	U	1	1	pg/g	1.00	2.00
74472-50-7	PCB-191	U	.666	.666	pg/g	0.666	2.00
74472-51-8	PCB-192	U	.666	.666	pg/g	0.666	2.00
35694-08-7	PCB-194	U	.666	.666	pg/g	0.666	2.00
52663-78-2	PCB-195	U	1	1	pg/g	1.00	2.00
42740-50-1	PCB-196	U	.666	.666	pg/g	0.666	2.00
PCB-197/200	PCB-197/200	CU	1.33	1.33	pg/g	1.33	4.00
PCB-198/199	PCB-198/199	CU	1.33	1.33	pg/g	1.33	4.00
40186-71-8	PCB-201	U	.666	.666	pg/g	0.666	2.00
2136-99-4	PCB-202	U	1	1	pg/g	1.00	2.00
52663-76-0	PCB-203	U	1.33	1.33	pg/g	1.33	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010145**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**MB for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 18:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	1	1	pg/g	1.00	2.00
74472-53-0	PCB-205	U	.666	.666	pg/g	0.666	2.00
40186-72-9	PCB-206	U	1	1	pg/g	1.00	2.00
52663-79-3	PCB-207	U	.666	.666	pg/g	0.666	2.00
52663-77-1	PCB-208	U	.666	.666	pg/g	0.666	2.00
2051-24-3	PCB-209	U	.666	.666	pg/g	0.666	2.00
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	2.27	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	0	0	pg/g		
25429-29-2	Total Penta PCBs	U	0	0	pg/g		
26601-64-9	Total Hexa PCBs	U	0	0	pg/g		
28655-71-2	Total Hepta PCBs	U	0	0	pg/g		
55722-26-4	Total Octa PCBs	U	0	0	pg/g		
53742-07-7	Total Nona PCBs	U	0	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0	0	pg/g		
1336-36-3	Total PCB Congeners	U	2.27	0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		77.3	200	pg/g	38.6	(15%-150%)
13C-3-MoCB		91.2	200	pg/g	45.6	(15%-150%)
13C-4-DiCB		105	200	pg/g	52.5	(25%-150%)
13C-15-DiCB		141	200	pg/g	70.4	(25%-150%)
13C-19-TrCB		132	200	pg/g	65.8	(25%-150%)
13C-37-TrCB		178	200	pg/g	88.9	(25%-150%)
13C-54-TeCB		177	200	pg/g	88.3	(25%-150%)
13C-77-TeCB		191	200	pg/g	95.3	(25%-150%)
13C-81-TeCB		192	200	pg/g	95.8	(25%-150%)
13C-104-PeCB		189	200	pg/g	94.4	(25%-150%)
13C-105-PeCB		173	200	pg/g	86.6	(25%-150%)
13C-114-PeCB		162	200	pg/g	80.8	(25%-150%)
13C-118-PeCB		172	200	pg/g	86.2	(25%-150%)
13C-123-PeCB		181	200	pg/g	90.3	(25%-150%)
13C-126-PeCB		181	200	pg/g	90.3	(25%-150%)
13C-155-HxCB		181	200	pg/g	90.7	(25%-150%)
13C-156-HxCB	C	350	400	pg/g	87.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		162	200	pg/g	80.8	(25%-150%)
13C-169-HxCB		196	200	pg/g	97.8	(25%-150%)
13C-188-HpCB		133	200	pg/g	66.3	(25%-150%)
13C-189-HpCB		161	200	pg/g	80.6	(25%-150%)
13C-202-OcCB		139	200	pg/g	69.4	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010145**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**MB for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 18:07**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		195	200	pg/g	97.3	(25%-150%)
13C-206-NoCB		179	200	pg/g	89.3	(25%-150%)
13C-208-NoCB		166	200	pg/g	83.1	(25%-150%)
13C-209-DeCB		204	200	pg/g	102	(25%-150%)
13C-28-TrCB		171	200	pg/g	85.3	(30%-135%)
13C-111-PeCB		180	200	pg/g	90.0	(30%-135%)
13C-178-HpCB		181	200	pg/g	90.7	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010146**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**LCS for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 15:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-2**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		44.1	43.9	pg/g	1.00	5.00
2051-62-9	PCB-3		53.1	53	pg/g	1.00	2.00
13029-08-8	PCB-4		41.1	40.2	pg/g	1.00	4.00
2050-68-2	PCB-15		47.8	47.1	pg/g	1.00	20.0
38444-73-4	PCB-19		46.8	46.6	pg/g	0.666	2.00
38444-90-5	PCB-37		47.1	46.8	pg/g	0.666	20.0
15968-05-5	PCB-54		91.6	91.5	pg/g	0.666	2.00
32598-13-3	PCB-77		87.4	87.2	pg/g	0.666	2.00
70362-50-4	PCB-81		95.8	95.6	pg/g	0.666	2.00
56558-16-8	PCB-104		100	100	pg/g	0.666	2.00
32598-14-4	PCB-105		106	106	pg/g	1.00	2.00
74472-37-0	PCB-114		101	101	pg/g	0.666	2.00
31508-00-6	PCB-118		89.5	87.6	pg/g	1.33	4.00
65510-44-3	PCB-123		85.4	85.1	pg/g	0.666	2.00
57465-28-8	PCB-126		98.0	97.6	pg/g	0.666	2.00
33979-03-2	PCB-155		101	101	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	225	225	pg/g	1.33	4.00
52663-72-6	PCB-167		121	121	pg/g	0.666	2.00
32774-16-6	PCB-169		101	101	pg/g	1.00	2.00
74487-85-7	PCB-188		102	102	pg/g	0.666	2.00
39635-31-9	PCB-189		106	105	pg/g	0.666	2.00
2136-99-4	PCB-202		152	152	pg/g	1.00	2.00
74472-53-0	PCB-205		149	149	pg/g	0.666	2.00
40186-72-9	PCB-206		145	144	pg/g	1.00	2.00
52663-77-1	PCB-208		159	158	pg/g	0.666	2.00
2051-24-3	PCB-209		141	140	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		134	200	pg/g	66.8	(15%-140%)
13C-3-MoCB		132	200	pg/g	65.9	(15%-140%)
13C-4-DiCB		163	200	pg/g	81.4	(30%-140%)
13C-15-DiCB		201	200	pg/g	100	(30%-140%)
13C-19-TrCB		192	200	pg/g	95.8	(30%-140%)
13C-37-TrCB		222	200	pg/g	111	(30%-140%)
13C-54-TeCB		218	200	pg/g	109	(30%-140%)
13C-77-TeCB		255	200	pg/g	127	(30%-140%)
13C-81-TeCB		257	200	pg/g	128	(30%-140%)
13C-104-PeCB		218	200	pg/g	109	(30%-140%)
13C-105-PeCB		217	200	pg/g	108	(30%-140%)
13C-114-PeCB		211	200	pg/g	105	(30%-140%)
13C-118-PeCB		223	200	pg/g	112	(30%-140%)
13C-123-PeCB		231	200	pg/g	116	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010146**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**LCS for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 15:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-2**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		239	200	pg/g	119	(30%-140%)
13C-155-HxCB		211	200	pg/g	105	(30%-140%)
13C-156-HxCB	C	440	400	pg/g	110	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		204	200	pg/g	102	(30%-140%)
13C-169-HxCB		266	200	pg/g	133	(30%-140%)
13C-188-HpCB		155	200	pg/g	77.6	(30%-140%)
13C-189-HpCB		196	200	pg/g	98.2	(30%-140%)
13C-202-OcCB		169	200	pg/g	84.4	(30%-140%)
13C-205-OcCB		240	200	pg/g	120	(30%-140%)
13C-206-NoCB		222	200	pg/g	111	(30%-140%)
13C-208-NoCB		208	200	pg/g	104	(30%-140%)
13C-209-DeCB		257	200	pg/g	129	(30%-140%)
13C-28-TrCB		216	200	pg/g	108	(40%-125%)
13C-111-PeCB		232	200	pg/g	116	(40%-125%)
13C-178-HpCB		241	200	pg/g	121	(40%-125%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010147**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**LCSD for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-3**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		41.8	41.5	pg/g	1.00	5.00
2051-62-9	PCB-3		45.8	45.6	pg/g	1.00	2.00
13029-08-8	PCB-4		43.8	43	pg/g	1.00	4.00
2050-68-2	PCB-15		46.7	46.1	pg/g	1.00	20.0
38444-73-4	PCB-19		47.1	46.9	pg/g	0.666	2.00
38444-90-5	PCB-37		47.2	46.9	pg/g	0.666	20.0
15968-05-5	PCB-54		88.1	87.9	pg/g	0.666	2.00
32598-13-3	PCB-77		85.6	85.3	pg/g	0.666	2.00
70362-50-4	PCB-81		93.7	93.5	pg/g	0.666	2.00
56558-16-8	PCB-104		97.2	97	pg/g	0.666	2.00
32598-14-4	PCB-105		101	101	pg/g	1.00	2.00
74472-37-0	PCB-114		102	102	pg/g	0.666	2.00
31508-00-6	PCB-118		87.3	85.5	pg/g	1.33	4.00
65510-44-3	PCB-123		87.9	87.5	pg/g	0.666	2.00
57465-28-8	PCB-126		97.8	97.4	pg/g	0.666	2.00
33979-03-2	PCB-155		97.6	97.4	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	218	218	pg/g	1.33	4.00
52663-72-6	PCB-167		118	118	pg/g	0.666	2.00
32774-16-6	PCB-169		99.1	98.8	pg/g	1.00	2.00
74487-85-7	PCB-188		101	101	pg/g	0.666	2.00
39635-31-9	PCB-189		103	102	pg/g	0.666	2.00
2136-99-4	PCB-202		151	151	pg/g	1.00	2.00
74472-53-0	PCB-205		147	147	pg/g	0.666	2.00
40186-72-9	PCB-206		145	144	pg/g	1.00	2.00
52663-77-1	PCB-208		157	156	pg/g	0.666	2.00
2051-24-3	PCB-209		139	139	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		48.2	200	pg/g	24.1		(15%-140%)
13C-3-MoCB		52.4	200	pg/g	26.2		(15%-140%)
13C-4-DiCB		58.5	200	pg/g	29.2	*	(30%-140%)
13C-15-DiCB		68.6	200	pg/g	34.3		(30%-140%)
13C-19-TrCB		66.3	200	pg/g	33.2		(30%-140%)
13C-37-TrCB		83.7	200	pg/g	41.9		(30%-140%)
13C-54-TeCB		90.9	200	pg/g	45.5		(30%-140%)
13C-77-TeCB		91.2	200	pg/g	45.6		(30%-140%)
13C-81-TeCB		93.0	200	pg/g	46.5		(30%-140%)
13C-104-PeCB		86.3	200	pg/g	43.1		(30%-140%)
13C-105-PeCB		80.3	200	pg/g	40.1		(30%-140%)
13C-114-PeCB		76.5	200	pg/g	38.3		(30%-140%)
13C-118-PeCB		80.2	200	pg/g	40.1		(30%-140%)
13C-123-PeCB		83.9	200	pg/g	41.9		(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3000**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010147**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25605**				
Client ID:	**LCSD for batch 25605**			**Prep Basis:**	**As Received**
Batch ID:	**25607**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/10/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c09apr14a_3-3**			**Dilution:**	**1**
Prep Batch:	**25605**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**09-APR-14**	**Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-126-PeCB		86.4	200	pg/g	43.2		(30%-140%)
13C-155-HxCB		83.2	200	pg/g	41.6		(30%-140%)
13C-156-HxCB	C	168	400	pg/g	41.9		(30%-140%)
13C-157-HxCB	C156L						
13C-167-HxCB		77.7	200	pg/g	38.8		(30%-140%)
13C-169-HxCB		94.5	200	pg/g	47.2		(30%-140%)
13C-188-HpCB		56.6	200	pg/g	28.3	*	(30%-140%)
13C-189-HpCB		73.9	200	pg/g	36.9		(30%-140%)
13C-202-OcCB		63.1	200	pg/g	31.5		(30%-140%)
13C-205-OcCB		92.0	200	pg/g	46.0		(30%-140%)
13C-206-NoCB		83.3	200	pg/g	41.6		(30%-140%)
13C-208-NoCB		77.9	200	pg/g	39.0		(30%-140%)
13C-209-DeCB		97.1	200	pg/g	48.5		(30%-140%)
13C-28-TrCB		88.5	200	pg/g	44.2		(40%-125%)
13C-111-PeCB		85.9	200	pg/g	42.9		(40%-125%)
13C-178-HpCB		90.3	200	pg/g	45.2		(40%-125%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3002

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Gamma Spec	ISOU	Tal Metals
CAWA-14-49277	Mar 13 2014	11:50	SO	1			1
CAWA-14-49278	Mar 13 2014	12:05	SO	1			1
CAWR-14-49293	Mar 13 2014	12:15	SO	1	1	1	1
CAWR-14-49294	Mar 13 2014	12:45	SO	1	1	1	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Sheri Sherwood	Sheri Sherwood	3/14/14 3pm			

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49277 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/13/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1150	MEDIA:		Sed
PRS ID:	Water-Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	~~SS~~ SPM 3/7/14	WA-61499	FIELD PREP:	NA	↓
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	↓
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:		7cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediments

LOCATION COMMENTS: WA-6 @ the Rio

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
α : 12.45 dpm
β/γ: 917 dpm

Gross Alpha 18 dpm

Gross Beta/Gamma 1794 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time
Scott Mugler	3/14/14 955	S Sherwood Sheri Sherwood	3/14/14 955
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49278 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/13/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1205	MEDIA:		Sed
PRS ID:	Water-Canyon	OK PRC 3/13	SAMPLE TECH CODE:	SS	OK
LOCATION ID:		WA-61500499	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		7cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		17cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediments

LOCATION COMMENTS: WA-6 @ Rio. Depth sample at WA-61499 (7-17cm)

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Shed Rad
Gross Alpha 47 dpm
1: 1245 2pm
Gross Beta/Gamma 1531 dpm
3/8: 917 2pm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Muggleston (Signature)	3/14/14 955	(Printed Name) S. Sherwood (Signature) Sheri Sherwood	3/14/14 955
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWR-14-49293 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/13/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1215	MEDIA:		Sed
PRS ID:	White Rock Canyon	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~70~~ 5cm 3/7/14	WR-11	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		6cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Gamma Spec	250 ML POLY	1	NONE	Y	
	ISOU	250 ML POLY	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediments

LOCATION COMMENTS: Rio Grande below water canyon

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Cut

α: 12-45 dpm

β/γ: 917 dpm

Gross Alpha 23 dpm

Gross Beta/Gamma 1326 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time
Scott Muggleton	3/14/14 955	S. Sherwood	3/14/14 955
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/18/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWR-14-49294 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/13/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1245	MEDIA:		Sed
PRS ID:	White Rock Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	TT SRM 3/7/14	WR-12	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		12cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Gamma Spec	250 ML POLY	1	NONE	Y	
	ISOU	250 ML POLY	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine sediments

LOCATION COMMENTS: Rio Grande below water canyon

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Gross Alpha 18 dpm

Gross Beta/Gamma 1463 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Muggleton (Signature)	3/14/14 955	(Printed Name) S Sherwood (Signature)	3/14/14 955
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/18/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3002

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
344675	EPA:901.1	2				
344675	HASL-300:ISOU	2				
344675	SW-846:6010C	4				
344675	SW-846:6020	4				
344675	SW-846:7471A	4				
344675	SW-846:8082	4				
344675	SW-846:8321A_MOD	4				

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
344675	EPA:901.1	1373213	1373213	2					1					1				1			
344675	HASL-300:ISOU	1373335	1373335	2					1					1				1			
344675	SW-846:6010C	1373199	1373198	4					1	1				1				1			
344675	SW-846:6020	1373201	1373200	4					1	1				1				1			
344675	SW-846:7471A	1376959	1376958	4					1	1				1				1			
344675	SW-846:8082	1373644	1373626	4					1	1	1			1							
344675	SW-846:8321A_MOD	1373204	1373203	4					1	1	1			1							

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:901.1	RAD	CAWR-14-49293	1203051681	DUP	15	0	0	0
EPA:901.1	RAD	CAWR-14-49293	344675003	REG	15	0	0	0
EPA:901.1	RAD	CAWR-14-49294	344675004	REG	15	0	0	0
EPA:901.1	RAD	LCS	1203051682	LCS	0	0	3	0
EPA:901.1	RAD	MB	1203051680	MB	15	0	0	0
HASL-300:ISOU	RAD	CAAN-14-50001	1203051967	DUP	3	0	0	0
HASL-300:ISOU	RAD	CAWR-14-49293	344675003	REG	3	0	0	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
HASL-300:ISOU	RAD	CAWR-14-49294	344675004	REG	3	0	0	0
HASL-300:ISOU	RAD	LCS	1203051968	LCS	0	0	1	0
HASL-300:ISOU	RAD	MB	1203051966	MB	3	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49277	1203051655	DUP	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49277	1203051656	MS	0	0	17	0
SW-846:6010C	INORGANIC	CAWA-14-49277	344675001	REG	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49278	344675002	REG	17	0	0	0
SW-846:6010C	INORGANIC	CAWR-14-49293	344675003	REG	17	0	0	0
SW-846:6010C	INORGANIC	CAWR-14-49294	344675004	REG	17	0	0	0
SW-846:6010C	INORGANIC	LCS	1203051654	LCS	0	0	17	0
SW-846:6010C	INORGANIC	MB	1203051653	MB	17	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49277	1203051660	DUP	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49277	1203051661	MS	0	0	5	0
SW-846:6020	INORGANIC	CAWA-14-49277	344675001	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49278	344675002	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWR-14-49293	344675003	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWR-14-49294	344675004	REG	5	0	0	0
SW-846:6020	INORGANIC	LCS	1203051659	LCS	0	0	5	0
SW-846:6020	INORGANIC	MB	1203051658	MB	5	0	0	0
SW-846:7471A	INORGANIC	CAAN-14-56601	1203060871	DUP	1	0	0	0
SW-846:7471A	INORGANIC	CAAN-14-56601	1203060872	MS	0	0	1	0
SW-846:7471A	INORGANIC	CAWA-14-49277	344675001	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49278	344675002	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWR-14-49293	344675003	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWR-14-49294	344675004	REG	1	0	0	0
SW-846:7471A	INORGANIC	LCS	1203060870	LCS	0	0	1	0
SW-846:7471A	INORGANIC	MB	1203060869	MB	1	0	0	0
SW-846:8082	PESTPCB	CAPU-14-56568	1203052772	MS	0	2	2	0
SW-846:8082	PESTPCB	CAPU-14-56568	1203052773	MSD	0	2	2	0
SW-846:8082	PESTPCB	CAWA-14-49277	344675001	REG	7	2	0	0
SW-846:8082	PESTPCB	CAWA-14-49278	344675002	REG	7	2	0	0
SW-846:8082	PESTPCB	CAWR-14-49293	344675003	REG	7	2	0	0
SW-846:8082	PESTPCB	CAWR-14-49294	344675004	REG	7	2	0	0
SW-846:8082	PESTPCB	LCS	1203052774	LCS	0	2	2	0
SW-846:8082	PESTPCB	MB	1203052771	MB	7	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49277	1203051667	MS	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49277	1203051668	MSD	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49277	344675001	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49278	344675002	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWR-14-49293	344675003	REG	20	2	0	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:8321A_MOD	LCMS/MS HIGH	CAWR-14-49294	344675004	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	LCS	1203051666	LCS	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	MB	1203051665	MB	20	2	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

Field Sample ID	MS Lab Sample ID	MSD Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS Spike Recovery	MSD Spike Recovery	MS Upper Limit	MS Lower Limit	MS Reject Limit	RPD	RPD Limit
CAWA-14-49277	1203051656		SW-846:6010C	Aluminum	1373198	03-27-2014	SO	729		125	75			
CAWA-14-49277	1203051656		SW-846:6010C	Aluminum	1373198	03-27-2014	SO	729		125	75			
CAWA-14-49277	1203051656		SW-846:6010C	Iron	1373198	03-27-2014	SO	249		125	75			
CAWA-14-49277	1203051656		SW-846:6010C	Iron	1373198	03-27-2014	SO	249		125	75			

DATA VALIDATION REPORT

Field Sample ID	MS Lab Sample ID	MSD Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS Spike Recovery	MSD Spike Recovery	MS Upper Limit	MS Lower Limit	MS Reject Limit	RPD	RPD Limit
CAWA-14-49277	1203051656		SW-846:6010C	Magnesium	1373198	04-02-2014	SO	143		125	75			
CAWA-14-49277	1203051656		SW-846:6010C	Magnesium	1373198	04-02-2014	SO	143		125	75			
CAWA-14-49277	1203051656		SW-846:6010C	Manganese	1373198	03-27-2014	SO	149		125	75			
CAWA-14-49277	1203051656		SW-846:6010C	Manganese	1373198	03-27-2014	SO	149		125	75			
CAWA-14-49277	1203051656		SW-846:6010C	Potassium	1373198	04-02-2014	SO	144		125	75			
CAWA-14-49277	1203051656		SW-846:6010C	Potassium	1373198	04-02-2014	SO	144		125	75			

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

Field Sample ID	Lab Sample ID	LD Lab Sample ID	Analytical Method	Parameter Name	Sample Matrix	Lab Result	LD Lab Result	Lab Units	Detect Flag	LD Detect Flag	RPD	RPD Limit
CAWA-14-49277	344675001	1203051655	SW-846:6010C	Cobalt	SO	5790	3180	ug/kg	Y	Y	58.1	20

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

DATA VALIDATION REPORT

Location ID	COC Number	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Paramter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detect Flag	Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent	Analysis Lot ID	Validation Status Code	Use Flag
WA-61499	2014-3002	CAWA-14-49277	REG	INIT	INORGANIC	SW-846:6010C	Aluminum		J+	I6b	Y	3170000	ug/kg	3170	mg/kg			SD	03/13/2014		1373199	VAL	Y
WA-61499	2014-3002	CAWA-14-49277	REG	INIT	INORGANIC	SW-846:6010C	Cobalt	*	J	I10a	Y	5790	ug/kg	5.79	mg/kg			SD	03/13/2014		1373199	VAL	Y
WA-61499	2014-3002	CAWA-14-49277	REG	INIT	INORGANIC	SW-846:6010C	Iron		J+	I6b	Y	10400000	ug/kg	10400	mg/kg			SD	03/13/2014		1373199	VAL	Y
WA-61499	2014-3002	CAWA-14-49277	REG	INIT	INORGANIC	SW-846:6010C	Magnesium	N	J+	I6b	Y	1210000	ug/kg	1210	mg/kg			SD	03/13/2014		1373199	VAL	Y
WA-61499	2014-3002	CAWA-14-49277	REG	INIT	INORGANIC	SW-846:6010C	Manganese		J+	I6b	Y	382000	ug/kg	382	mg/kg			SD	03/13/2014		1373199	VAL	Y
WA-61499	2014-3002	CAWA-14-49277	REG	INIT	INORGANIC	SW-846:6010C	Potassium	N	J+	I6b	Y	869000	ug/kg	869	mg/kg			SD	03/13/2014		1373199	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Americium-241	U	U	R5	N	-.0215	pCi/g	-.0215	pCi/g	0.136	0.043	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Bismuth-212	UI	R	R5a	N	1.03	pCi/g	1.03	pCi/g	0.767	0.348	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Cesium-134	U	U	R5	N	.0302	pCi/g	.0302	pCi/g	0.0545	0.0138	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Cesium-137	U	U	R5	N	.0282	pCi/g	.0282	pCi/g	0.0429	0.0189	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Cobalt-60	U	U	R5	N	-.00388	pCi/g	-.00388	pCi/g	0.0497	0.0137	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Protactinium-234m	U	U	R5	N	.4	pCi/g	.4	pCi/g	5.76	1.55	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Sodium-22	U	U	R5	N	.00824	pCi/g	.00824	pCi/g	0.0544	0.0144	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Thorium-234	U	U	R5	N	.653	pCi/g	.653	pCi/g	1.23	0.652	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	EPA:901.1	Uranium-235	U	U	R5	N	.0646	pCi/g	.0646	pCi/g	0.224	0.0981	SD	03/13/2014		1373213	VAL	Y
WR-11	2014-3002	CAWR-14-49293	REG	INIT	RAD	HASL-300:ISOU	Uranium-235/236	U	U	R5	N	.0414	pCi/g	.0414	pCi/g	0.0654	0.0166	SD	03/13/2014		1373335	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Americium-241	U	U	R5	N	.0271	pCi/g	.0271	pCi/g	0.0798	0.0228	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Bismuth-212	UI	R	R5a	N	1.35	pCi/g	1.35	pCi/g	1.33	0.399	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Cesium-134	U	U	R5	N	.0694	pCi/g	.0694	pCi/g	0.0986	0.0246	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Cesium-137	U	U	R5	N	.0754	pCi/g	.0754	pCi/g	0.0769	0.026	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Cobalt-60	U	U	R5	N	-.00713	pCi/g	-.00713	pCi/g	0.0827	0.0223	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Protactinium-234m	U	U	R5	N	3.01	pCi/g	3.01	pCi/g	10.2	2.63	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Sodium-22	U	U	R5	N	.00609	pCi/g	.00609	pCi/g	0.103	0.0285	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Thorium-234		U	R11	N	1.01	pCi/g	1.01	pCi/g	0.786	0.412	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	EPA:901.1	Uranium-235	U	U	R5	N	.103	pCi/g	.103	pCi/g	0.263	0.0931	SD	03/13/2014		1373213	VAL	Y
WR-12	2014-3002	CAWR-14-49294	REG	INIT	RAD	HASL-300:ISOU	Uranium-235/236	U	U	R5	N	.0565	pCi/g	.0565	pCi/g	0.067	0.0188	SD	03/13/2014		1373335	VAL	Y

Reason Code	Description
I10a	The sample and the duplicate sample results were >=5X the RL and the duplicate RPD was >20% for water samples and >35% for soil samples.
I6b	The associated matrix spike recovery was above the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package

DATA VALIDATION REPORT

Reason Code	Description
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
R11	The results for the affected analytes should be regarded as not-detected (U) because the associated sample concentration was less than 3x the 1 sigma TPU.
R5	Analyte is not detected because the amount reported is less than the MDC.
R5a	The MDC and/or TPU documentation is missing. Data may not be acceptable for use.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49277	WA-61499	REG	SW-846:6010C	0	17
CAWA-14-49277	WA-61499	REG	SW-846:6020	0	5
CAWA-14-49277	WA-61499	REG	SW-846:7471A	0	1
CAWA-14-49277	WA-61499	REG	SW-846:8082	0	7
CAWA-14-49277	WA-61499	REG	SW-846:8321A_MOD	0	20
CAWA-14-49278	WA-61499	REG	SW-846:6010C	0	17
CAWA-14-49278	WA-61499	REG	SW-846:6020	0	5
CAWA-14-49278	WA-61499	REG	SW-846:7471A	0	1
CAWA-14-49278	WA-61499	REG	SW-846:8082	0	7
CAWA-14-49278	WA-61499	REG	SW-846:8321A_MOD	0	20
CAWR-14-49293	WR-11	REG	EPA:901.1	0	15
CAWR-14-49293	WR-11	REG	HASL-300:ISOU	0	3
CAWR-14-49293	WR-11	REG	SW-846:6010C	0	17
CAWR-14-49293	WR-11	REG	SW-846:6020	0	5
CAWR-14-49293	WR-11	REG	SW-846:7471A	0	1
CAWR-14-49293	WR-11	REG	SW-846:8082	0	7
CAWR-14-49293	WR-11	REG	SW-846:8321A_MOD	0	20
CAWR-14-49294	WR-12	REG	EPA:901.1	0	15
CAWR-14-49294	WR-12	REG	HASL-300:ISOU	0	3
CAWR-14-49294	WR-12	REG	SW-846:6010C	0	17
CAWR-14-49294	WR-12	REG	SW-846:6020	0	5
CAWR-14-49294	WR-12	REG	SW-846:7471A	0	1
CAWR-14-49294	WR-12	REG	SW-846:8082	0	7

DATA VALIDATION REPORT

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWR-14-49294	WR-12	REG	SW-846:8321A_MOD	0	20

GEL Laboratories LLC
a member of The GEL Group INC

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April 11, 2014

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL ER
Work Order: 344675
SDG: 2014-3002

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on March 15, 2014, and analyzed for Explosives by LCMSMS, GC Semivolatile PCB, Metals and Radiochemistry. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Hope Taylor for
Valerie Davis
Project Manager

Purchase Order: 63641-10
Chain of Custody: 2014-3002
Enclosures

ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Work Order #: 344675
SDG: 2014-3002

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Case Narrative

Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Workorder #: 344675
SDG # : 2014-3002

April 11, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on March 15, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
344675001	CAWA-14-49277
344675002	CAWA-14-49278
344675003	CAWR-14-49293
344675004	CAWR-14-49294

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, GC Semivolatile PCB, Metals and Radiochemistry.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.

Hope Taylor for
Valerie Davis
Project Manager

List of current GEL Certifications as of 11 April 2014

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122014−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−14−9
Utah NELAP	SC000122013−11
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Chain of Custody and Supporting Documentation

General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

344675

ADEP

COC/Lab Request #: 2014-3002

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011

Project Number :

Site Name: Los Alamos National Laboratory

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Gamma Spec	ISOU	Tal Metals
CAWA-14-49277	Mar 13 2014	11:50	SO	1			1
CAWA-14-49278	Mar 13 2014	12:05	SO	1			1
CAWR-14-49293	Mar 13 2014	12:15	SO	1	1	1	1
CAWR-14-49294	Mar 13 2014	12:45	SO	1	1	1	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Sheri Sherwood	Sheri Sherwood	3/14/14 3pm	P. Dent	Patricia Dent	3/15/14 0900
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	SDG/AR/COC/Work Order: 344475
Received By: P. Wilcent	Date Received: 3/15/14

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		X	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0CPM
Classified Radioactive II or III by RSO?		X	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		X	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		X	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe) 2,4c
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 130462966
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	X			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	X			Sample ID's and containers affected:
7	Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
11	Number of containers received match number indicated on COC?			X	Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			X	Clients
13	COC form is properly signed in relinquished/received sections?	X			
14	Carrier and tracking number.	X			Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 5908 1776 7969 5908 1776 7958 5908 1776 7947 2,4c

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials MP Date 3-17-14 Page 1 of 1

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 14MAR14
ACTWGT: 28.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWH0

2c

FedEx
Express
E

3 of 3
MPS# 0263 5908 1776 7969
Mstr# 5908 1776 7947 0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 14MAR14
ACTWGT: 53.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWH0

4c

FedEx Express

2 of 3
MPS# 0263 5908 1776 7958
Mstr# 5908 1776 7947

0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 14MAR14
ACTWGT: 47.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWH0

4c

FedEx Express

1 of 3
TRK# 0201 5908 1776 7947
MASTER

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Explosives by LCMSMS Analysis

Case Narrative

LC-MS/MS Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3002

Method/Analysis Information

Procedure:	**Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS) by SW-846 Method 8321 Modified (8321M)**
Analytical Method:	SW846 8321A Modified
Prep Method:	SW846 8330 PREP
Analytical Batch Number:	1373204
Prep Batch Number:	1373203

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8321A Modified:

Sample ID	Client ID
344675001	CAWA-14-49277
344675002	CAWA-14-49278
344675003	CAWR-14-49293
344675004	CAWR-14-49294
1203051665	Method Blank (MB)
1203051666	Laboratory Control Sample (LCS)
1203051667	344675001(CAWA-14-49277) Matrix Spike (MS)
1203051668	344675001(CAWA-14-49277) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP).

The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 17.

Primary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 344675001 (CAWA-14-49277) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
A final internal standard concentration of 100ug/L is employed in order to meet the minimum response factor requirement of 0.01 per EPA Method 8000C for the analysis of explosives on the API 4000.

The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Secondary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 344675001 (CAWA-14-49277) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
The internal standard was not added to the Secondary analyte extracts.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents.

A data exception report (DER) was not generated for this SDG.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Additional Comments
Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Primary analyte analysis. It is coupled with a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for the Primary analyte analysis.

The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package.

Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the Primary Nitroaromatic and Nitramine analytes is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

The detection of the Secondary analytes is accomplished through analysis on the following reversed phase column:

YMC: J'sphere ODS-H80, 150 x 4.6mm I.D.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3002 GEL Work Order: 344675

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Michael A. Penny Jr. **Name: Michael Penny**

Date: 09 APR 2014 **Title: Group Leader**

Sample Data Summary

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675001

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321042.wiff

Date Analyzed: 22-MAR-14 15:09

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	495	U	149	495
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	495	U	149	495
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	495	U	149	495
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	495	U	149	495
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	495	U	149	495
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	495	U	149	495
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	495	U	149	495
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	495	U	149	495
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	495	U	149	495
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	495	U	149	495
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	495	U	149	495
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	495	U	149	495
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	495	U	149	495
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675001

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	495	U	149	495
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	990	U	248	990
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675001

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04080016.wiff

Date Analyzed: 08-APR-14 15:46

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	990	U	297	990
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	990	U	297	990
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	990	U	297	990
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1980	U	653	1980
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1980	U	495	1980
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49278

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675002

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321045.wiff

Date Analyzed: 22-MAR-14 16:54

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	495	U	149	495
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	495	U	149	495
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	495	U	149	495
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	495	U	149	495
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	495	U	149	495
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	495	U	149	495
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	495	U	149	495
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	495	U	149	495
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	495	U	149	495
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	495	U	149	495
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	495	U	149	495
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	495	U	149	495
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	495	U	149	495
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49278

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675002

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	495	U	149	495
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	990	U	248	990
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49278

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675002

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04080019.wiff

Date Analyzed: 08-APR-14 16:36

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	990	U	297	990
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	990	U	297	990
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	990	U	297	990
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1980	U	653	1980
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1980	U	495	1980
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWR-14-49293

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675003

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321049.wiff

Date Analyzed: 22-MAR-14 19:15

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWR-14-49293

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675003

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	U	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWR-14-49293

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675003

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04080020.wiff

Date Analyzed: 08-APR-14 16:53

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWR-14-49294

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675004

Sample Amount 2.04 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321050.wiff

Date Analyzed: 22-MAR-14 19:50

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	490	U	147	490
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	490	U	147	490
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	490	U	147	490
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	490	U	147	490
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	490	U	147	490
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	490	U	147	490
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	490	U	147	490
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	490	U	147	490
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	490	U	147	490
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	490	U	147	490
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	490	U	147	490
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	490	U	147	490
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	490	U	147	490
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWR-14-49294

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675004

Sample Amount 2.04 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	490	U	147	490
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	980	U	245	980
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWR-14-49294

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 344675004

Sample Amount 2.04 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04080021.wiff

Date Analyzed: 08-APR-14 17:09

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	980	U	294	980
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	980	U	294	980
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	980	U	294	980
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1960	U	647	1960
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1960	U	490	1960
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC **GEL Job No (SDG):** 2014-3002

Lab Code: GEL **HPLC Column:** Ultracarb Phenomenex 5u ODS (20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
344675001	CAWA-14-49277	101	62 - 121	
344675002	CAWA-14-49278	98.8	62 - 121	
344675003	CAWR-14-49293	96.8	62 - 121	
344675004	CAWR-14-49294	101	62 - 121	
1203051665	MB for batch 1373203	94.4	62 - 121	
1203051666	LCS for batch 1373203	98.8	62 - 121	
1203051667	CAWA-14-49277MS	93.2	62 - 121	
1203051668	CAWA-14-49277MSD	91.2	62 - 121	

DNT = 3,4-Dinitrotoluene

Lab Code: GEL **HPLC Column:** YMC J'sphere ODS-H80

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
344675001	CAWA-14-49277	102	62 - 121	
344675002	CAWA-14-49278	102	62 - 121	
344675003	CAWR-14-49293	107	62 - 121	
344675004	CAWR-14-49294	109	62 - 121	
1203051665	MB for batch 1373203	104	62 - 121	
1203051666	LCS for batch 1373203	104	62 - 121	
1203051667	CAWA-14-49277MS	100	62 - 121	
1203051668	CAWA-14-49277MSD	97.6	62 - 121	

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Extract Batch Code: 1373203

Date Extracted: 19-MAR-14

GEL LCS ID: 1203051666

GEL LCSDUP ID:

Analysis Date/Time: 22-MAR-14 14:34

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4,6-Trinitrotoluene	5000	4650	93					67 - 126
2,4-Dinitrotoluene	5000	4900	98					69 - 122
2,6-Dinitrotoluene	5000	4870	97.4					65 - 119
2-Amino-4,6-dinitrotoluene	5000	4590	91.8					67 - 126
4-Amino-2,6-dinitrotoluene	5000	5250	105					62 - 135
HMX	5000	5000	100					58 - 123
Nitrobenzene	5000	4550	91					58 - 130
PETN	5000	4130	82.6					61 - 125
RDX	5000	5060	101					58 - 136
1,3,5-Trinitrobenzene	5000	5150	103					63 - 128
Tetryl	5000	3400	68					36 - 131
m-Dinitrobenzene	5000	5140	103					64 - 129
m-Nitrotoluene	5000	4410	88.2					60 - 126
o-Nitrotoluene	5000	4710	94.2					60 - 121
p-Nitrotoluene	5000	4870	97.4					65 - 119

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Extract Batch Code: 1373203

Date Extracted: 19-MAR-14

GEL LCS ID: 1203051666

GEL LCSDUP ID:

Analysis Date/Time: 08-APR-14 15:29

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4-Diamino-6-nitrotoluene	5000	5030	101					65 - 116
2,6-Diamino-4-nitrotoluene	5000	4730	94.6					65 - 127
3,5-Dinitroaniline	5000	4470	89.4					61 - 131
TATB	10000	4270	42.7					36 - 156
tris(o-cresyl) phosphate	5000	5330	107					70 - 120

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAWA-14-49277

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Extract Batch Code: 1373203

Date Extracted: 19-MAR-14

GEL Spike ID: 1203051667

GEL SpikeDup ID: 1203051668

Analysis Date/Time: 22-MAR-14 15:44

MSD Analysis Date/Time: 22-MAR-14 16:19

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
1,3,5-Trinitrobenzene	4950.495	0	4640	93.8	4560	92.2	1.72	30	63 - 121
2,4,6-Trinitrotoluene	4950.495	0	4720	95.4	4570	92.4	3.2	30	60 - 129
2,4-Dinitrotoluene	4950.495	0	4980	101	4350	87.8	13.6	30	69 - 124
2,6-Dinitrotoluene	4950.495	0	4790	96.8	4660	94.2	2.72	30	65 - 119
2-Amino-4,6-dinitrotoluene	4950.495	0	4620	93.4	4260	86	8.25	30	67 - 133
4-Amino-2,6-dinitrotoluene	4950.495	0	5470	110	5190	105	5.2	30	62 - 135
HMX	4950.495	0	4390	88.6	5040	102	13.9	30	54 - 127
Nitrobenzene	4950.495	0	4370	88.2	4240	85.6	2.99	30	58 - 120
PETN	4950.495	0	3960	80	3910	79	1.26	30	58 - 125
RDX	4950.495	0	4320	87.2	4570	92.4	5.79	30	45 - 135
Tetryl	4950.495	0	4320	87.2	4260	86	1.39	30	36 - 130
m-Dinitrobenzene	4950.495	0	4980	101	4850	98	2.62	30	64 - 129
m-Nitrotoluene	4950.495	0	4690	94.8	4580	92.6	2.35	30	59 - 126
o-Nitrotoluene	4950.495	0	4480	90.4	4030	81.4	10.5	30	60 - 116
p-Nitrotoluene	4950.495	0	4770	96.4	4550	92	4.67	30	61 - 120

#Column to be used to flag recovery and RPD values with an asterisk

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAWA-14-49277

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Extract Batch Code: 1373203

Date Extracted: 19-MAR-14

GEL Spike ID: 1203051667

GEL SpikeDup ID: 1203051668

Analysis Date/Time: 08-APR-14 16:02

MSD Analysis Date/Time: 08-APR-14 16:19

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec	#	MSD Conc	MSD Rec	#	RPD	#	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	4950.495	0	4430	89.4		4460	90		.669		30	61 - 133
2,6-Diamino-4-nitrotoluene	4950.495	0	4460	90		4490	90.6		.664		30	65 - 119
3,5-Dinitroaniline	4950.495	0	4390	88.6		4340	87.6		1.14		30	61 - 131
TATB	9900.990	0	4810	48.6		4010	40.5		18.2		30	20 - 164
tris(o-cresyl) phosphate	4950.495	0	5560	112		5130	104		8.15		30	70 - 123

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1373203

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051665

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321040.wiff

Date Analyzed: 22-MAR-14 13:59

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1373203

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051665

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	U	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1373203

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051665

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04080014.wiff

Date Analyzed: 08-APR-14 15:12

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1373203

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051666

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0321041.wiff

Date Analyzed: 22-MAR-14 14:34

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	3400		150	500
479-45-8	*Tetryl*				
78-11-5	PETN	4130		250	1000
78-11-5	*PETN*				
99-08-1	m-Nitrotoluene	4410		150	500
99-08-1	*m-Nitrotoluene*				
98-95-3	Nitrobenzene	4550		150	500
98-95-3	*Nitrobenzene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4590		150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4650		150	500
118-96-7	*2,4,6-Trinitrotoluene*				
88-72-2	o-Nitrotoluene	4710		150	500
88-72-2	*o-Nitrotoluene*				
606-20-2	2,6-Dinitrotoluene	4870		150	500
606-20-2	*2,6-Dinitrotoluene*				
99-99-0	p-Nitrotoluene	4870		150	500
99-99-0	*p-Nitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4900		150	500
121-14-2	*2,4-Dinitrotoluene*				
2691-41-0	HMX	5000		150	500
2691-41-0	*HMX*				
121-82-4	RDX	5060		150	500
121-82-4	*RDX*				
99-65-0	m-Dinitrobenzene	5140		150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1373203

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051666

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-35-4	1,3,5-Trinitrobenzene	5150		150	500
99-35-4	*1,3,5-Trinitrobenzene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5250		150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1373203

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051666

Sample Amount 2 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04080015.wiff

Date Analyzed: 08-APR-14 15:29

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	4270		300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	4470		300	1000
618-87-1	*3,5-Dinitroaniline*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4730		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	5030		500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5330		300	1000
78-30-8	*tris(o-cresyl) phosphate*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277(344675001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051667

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0321043.wiff

Date Analyzed: 22-MAR-14 15:44

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	3960		248	990
78-11-5	*PETN*				
121-82-4	RDX	4320		149	495
121-82-4	*RDX*				
479-45-8	Tetryl	4320		149	495
479-45-8	*Tetryl*				
98-95-3	Nitrobenzene	4370		149	495
98-95-3	*Nitrobenzene*				
2691-41-0	HMX	4390		149	495
2691-41-0	*HMX*				
88-72-2	o-Nitrotoluene	4480		149	495
88-72-2	*o-Nitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4620		149	495
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4640		149	495
99-35-4	*1,3,5-Trinitrobenzene*				
99-08-1	m-Nitrotoluene	4690		149	495
99-08-1	*m-Nitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4720		149	495
118-96-7	*2,4,6-Trinitrotoluene*				
99-99-0	p-Nitrotoluene	4770		149	495
99-99-0	*p-Nitrotoluene*				
606-20-2	2,6-Dinitrotoluene	4790		149	495
606-20-2	*2,6-Dinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4980		149	495
121-14-2	*2,4-Dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277(344675001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051667

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-65-0	m-Dinitrobenzene	4980		149	495
99-65-0	*m-Dinitrobenzene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5470		149	495
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277(344675001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051667

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04080017.wiff

Date Analyzed: 08-APR-14 16:02

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
618-87-1	3,5-Dinitroaniline	4390		297	990
618-87-1	*3,5-Dinitroaniline*				
6629-29-4	2,4-Diamino-6-nitrotoluene	4430		495	1980
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4460		653	1980
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
3058-38-6	TATB	4810		297	990
3058-38-6	*TATB*				
78-30-8	tris(o-cresyl) phosphate	5560		297	990
78-30-8	*tris(o-cresyl) phosphate*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277(344675001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051668

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0321044.wiff

Date Analyzed: 22-MAR-14 16:19

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	3910		248	990
78-11-5	*PETN*				
88-72-2	o-Nitrotoluene	4030		149	495
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	4240		149	495
98-95-3	*Nitrobenzene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4260		149	495
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	4260		149	495
479-45-8	*Tetryl*				
121-14-2	2,4-Dinitrotoluene	4350		149	495
121-14-2	*2,4-Dinitrotoluene*				
99-99-0	p-Nitrotoluene	4550		149	495
99-99-0	*p-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4560		149	495
99-35-4	*1,3,5-Trinitrobenzene*				
118-96-7	2,4,6-Trinitrotoluene	4570		149	495
118-96-7	*2,4,6-Trinitrotoluene*				
121-82-4	RDX	4570		149	495
121-82-4	*RDX*				
99-08-1	m-Nitrotoluene	4580		149	495
99-08-1	*m-Nitrotoluene*				
606-20-2	2,6-Dinitrotoluene	4660		149	495
606-20-2	*2,6-Dinitrotoluene*				
99-65-0	m-Dinitrobenzene	4850		149	495
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277(344675001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051668

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
2691-41-0	HMX	5040		149	495
2691-41-0	*HMX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5190		149	495
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49277(344675001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3002

Matrix: SOIL

GEL Sample ID: 1203051668

Sample Amount 2.02 g

Date Received: 15-MAR-14

Moisture:

Extraction Batch ID: 1373203

Extraction Type Sonication

Date Extracted: 19-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04080018.wiff

Date Analyzed: 08-APR-14 16:19

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	4010		297	990
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	4340		297	990
618-87-1	*3,5-Dinitroaniline*				
6629-29-4	2,4-Diamino-6-nitrotoluene	4460		495	1980
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4490		653	1980
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5130		297	990
78-30-8	*tris(o-cresyl) phosphate*				

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 21-MAR-14 15:15

GEL Data File: EXP0321001.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 21-MAR-14 15:50

GEL Data File: EXP0321002.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 08-APR-14 11:35

GEL Data File: EXS04080001.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
2,6-Diamino-4-nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 08-APR-14 11:52

GEL Data File: EXS04080002.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 21-MAR-14 19:55

GEL Data File: EXP0321009.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 21-MAR-14 21:05

GEL Data File: EXP0321011.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 21-MAR-14 22:50

GEL Data File: EXP0321014.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 22-MAR-14 02:19

GEL Data File: EXP0321020.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 22-MAR-14 03:29

GEL Data File: EXP0321022.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 22-MAR-14 09:55

GEL Data File: EXP0321033.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 22-MAR-14 11:04

GEL Data File: EXP0321035.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 22-MAR-14 13:24

GEL Data File: EXP0321039.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK10

Analysis Date: 22-MAR-14 18:05

GEL Data File: EXP0321047.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK11

Analysis Date: 22-MAR-14 22:45

GEL Data File: EXP0321055.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK12

Analysis Date: 22-MAR-14 23:55

GEL Data File: EXP0321057.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 08-APR-14 14:05

GEL Data File: EXS04080010.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	6.21
TATB	0	0
3,5-Dinitroaniline	0	1.36
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 08-APR-14 14:39

GEL Data File: EXS04080012.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	3.8
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3002

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 08-APR-14 18:16

GEL Data File: EXS04080025.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

PCB Analysis

Case Narrative

PCB Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3002

Method/Analysis Information

Procedure:	**Analysis of Polychlorinated Biphenyls by ECD**
Analytical Method:	SW846 3541/8082
Prep Method:	SW846 3541
Analytical Batch Number:	1373644
Prep Batch Number:	1373626

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082:

Sample ID	Client ID
344675001	CAWA-14-49277
344675002	CAWA-14-49278
344675003	CAWR-14-49293
344675004	CAWR-14-49294
1203052771	Method Blank (MB)
1203052772	344589004(CAPU-14-56568) Matrix Spike (MS)
1203052773	344589004(CAPU-14-56568) Matrix Spike Duplicate (MSD)
1203052774	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 20.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standards (ICV or CCV) met the acceptance criteria. All analytes were within the established retention time windows for this method.

One of the five quantified peaks did not meet recovery acceptance criteria in Aroclor-1016 standards analyzed for this SDG; however, the average concentration of the five quantified peaks met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for the samples in this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
An ARSL sample of similar matrix in SDG 2014-2988 was selected for the matrix spike and matrix spike duplicate analysis for this batch of the samples.

Matrix Spike (MS) Recovery Statement
The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD did not meet the acceptance limits due to relatively lower spike recovery in the MS.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns. All sample extracts were cleaned using alumina. Additionally, copper was added to all sample extracts to remove sulfur.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this batch.

Miscellaneous Information

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for the samples in this SDG in this batch.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

Due to software issue, the surrogate recovery range was not indicated or possibly indicated incorrectly in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Due to rounding differences in the calculation between the forms, the data reported in Sample Summary (form 1) and Spike Recovery Report (form 3) may differ slightly from the data reported in Identification Summary (form 10).

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD9A.I_1	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 1	30m x 0.25mm, 0.25um
ECD9A.I_2	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 2	30m x 0.25mm, 0.20um

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS−LANS−MTOA6−25093−GEL)

Client SDG: 2014−3002 GEL Work Order: 344675

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

P Organics−−The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re−analyzed without re−extraction.
RE Indicates that sample is re−extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP−like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Jimin Cao **Name: Jimin Cao**

Date: 25 MAR 2014 **Title: Data Validator**

Sample Data Summary

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−3002**	**Date Collected:**	**03/13/2014 11:50**	**Matrix:**	**SO**
Lab Sample ID:	**344675001**	**Date Received:**	**03/15/2014 09:00**	**%Moisture:**	**4.5**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA−14−49277**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 14:59**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.13 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2332.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2332.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.48	ug/kg	1.16	3.48	1
11104−28−2	Aroclor−1221	U	3.48	ug/kg	1.16	3.48	1
11141−16−5	Aroclor−1232	U	3.48	ug/kg	1.16	3.48	1
53469−21−9	Aroclor−1242	U	3.48	ug/kg	1.16	3.48	1
12672−29−6	Aroclor−1248	U	3.48	ug/kg	1.16	3.48	1
11097−69−1	Aroclor−1254	U	3.48	ug/kg	1.16	3.48	1
11096−82−5	Aroclor−1260	U	3.48	ug/kg	1.16	3.48	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−3002**	**Date Collected:**	**03/13/2014 12:05**	**Matrix:**	**SO**
Lab Sample ID:	**344675002**	**Date Received:**	**03/15/2014 09:00**	**%Moisture:**	**5.8**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA−14−49278**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 15:14**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.17 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2333.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2333.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.52	ug/kg	1.17	3.52	1
11104−28−2	Aroclor−1221	U	3.52	ug/kg	1.17	3.52	1
11141−16−5	Aroclor−1232	U	3.52	ug/kg	1.17	3.52	1
53469−21−9	Aroclor−1242	U	3.52	ug/kg	1.17	3.52	1
12672−29−6	Aroclor−1248	U	3.52	ug/kg	1.17	3.52	1
11097−69−1	Aroclor−1254	U	3.52	ug/kg	1.17	3.52	1
11096−82−5	Aroclor−1260	U	3.52	ug/kg	1.17	3.52	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−3002**	**Date Collected:**	**03/13/2014 12:15**	**Matrix:**	**SO**
Lab Sample ID:	**344675003**	**Date Received:**	**03/15/2014 09:00**	**%Moisture:**	**24.8**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWR−14−49293**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 15:57**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.13 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2336.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2336.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	4.41	ug/kg	1.47	4.41	1
11104−28−2	Aroclor−1221	U	4.41	ug/kg	1.47	4.41	1
11141−16−5	Aroclor−1232	U	4.41	ug/kg	1.47	4.41	1
53469−21−9	Aroclor−1242	U	4.41	ug/kg	1.47	4.41	1
12672−29−6	Aroclor−1248	U	4.41	ug/kg	1.47	4.41	1
11097−69−1	Aroclor−1254	U	4.41	ug/kg	1.47	4.41	1
11096−82−5	Aroclor−1260	U	4.41	ug/kg	1.47	4.41	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−3002**	**Date Collected:**	**03/13/2014 12:45**	**Matrix:**	**SO**
Lab Sample ID:	**344675004**	**Date Received:**	**03/15/2014 09:00**	**%Moisture:**	**24.4**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWR−14−49294**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 16:11**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.35 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2337.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2337.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	4.36	ug/kg	1.45	4.36	1
11104−28−2	Aroclor−1221	U	4.36	ug/kg	1.45	4.36	1
11141−16−5	Aroclor−1232	U	4.36	ug/kg	1.45	4.36	1
53469−21−9	Aroclor−1242	U	4.36	ug/kg	1.45	4.36	1
12672−29−6	Aroclor−1248	U	4.36	ug/kg	1.45	4.36	1
11097−69−1	Aroclor−1254	U	4.36	ug/kg	1.45	4.36	1
11096−82−5	Aroclor−1260	U	4.36	ug/kg	1.45	4.36	1

Quality Control Summary

PCB

Surrogate Recovery Report

SDG Number: 2014−3002

Matrix Type: SOLID

Sample ID	Client ID	4CMX 1 %REC #	4CMX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #
1203052771	MB for batch 1373626	80	86	86	87
1203052774	LCS for batch 1373626	73	78	78	78
1203052772	CAPU−14−56568MS	74	74	76	83
1203052773	CAPU−14−56568MSD	73	71	88	94
344675001	CAWA−14−49277	84	85	86	89
344675002	CAWA−14−49278	87	87	98	103
344675003	CAWR−14−49293	74	76	94	93
344675004	CAWR−14−49294	86	91	99	101

Surrogate		Acceptance Limits
4CMX	= 4cmx	(44%−106%)
DCB	= Decachlorobiphenyl	(35%−119%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014−3002**	**Sample Type:**	**Matrix Spike**	
Client ID:	**CAPU−14−56568MS**	**Matrix:**	**SED**	
Lab Sample ID	**1203052772**	**%Moisture:**	**19.6**	
Instrument:	**ECD9A.I**	**Analysis Date:**	**03/23/2014 13:18**	**Dilution: 1**
Analyst:	**YS1**	**Prep Batch ID:**	**1373626**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1373644**	

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674−11−2	MS	Aroclor−1016	41.5	0.00	U	29.3	71	25−125
11096−82−5	MS	Aroclor−1260	41.5	14.7		45.6	75	28−127

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014−3002**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**CAPU−14−56568MSD**	**Matrix:**	**SED**	
Lab Sample ID	**1203052773**	**%Moisture:**	**19.6**	
Instrument:	**ECD9A.I**	**Analysis Date:**	**03/23/2014 13:33**	**Dilution: 1**
Analyst:	**YS1**	**Prep Batch ID:**	**1373626**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1373644**	

CAS No	Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
12674−11−2	MSD Aroclor−1016	41.3	0.00 U	44.2	107	25−125	40 *	0−30
11096−82−5	MSD Aroclor−1260	41.3	14.7	50.0	85	28−127	9	0−30

PCB

Quality Control Summary
Spike Recovery Report

SDG Number: **2014−3002**
Client ID: **LCS for batch 1373626**
Lab Sample ID **1203052774**
Instrument: **ECD9A.I**
Analyst: **YS1**
Inj. Vol: **1 uL**

Sample Type: **Laboratory Control Sample**
Matrix: **SOIL**
Analysis Date: **03/23/2014 10:35**
Prep Batch ID: **1373626**
Batch ID: **1373644**
Dilution: 1

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674−11−2	LCS	Aroclor−1016	33.3	0.0	22.9	69	39−120
11096−82−5	LCS	Aroclor−1260	33.3	0.0	28.1	85	50−116

Method Blank Summary

SDG Number:	**2014−3002**	**Client:**	**ARSL004**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 1373626**	**Instrument ID:**	**ECD9A.I_1** **ECD9A.I_2**	**Data File:**	**032314.S\E9c2312.D** **032314.S\E9c2312.D**
Lab Sample ID:	**1203052771**				
Column:	**RTX−CLPEST 1** **RTX−CLPEST 2**	**Prep Date:**	**03/21/2014 09:40**	**Analyzed:**	**03/23/14 10:24**

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 1373626	1203052774	032314.S\E9c2313.D 032314.S\E9c2313.D	03/23/14	1035
02 CAPU−14−56568MS	1203052772	032314.S\E9c2325.D 032314.S\E9c2325.D	03/23/14	1318
03 CAPU−14−56568MSD	1203052773	032314.S\E9c2326.D 032314.S\E9c2326.D	03/23/14	1333
04 CAWA−14−49277	344675001	032314.S\E9c2332.D 032314.S\E9c2332.D	03/23/14	1459
05 CAWA−14−49278	344675002	032314.S\E9c2333.D 032314.S\E9c2333.D	03/23/14	1514
06 CAWR−14−49293	344675003	032314.S\E9c2336.D 032314.S\E9c2336.D	03/23/14	1557
07 CAWR−14−49294	344675004	032314.S\E9c2337.D 032314.S\E9c2337.D	03/23/14	1611

Quality Control Data

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−3002**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203052771**				
Client Sample:	**QC for batch 1373626**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**MB for batch 1373626**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 10:24**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2312.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2312.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016	U	3.33	ug/kg	1.11	3.33	1
11104−28−2	Aroclor−1221	U	3.33	ug/kg	1.11	3.33	1
11141−16−5	Aroclor−1232	U	3.33	ug/kg	1.11	3.33	1
53469−21−9	Aroclor−1242	U	3.33	ug/kg	1.11	3.33	1
12672−29−6	Aroclor−1248	U	3.33	ug/kg	1.11	3.33	1
11097−69−1	Aroclor−1254	U	3.33	ug/kg	1.11	3.33	1
11096−82−5	Aroclor−1260	U	3.33	ug/kg	1.11	3.33	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014−3002**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203052774**				
Client Sample:	**QC for batch 1373626**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**LCS for batch 1373626**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL−OA−E−040**
Batch ID:	**1373644**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**03/23/2014 10:35**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/21/2014 09:40**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**032314.S\E9c2313.D**	**Column:**	**1 RTX−CLPEST 1**		
	032314.S\E9c2313.D		**2 RTX−CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674−11−2	Aroclor−1016		22.9	ug/kg	1.11	3.33	2
11104−28−2	Aroclor−1221	U	3.33	ug/kg	1.11	3.33	1
11141−16−5	Aroclor−1232	U	3.33	ug/kg	1.11	3.33	1
53469−21−9	Aroclor−1242	U	3.33	ug/kg	1.11	3.33	1
12672−29−6	Aroclor−1248	U	3.33	ug/kg	1.11	3.33	1
11097−69−1	Aroclor−1254	U	3.33	ug/kg	1.11	3.33	1
11096−82−5	Aroclor−1260		28.1	ug/kg	1.11	3.33	2

Metals Analysis

Case Narrative

Metals Fractional Narrative
ARS International, LLC (ARSL)
SDG 2014-3002

Sample Analysis

Sample ID	Client ID
344675001	CAWA-14-49277
344675002	CAWA-14-49278
344675003	CAWR-14-49293
344675004	CAWR-14-49294
1203051653	Method Blank (MB) **ICP**
1203051654	Laboratory Control Sample (LCS)
1203051657	344675001(CAWA-14-49277L) Serial Dilution (SD)
1203051655	344675001(CAWA-14-49277D) Sample Duplicate (DUP)
1203051656	344675001(CAWA-14-49277S) Matrix Spike (MS)
1203060917	344675001(CAWA-14-49277PS) Post Spike (PS)
1203051658	Method Blank (MB) **ICP-MS**
1203051659	Laboratory Control Sample (LCS)
1203051662	344675001(CAWA-14-49277L) Serial Dilution (SD)
1203051660	344675001(CAWA-14-49277D) Sample Duplicate (DUP)
1203051661	344675001(CAWA-14-49277S) Matrix Spike (MS)
1203060869	Method Blank (MB) **CVAA**
1203060870	Laboratory Control Sample (LCS)
1203060873	344682001(CAAN-14-56601L) Serial Dilution (SD)
1203060871	344682001(CAAN-14-56601D) Sample Duplicate (DUP)
1203060872	344682001(CAAN-14-56601S) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" basis.

Method/Analysis Information

Analytical Batch:	1373199, 1373201 and 1376959
Prep Batch :	1373198, 1373200 and 1376958
Standard Operating Procedures:	GL-MA-E-013 REV# 22, GL-MA-E-009 REV# 22, GL-MA-E-014 REV# 25 and GL-MA-E-010 REV# 27
Analytical Method:	SW846 3050B/6010C, SW846 3050B/6020A and SW846 7471A
Prep Method :	SW846 3050B and SW846 7471A Prep

Preparation/Analytical Method Verification
The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis-ICP was performed on a PE 7300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL Requirements
The CRDL standard recoveries met the advisory control limits except for potassium in the initial and closing PQL standard in file 040214-1 at 07:12 and 10:27. Potassium recovered high; however the analyte concentrations in client samples were greater than two times the PQL.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 344675001 (CAWA-14-49277)-ICP and ICP-MS and 344682001 (CAAN-14-56601)-CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS did not meet all the recommended quality control acceptance criteria for percent recoveries for the applicable analytes. Recoveries for magnesium and potassium were not within the acceptance limits in sample 1203051656 (CAWA-14-49277)-ICP. See data exception report (DER ID 1282351) in the miscellaneous data section of this data package.

Duplicate Relative Percent Difference (RPD) Statement
The relative percent difference (RPD) obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the contract required detection limit (RL), a control of +/-RL is used to evaluate the DUP results. Not all applicable analytes met these requirements. The RPD value for cobalt in sample 1203051655 (CAWA-14-49277) was not within the acceptance limits. See data exception report (DER ID 1282351) in the miscellaneous data section of this data package.

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the absence of matrix interferences in the post-digested sample.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the established acceptance criteria.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG were diluted the standard two times for solids analyzed on the ICPMS.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. Data exception report (DER ID 1282351) was generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Pat Steele **Date:** 04/11/2014

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3002 GEL Work Order: 344675

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

J Value is estimated

N Metals--The Matrix spike sample recovery is not within specified control limits

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by Pat Steele 04/11/2014

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3002 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344675001 **BASIS:** Dry Weight **DATE COLLECTED** 13−MAR−14

CLIENT ID: CAWA−14−49277 **LEVEL:** Low **DATE RECEIVED** 15−MAR−14

MATRIX: SO **%SOLIDS:** 95.5

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	3170000	ug/kg		7100	20900	20900	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−36−0	Antimony	1040	ug/kg	U	344	1040	1040	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−38−2	Arsenic	1150	ug/kg		201	1000	1000	2	MS	BAJ	03/31/14 23:35	140331−3	1373201
7440−39−3	Barium	109000	ug/kg		104	522	522	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−41−7	Beryllium	528	ug/kg		20.1	100	100	2	MS	BAJ	04/03/14 12:45	140403−5	1373201
7440−43−9	Cadmium	522	ug/kg	U	104	522	522	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−70−2	Calcium	2150000	ug/kg		8350	26100	26100	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−47−3	Chromium	4990	ug/kg		157	522	522	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−48−4	Cobalt	5790	ug/kg	*	157	522	522	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−50−8	Copper	3870	ug/kg		313	1040	1040	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7439−89−6	Iron	10400000	ug/kg		8350	26100	26100	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7439−92−1	Lead	8950	ug/kg		344	1040	1040	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7439−95−4	Magnesium	1210000	ug/kg	N	8870	31300	31300	1	P	HSC	04/02/14 08:44	040214−1	1373199
7439−96−5	Manganese	382000	ug/kg		209	1040	1040	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7439−97−6	Mercury	4.88	ug/kg	J	4.09	12.2	12.2	1	AV	NOR1	04/03/14 10:37	040314S1−6	1376959
7440−02−0	Nickel	5620	ug/kg		100	401	401	2	MS	BAJ	04/01/14 16:26	140401−4	1373201
7440−09−7	Potassium	869000	ug/kg	N	6680	26100	26100	1	P	HSC	04/02/14 08:44	040214−1	1373199
7782−49−2	Selenium	1000	ug/kg	U	331	1000	1000	2	MS	BAJ	03/31/14 23:35	140331−3	1373201
7440−22−4	Silver	522	ug/kg	U	104	522	522	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−23−5	Sodium	85000	ug/kg		7300	26100	26100	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−28−0	Thallium	92.1	ug/kg	J	60.2	401	401	2	MS	BAJ	03/31/14 23:35	140331−3	1373201
7440−62−2	Vanadium	14900	ug/kg		104	522	522	1	P	HSC	03/27/14 11:26	032714A−2	1373199
7440−66−6	Zinc	39800	ug/kg		417	1040	1040	1	P	HSC	03/27/14 11:26	032714A−2	1373199

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1373199	1373198	SW846 3050B	0.502	g	50	mL	03/19/14	AXG2
1373201	1373200	SW846 3050B	0.522	g	50	mL	03/19/14	MTM1
1376959	1376958	SW846 7471A Prep	0.515	g	30	mL	04/02/14	AXS5
1377528	1377527	SW846 3050B	0.506	g	50	mL	04/04/14	MTM1

***Analytical Methods:**

P **SW846 3050B/6010C**
MS **SW846 3050B/6020A**
AV **SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3002 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344675002 **BASIS:** Dry Weight **DATE COLLECTED** 13−MAR−14

CLIENT ID: CAWA−14−49278 **LEVEL:** Low **DATE RECEIVED** 15−MAR−14

MATRIX: SO **%SOLIDS:** 94.2

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2760000	ug/kg		6990	20600	20600	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−36−0	Antimony	1030	ug/kg	U	339	1030	1030	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−38−2	Arsenic	693	ug/kg	J	207	1040	1040	2	MS	BAJ	04/01/14 00:08	140331−3	1373201
7440−39−3	Barium	79000	ug/kg		103	514	514	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−41−7	Beryllium	355	ug/kg		20.7	104	104	2	MS	BAJ	04/03/14 12:54	140403−5	1373201
7440−43−9	Cadmium	514	ug/kg	U	103	514	514	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−70−2	Calcium	1520000	ug/kg		8230	25700	25700	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−47−3	Chromium	5260	ug/kg		154	514	514	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−48−4	Cobalt	3400	ug/kg	*	154	514	514	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−50−8	Copper	3230	ug/kg		309	1030	1030	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7439−89−6	Iron	11200000	ug/kg		8230	25700	25700	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7439−92−1	Lead	7190	ug/kg		339	1030	1030	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7439−95−4	Magnesium	1070000	ug/kg	N	8740	30900	30900	1	P	HSC	04/02/14 08:35	040214−1	1373199
7439−96−5	Manganese	359000	ug/kg		206	1030	1030	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7439−97−6	Mercury	11.4	ug/kg	U	3.83	11.4	11.4	1	AV	NOR1	04/03/14 10:38	040314S1−6	1376959
7440−02−0	Nickel	5410	ug/kg		104	415	415	2	MS	BAJ	04/01/14 16:43	140401−4	1373201
7440−09−7	Potassium	739000	ug/kg	N	6580	25700	25700	1	P	HSC	04/02/14 08:35	040214−1	1373199
7782−49−2	Selenium	1040	ug/kg	U	342	1040	1040	2	MS	BAJ	04/01/14 00:08	140331−3	1373201
7440−22−4	Silver	514	ug/kg	U	103	514	514	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−23−5	Sodium	69300	ug/kg		7200	25700	25700	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−28−0	Thallium	415	ug/kg	U	62.2	415	415	2	MS	BAJ	04/01/14 00:08	140331−3	1373201
7440−62−2	Vanadium	16200	ug/kg		103	514	514	1	P	HSC	03/27/14 11:16	032714A−2	1373199
7440−66−6	Zinc	43000	ug/kg		411	1030	1030	1	P	HSC	03/27/14 11:16	032714A−2	1373199

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1373199	1373198	SW846 3050B	0.516	g	50	mL	03/19/14	AXG2
1373201	1373200	SW846 3050B	0.512	g	50	mL	03/19/14	MTM1
1376959	1376958	SW846 7471A Prep	0.557	g	30	mL	04/02/14	AXS5
1377528	1377527	SW846 3050B	0.585	g	50	mL	04/04/14	MTM1

***Analytical Methods:**

P **SW846 3050B/6010C**
MS **SW846 3050B/6020A**
AV **SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3002 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344675003 **BASIS:** Dry Weight **DATE COLLECTED** 13−MAR−14

CLIENT ID: CAWR−14−49293 **LEVEL:** Low **DATE RECEIVED** 15−MAR−14

MATRIX: SO **%SOLIDS:** 75

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2260000	ug/kg		8800	25900	25900	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−36−0	Antimony	446	ug/kg	J	427	1290	1290	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−38−2	Arsenic	982	ug/kg	J	256	1280	1280	2	MS	BAJ	04/01/14 00:15	140331−3	1373201
7440−39−3	Barium	84700	ug/kg		129	647	647	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−41−7	Beryllium	263	ug/kg		25.6	128	128	2	MS	BAJ	04/03/14 12:56	140403−5	1373201
7440−43−9	Cadmium	647	ug/kg	U	129	647	647	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−70−2	Calcium	8550000	ug/kg		10300	32300	32300	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−47−3	Chromium	5710	ug/kg		194	647	647	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−48−4	Cobalt	2370	ug/kg	*	194	647	647	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−50−8	Copper	2830	ug/kg		388	1290	1290	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7439−89−6	Iron	6730000	ug/kg		10300	32300	32300	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7439−92−1	Lead	4220	ug/kg		427	1290	1290	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7439−95−4	Magnesium	1430000	ug/kg	N	11000	38800	38800	1	P	HSC	04/02/14 08:38	040214−1	1373199
7439−96−5	Manganese	114000	ug/kg		259	1290	1290	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7439−97−6	Mercury	15.6	ug/kg	U	5.21	15.6	15.6	1	AV	NOR1	04/03/14 10:40	040314S1−6	1376959
7440−02−0	Nickel	4870	ug/kg		128	511	511	2	MS	BAJ	04/01/14 16:46	140401−4	1373201
7440−09−7	Potassium	740000	ug/kg	N	8280	32300	32300	1	P	HSC	04/02/14 08:38	040214−1	1373199
7782−49−2	Selenium	1280	ug/kg	U	422	1280	1280	2	MS	BAJ	04/01/14 00:15	140331−3	1373201
7440−22−4	Silver	647	ug/kg	U	129	647	647	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−23−5	Sodium	70000	ug/kg		9050	32300	32300	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−28−0	Thallium	511	ug/kg	U	76.7	511	511	2	MS	BAJ	04/01/14 00:15	140331−3	1373201
7440−62−2	Vanadium	16300	ug/kg		129	647	647	1	P	HSC	03/27/14 11:20	032714A−2	1373199
7440−66−6	Zinc	14900	ug/kg		517	1290	1290	1	P	HSC	03/27/14 11:20	032714A−2	1373199

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1373199	1373198	SW846 3050B	0.514	g	50	mL	03/19/14	AXG2
1373201	1373200	SW846 3050B	0.52	g	50	mL	03/19/14	MTM1
1376959	1376958	SW846 7471A Prep	0.513	g	30	mL	04/02/14	AXS5
1377528	1377527	SW846 3050B	0.509	g	50	mL	04/04/14	MTM1

***Analytical Methods:**

P **SW846 3050B/6010C**
MS **SW846 3050B/6020A**
AV **SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3002 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 344675004 **BASIS:** Dry Weight **DATE COLLECTED** 13−MAR−14

CLIENT ID: CAWR−14−49294 **LEVEL:** Low **DATE RECEIVED** 15−MAR−14

MATRIX: SO **%SOLIDS:** 76

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	3530000	ug/kg		8870	26100	26100	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−36−0	Antimony	454	ug/kg	J	431	1300	1300	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−38−2	Arsenic	1590	ug/kg		263	1310	1310	2	MS	BAJ	04/01/14 00:21	140331−3	1373201
7440−39−3	Barium	119000	ug/kg		130	652	652	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−41−7	Beryllium	360	ug/kg		26.3	131	131	2	MS	BAJ	04/03/14 13:03	140403−5	1373201
7440−43−9	Cadmium	652	ug/kg	U	130	652	652	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−70−2	Calcium	12300000	ug/kg		10400	32600	32600	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−47−3	Chromium	8400	ug/kg		196	652	652	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−48−4	Cobalt	3900	ug/kg	*	196	652	652	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−50−8	Copper	4990	ug/kg		391	1300	1300	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7439−89−6	Iron	10700000	ug/kg		10400	32600	32600	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7439−92−1	Lead	6180	ug/kg		431	1300	1300	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7439−95−4	Magnesium	2030000	ug/kg	N	11100	39100	39100	1	P	HSC	04/02/14 08:41	040214−1	1373199
7439−96−5	Manganese	212000	ug/kg		261	1300	1300	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7439−97−6	Mercury	15	ug/kg	U	5.01	15	15	1	AV	NOR1	04/03/14 10:42	040314S1−6	1376959
7440−02−0	Nickel	7740	ug/kg		131	525	525	2	MS	BAJ	04/01/14 16:48	140401−4	1373201
7440−09−7	Potassium	1050000	ug/kg	N	8350	32600	32600	1	P	HSC	04/02/14 08:41	040214−1	1373199
7782−49−2	Selenium	1310	ug/kg	U	433	1310	1310	2	MS	BAJ	04/01/14 00:21	140331−3	1373201
7440−22−4	Silver	652	ug/kg	U	130	652	652	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−23−5	Sodium	111000	ug/kg		9130	32600	32600	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−28−0	Thallium	525	ug/kg	U	78.8	525	525	2	MS	BAJ	04/01/14 00:21	140331−3	1373201
7440−62−2	Vanadium	25600	ug/kg		130	652	652	1	P	HSC	03/27/14 11:23	032714A−2	1373199
7440−66−6	Zinc	23100	ug/kg		522	1300	1300	1	P	HSC	03/27/14 11:23	032714A−2	1373199

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1373199	1373198	SW846 3050B	0.507	g	50	mL	03/19/14	AXG2
1373201	1373200	SW846 3050B	0.504	g	50	mL	03/19/14	MTM1
1376959	1376958	SW846 7471A Prep	0.531	g	30	mL	04/02/14	AXS5
1377528	1377527	SW846 3050B	0.549	g	50	mL	04/04/14	MTM1

***Analytical Methods:**

P **SW846 3050B/6010C**
MS **SW846 3050B/6020A**
AV **SW846 7471A**

Quality Control Summary

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−3002

Contract: LANL00114

Matrix: SO

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1203051653								
	Aluminum	6800	ug/kg	+/−20000	U	P	6800	20000
	Antimony	330	ug/kg	+/−1000	U	P	330	1000
	Barium	100	ug/kg	+/−500	U	P	100	500
	Cadmium	100	ug/kg	+/−500	U	P	100	500
	Calcium	8000	ug/kg	+/−25000	U	P	8000	25000
	Chromium	150	ug/kg	+/−500	U	P	150	500
	Cobalt	150	ug/kg	+/−500	U	P	150	500
	Copper	300	ug/kg	+/−1000	U	P	300	1000
	Iron	8000	ug/kg	+/−25000	U	P	8000	25000
	Lead	330	ug/kg	+/−1000	U	P	330	1000
	Magnesium	8500	ug/kg	+/−30000	U	P	8500	30000
	Manganese	200	ug/kg	+/−1000	U	P	200	1000
	Potassium	6400	ug/kg	+/−25000	U	P	6400	25000
	Silver	100	ug/kg	+/−500	U	P	100	500
	Sodium	7000	ug/kg	+/−25000	U	P	7000	25000
	Vanadium	100	ug/kg	+/−500	U	P	100	500
	Zinc	400	ug/kg	+/−1000	U	P	400	1000
1203051658								
	Arsenic	194	ug/kg	+/−971	U	MS	194	971
	Beryllium	19.4	ug/kg	+/−97.1	U	MS	19.4	97.1
	Nickel	97.1	ug/kg	+/−388	U	MS	97.1	388
	Selenium	320	ug/kg	+/−971	U	MS	320	971
	Thallium	58.3	ug/kg	+/−388	U	MS	58.3	388
1203060869								
	Mercury	4.02	ug/kg	+/−12	U	AV	4.02	12

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3002 **Client ID** CAWA−14−49277S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 95.5

Sample ID: 344675001 **Spike ID:** 1203051656

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/kg		6910000		3170000		514000	729	N/A	P
Antimony	ug/kg	75−125	45600		344	U	51400	88.4		P
Barium	ug/kg	75−125	163000		109000		51400	105		P
Cadmium	ug/kg	75−125	49400		104	U	51400	96.1		P
Calcium	ug/kg		2710000		2150000		514000	109	N/A	P
Chromium	ug/kg	75−125	55600		4990		51400	98.6		P
Cobalt	ug/kg	75−125	52300		5790		51400	90.5		P
Copper	ug/kg	75−125	57800		3870		51400	105		P
Iron	ug/kg		11700000		10400000		514000	249	N/A	P
Lead	ug/kg	75−125	60100		8950		51400	99.7		P
Magnesium	ug/kg	75−125	1950000		1210000		514000	143	N	P
Manganese	ug/kg		459000		382000		51400	149	N/A	P
Potassium	ug/kg	75−125	1610000		869000		514000	144	N	P
Silver	ug/kg	75−125	50600		104	U	51400	98.5		P
Sodium	ug/kg	75−125	608000		85000		514000	102		P
Vanadium	ug/kg	75−125	66800		14900		51400	101		P
Zinc	ug/kg	75−125	92100		39800		51400	102		P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3002 **Client ID** CAWA−14−49277S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 95.5

Sample ID: 344675001 **Spike ID:** 1203051661

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Arsenic	ug/kg	75−125	6150		1150		5060	98.8		MS
Beryllium	ug/kg	75−125	6000		528		5060	108		MS
Nickel	ug/kg	75−125	10900		5620		5060	105		MS
Selenium	ug/kg	75−125	4480		331	U	5060	86.7		MS
Thallium	ug/kg	75−125	5440		92.1	J	5060	106		MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3002 **Client ID** CAAN−14−56601S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 92.4

Sample ID: 344682001 **Spike ID:** 1203060872

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/kg	80−120	118		4.32	U	126	92.9		AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3002 **Client ID** CAWA−14−49277PS

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 95.5

Sample ID: 344675001 **Spike ID:** 1203060917

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Magnesium	ug/L	80−120	16300		11600		5000	94		P
Potassium	ug/L	80−120	12900		8330		5000	92.3		P

***Analytical Methods:**

P **SW846 3050B/6010C**

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3002 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAWA−14−49277D

Matrix: SOIL **Level:** Low

Sample ID: 344675001 **Duplicate ID:** 1203051655 **Percent Solids for Dup:** 95.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/kg	+/−20%	3170000		3410000		7.47		P
Antimony	ug/kg		344	U	342	U			P
Barium	ug/kg	+/−20%	109000		106000		3.05		P
Cadmium	ug/kg		104	U	104	U			P
Calcium	ug/kg	+/−20%	2150000		2050000		4.63		P
Chromium	ug/kg	+/−20%	4990		5180		3.7		P
Cobalt	ug/kg	+/−20%	5790		3180		58.1	*	P
Copper	ug/kg	+/−1040	3870		4180		7.77		P
Iron	ug/kg	+/−20%	10400000		10400000		.488		P
Lead	ug/kg	+/−20%	8950		9360		4.48		P
Magnesium	ug/kg	+/−20%	1210000		1190000		1.47		P
Manganese	ug/kg	+/−20%	382000		334000		13.6		P
Potassium	ug/kg	+/−20%	869000		889000		2.27		P
Silver	ug/kg		104	U	104	U			P
Sodium	ug/kg	+/−25900	85000		85500		.625		P
Vanadium	ug/kg	+/−20%	14900		15100		1.7		P
Zinc	ug/kg	+/−20%	39800		40200		.942		P

***Analytical Methods:**

P SW846 3050B/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3002 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAWA−14−49277D

Matrix: SOIL **Level:** Low

Sample ID: 344675001 **Duplicate ID:** 1203051660 **Percent Solids for Dup:** 95.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Arsenic	ug/kg	+/−1030	1150		1110		3.42		MS
Beryllium	ug/kg	+/−20%	528		544		2.93		MS
Nickel	ug/kg	+/−20%	5620		5530		1.63		MS
Selenium	ug/kg		331	U	339	U			MS
Thallium	ug/kg	+/−411	92.1	J	95.9	J	4.05		MS

***Analytical Methods:**

MS SW846 3050B/6020A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3002 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAAN−14−56601D

Matrix: SOIL **Level:** Low

Sample ID: 344682001 **Duplicate ID:** 1203060871 **Percent Solids for Dup:** 92.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/kg		4.32	U	4.34	U			AV

***Analytical Methods:**

AV SW846 7471A

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3002

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203051654								
	Aluminum	ug/kg	8680000	5960000		68.6	44.9−154.4	P
	Antimony	ug/kg	166000	137000		82.3	33.1−167.3	P
	Barium	ug/kg	290000	279000		96.3	82.8−117.6	P
	Cadmium	ug/kg	85000	81500		95.9	84−115.9	P
	Calcium	ug/kg	6120000	5880000		96.1	83.2−117	P
	Chromium	ug/kg	168000	166000		98.6	81.5−117.9	P
	Cobalt	ug/kg	87000	87100		100	84.8−114.9	P
	Copper	ug/kg	187000	195000		104	84−116.6	P
	Iron	ug/kg	12500000	12700000		101	50.5−148.8	P
	Lead	ug/kg	120000	119000		98.8	83.3−116.7	P
	Magnesium	ug/kg	2920000	2650000		90.9	75−125.3	P
	Manganese	ug/kg	310000	301000		97.2	82.6−117.4	P
	Potassium	ug/kg	2780000	2400000		86.2	69.1−130.9	P
	Silver	ug/kg	55200	56400		102	66.3−133.7	P
	Sodium	ug/kg	504000	477000		94.6	73.6−126.4	P
	Vanadium	ug/kg	138000	142000		103	79.7−120.3	P
	Zinc	ug/kg	206000	198000		95.9	82−118	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3002

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203051659								
	Arsenic	ug/kg	137000	154000		112	83.2−117.5	MS
	Beryllium	ug/kg	138000	145000		105	84.1−115.9	MS
	Nickel	ug/kg	159000	180000		113	84.3−115.7	MS
	Selenium	ug/kg	43500	47800		110	77.9−122.3	MS
	Thallium	ug/kg	146000	166000		114	81.5−119.2	MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3002

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203060870								
	Mercury	ug/kg	7690	7890		103	71.4−129	AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3002 **Client ID** CAWA−14−49277L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 344675001 **Serial Dilution ID:** 1203051657

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	30400		30700		1.11		10	P
Antimony	3.3	U	16.5	U				P
Barium	1050		1040		.492		10	P
Cadmium	1	U	5	U				P
Calcium	20600		20700		.558		10	P
Chromium	47.8		47.9		.198			P
Cobalt	55.5		55.8		.557			P
Copper	37.1		31.1	J	16.2			P
Iron	99900		99700		.209		10	P
Lead	85.8		77.9		9.22			P
Magnesium	11600		11600		.082		10	P
Manganese	3670		3630		.887		10	P
Potassium	8330		8340		.082		10	P
Silver	1	U	5	U				P
Sodium	815		749	J	8.04			P
Vanadium	143		140		2.17		10	P
Zinc	382		377		1.26		10	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3002 **Client ID** CAWA−14−49277L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 344675001 **Serial Dilution ID:** 1203051662

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Arsenic	5.75		6.4	J	11.3			MS
Beryllium	2.63		3.11		18.3			MS
Nickel	28		31.7		13.1			MS
Selenium	1.65	U	8.25	U				MS
Thallium	.459	J	1.5	U	100			MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3002 **Client ID** CAAN−14−56601L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 344682001 **Serial Dilution ID:** 1203060873

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **SW846 7471A**

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
10-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW846 3050B/6010C	Solid	LANL
Batch ID:	**Sample Numbers:**		
1373199	See Below		

Potentially affected work order(s)(SDG): 344675(2014-3002)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for DUP

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203051656MS 2. Failed RPD for DUP: QC 1203051655DUP	1. The matrix spike recovery failed outside of the control limits for magnesium and potassium. The post spike passed the required control limits for all analytes. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. 2. The sample and sample duplicate % RPD failed outside the control limits for cobalt due to possible sample non-homogeneity and/or matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. Sample # 344675001 is a brown sand like substance with small rocks.

Originator's Name:

Helen Camello 11-APR-14

Data Validator/Group Leader:

Travis Tola 11-APR-14

Radiological Analysis

Radiochemistry Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3002
Work Order 344675

Method/Analysis Information

Product:	**ISOU**
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1373335
Prep Batch Number:	1373143

Sample ID	Client ID
344675003	CAWR-14-49293
344675004	CAWR-14-49294
1203051966	Method Blank (MB)
1203051967	344682001(CAAN-14-56601) Sample Duplicate (DUP)
1203051968	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 24.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquot for sample 1203051966 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 344682001 (CAAN-14-56601). The QC was from ARSL work order 344682.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The U-233/234, U-235/236, and U-238 blank results are greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
None of the samples in this batch were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
The MDCs (and Lc if requested) are calculated using a blank population.

Blank Decision Level
The U-233/234, U-235/236, and U-238 blank results are greater than the decision level but less than the MDC.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Dry Weight-Percent Moisture**
Analytical Method:	Dry Soil Prep
Analytical Batch Number:	1373143

Sample ID	Client ID

344675003	CAWR-14-49293
344675004	CAWR-14-49294
1203051552	344675003(CAWR-14-49293) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-020 REV# 10 and GL-RAD-A-021 REV# 20.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Designated QC
The following sample was used for QC: 344675003 (CAWR-14-49293). The QC was from ARSL work order 344675.

QC Information
All of the QC samples met the required acceptance limits.

CSU
Not applicable. The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
None of the samples in this batch were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this sample set.

Blank Decision Level
Not Applicable. The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Procedure:	**Dry Weight-Percent Moisture**
Analytical Method:	ASTM D 2216 (Modified)
Analytical Batch Number:	1373146

Sample ID	Client ID
344675001	CAWA-14-49277
344675002	CAWA-14-49278
1203051553	344666001(X403132-01) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-020 REV# 10.

Calibration Information:

Quality Control (QC) Information:

Designated QC
The following sample was used for QC: 344666001 (X403132-01). The QC was from OLAB work order 344666.

QC Information
All of the QC samples met the required acceptance limits.

CSU
Not applicable. The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
None of the samples in this batch were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
The listed samples were wet and muddy making it difficult to homogenize the samples prior to taking our aliquot for analysis. 1203051553 (X403132-01).

Blank Decision Level
Not Applicable. The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GAMMA SPEC**
Analytical Method:	DOE HASL 300, 4.5.2.3/Ga-01-R
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1373213
Prep Batch Number:	1373143

Sample ID	Client ID
344675003	CAWR-14-49293
344675004	CAWR-14-49294
1203051680	Method Blank (MB)
1203051681	344675003(CAWR-14-49293) Sample Duplicate (DUP)
1203051682	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 25.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibrations were performed in May 2013, June 2013 and August 2013.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 344675003 (CAWR-14-49293). The QC was from ARSL work order 344675.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
None of the samples in this batch were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Blank Decision Level
The blank 1203051680 (MB) result is greater than the critical level but less than the MDC for Bi-214 and Pb-212.

Qualifier Information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to low abundance.	Bismuth-212	344675003	CAWR-14-49293

344675004	CAWR-14-49294
1203051681	CAWR-14-49293(344675003DUP)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3002 GEL Work Order: 344675

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy--Uncertain identification

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Heather M. McCarty **Name:** **Heather McCarty**

Date: **28 MAR 2014** **Title:** **Analyst II**

Sample Data Summary

GEL LABORATORIES LLC

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Certificate of Analysis

Company :	Los Alamos National Laboratory		
Address :	TA-03, SM271, Drop Pt. 02U, Rm111		
	Los Alamos, New Mexico 87545	Report Date:	March 28, 2014
Contact:	Mr. Keith Greene		
Project:	LANL ER		

Client Sample ID:	CAWA-14-49277	Project:	LANL00114
Sample ID:	344675001	Client ID:	ARSL004
Matrix:	SO		
Collect Date:	13-MAR-14		
Receive Date:	15-MAR-14		
Collector:	Client		
Moisture:	4.54%		

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
"As Received"														

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 68% confidence level (1-sigma).

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Report Date: March 28, 2014

Contact: Mr. Keith Greene
Project: LANL ER

Client Sample ID: CAWA-14-49278
Sample ID: 344675002
Matrix: SO
Collect Date: 13-MAR-14
Receive Date: 15-MAR-14
Collector: Client
Moisture: 5.79%

Project: LANL00114
Client ID: ARSL004

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
"As Received"														

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 68% confidence level (1-sigma).

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Report Date: March 28, 2014

Contact: Mr. Keith Greene
Project: LANL ER

Client Sample ID: CAWR-14-49293
Sample ID: 344675003
Matrix: SO
Collect Date: 13-MAR-14
Receive Date: 15-MAR-14
Collector: Client
Moisture: 24.8%

Project: LANL00114
Client ID: ARSL004

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
"As Received"														
Rad Alpha Spec Analysis														
ISOU "Dry Weight Corrected"														
Uranium-233/234		0.569	+/-0.0472	0.077	0.0334	+/-0.0595	0.100	pCi/g		HAKB	03/20/14	1243	1373335	2
Uranium-235/236	U	0.0414	+/-0.0166	0.0654	0.0265	+/-0.0168	0.100	pCi/g						
Uranium-238		0.554	+/-0.046	0.0492	0.0195	+/-0.058	0.100	pCi/g						
Rad Gamma Spec Analysis														
GAMMA SPEC "Dry Weight Corrected"														
Actinium-228		0.851	+/-0.119	0.178	0.0822	+/-0.132	0.800	pCi/g		MXR1	03/18/14	1154	1373213	3
Americium-241	U	-0.0215	+/-0.043	0.136	0.0656	+/-0.0433	0.200	pCi/g						
Bismuth-212	UI	1.03	+/-0.348	0.767	0.362	+/-0.424	0.500	pCi/g						
Bismuth-214		0.638	+/-0.055	0.0822	0.0384	+/-0.0611	0.200	pCi/g						
Cesium-134	U	0.0302	+/-0.0138	0.0545	0.0255	+/-0.0155	0.100	pCi/g						
Cesium-137	U	0.0282	+/-0.0189	0.0429	0.0199	+/-0.0189	0.100	pCi/g						
Cobalt-60	U	-0.00388	+/-0.0137	0.0497	0.0225	+/-0.0137	0.100	pCi/g						
Lead-212		0.701	+/-0.0431	0.0713	0.0342	+/-0.0539	0.100	pCi/g						
Lead-214		0.793	+/-0.0575	0.0825	0.0389	+/-0.0667	0.100	pCi/g						
Potassium-40		19.3	+/-0.597	0.331	0.142	+/-1.09	1.00	pCi/g						
Protactinium-234m	U	0.400	+/-1.55	5.76	2.66	+/-1.56		pCi/g						
Sodium-22	U	0.00824	+/-0.0144	0.0544	0.0249	+/-0.0145	0.080	pCi/g						
Thallium-208		0.199	+/-0.0321	0.0443	0.0207	+/-0.0331	0.080	pCi/g						
Thorium-234	U	0.653	+/-0.652	1.23	0.596	+/-0.656	2.00	pCi/g						
Uranium-235	U	0.0646	+/-0.0981	0.224	0.108	+/-0.0981	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	03/17/14	0943	1373143

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, U-02-RC Modified
3	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	1373335	90.7	(50%-105%)

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Report Date: March 28, 2014

Contact: Mr. Keith Greene
Project: LANL ER

Client Sample ID: CAWR-14-49293
Sample ID: 344675003

Project: LANL00114
Client ID: ARSL004

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 68% confidence level (1-sigma).

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Report Date: March 28, 2014

Contact: Mr. Keith Greene
Project: LANL ER

Client Sample ID: CAWR-14-49294
Sample ID: 344675004
Matrix: SO
Collect Date: 13-MAR-14
Receive Date: 15-MAR-14
Collector: Client
Moisture: 24.4%

Project: LANL00114
Client ID: ARSL004

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
"As Received"														
Rad Alpha Spec Analysis														
ISOU "Dry Weight Corrected"														
Uranium-233/234		0.911	+/-0.0611	0.0788	0.0343	+/-0.0843	0.100	pCi/g		HAKB	03/20/14	1243	1373335	2
Uranium-235/236	U	0.0565	+/-0.0188	0.067	0.0271	+/-0.0192	0.100	pCi/g						
Uranium-238		1.02	+/-0.063	0.0504	0.020	+/-0.0904	0.100	pCi/g						
Rad Gamma Spec Analysis														
GAMMA SPEC "Dry Weight Corrected"														
Actinium-228		1.37	+/-0.155	0.252	0.113	+/-0.176	0.800	pCi/g		MXR1	03/18/14	1154	1373213	3
Americium-241	U	0.0271	+/-0.0228	0.0798	0.0386	+/-0.0237	0.200	pCi/g						
Bismuth-212	UI	1.35	+/-0.399	1.33	0.628	+/-0.509	0.500	pCi/g						
Bismuth-214		1.07	+/-0.0775	0.129	0.060	+/-0.090	0.200	pCi/g						
Cesium-134	U	0.0694	+/-0.0246	0.0986	0.046	+/-0.0295	0.100	pCi/g						
Cesium-137	U	0.0754	+/-0.026	0.0769	0.0357	+/-0.0261	0.100	pCi/g						
Cobalt-60	U	-0.00713	+/-0.0223	0.0827	0.0367	+/-0.0224	0.100	pCi/g						
Lead-212		1.29	+/-0.0524	0.0819	0.039	+/-0.081	0.100	pCi/g						
Lead-214		1.19	+/-0.0816	0.289	0.141	+/-0.0968	0.100	pCi/g						
Potassium-40		19.9	+/-0.864	0.802	0.353	+/-1.25	1.00	pCi/g						
Protactinium-234m	U	3.01	+/-2.63	10.2	4.67	+/-2.73		pCi/g						
Sodium-22	U	0.00609	+/-0.0285	0.103	0.0469	+/-0.0285	0.080	pCi/g						
Thallium-208		0.393	+/-0.0404	0.0647	0.0299	+/-0.0439	0.080	pCi/g						
Thorium-234		1.01	+/-0.412	0.786	0.380	+/-0.429	2.00	pCi/g						
Uranium-235	U	0.103	+/-0.0931	0.263	0.126	+/-0.0933	0.500	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	03/17/14	0943	1373143

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, U-02-RC Modified
3	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	1373335	85.9	(50%-105%)

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Report Date: March 28, 2014

Contact: Mr. Keith Greene
Project: LANL ER

Client Sample ID: CAWR-14-49294
Sample ID: 344675004

Project: LANL00114
Client ID: ARSL004

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 68% confidence level (1-sigma).

Quality Control Data

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: March 28, 2014

Client : **Los Alamos National Laboratory**
TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico

Contact: **Mr. Keith Greene**

Workorder: **344675**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 1373335										
QC1203051967 344682001 DUP										
Uranium-233/234		0.522		0.469	pCi/g	0.243		(0-1)	HAKB	03/20/1412:43
	TPU:	+/-0.0566		+/-0.0516						
Uranium-235/236	U	0.00941	U	0.0552	pCi/g	0.741		(0-1)		
	TPU:	+/-0.0133		+/-0.0176						
Uranium-238		0.552		0.506	pCi/g	0.203		(0-1)		
	TPU:	+/-0.058		+/-0.0548						
**Uranium-232 Tracer	4.29	3.85		3.95	pCi/g		92	(50%-105%)		
	TPU:	+/-0.302		+/-0.301						
QC1203051968 LCS										
Uranium-233/234				6.15	pCi/g				HAKB	03/20/1412:43
	TPU:			+/-0.517						
Uranium-235/236			U	0.308	pCi/g					
	TPU:			+/-0.0955						
Uranium-238	5.75			5.52	pCi/g		96.1	(75%-125%)		
	TPU:			+/-0.476						
**Uranium-232 Tracer	19.8			17.3	pCi/g		87.4	(50%-105%)		
	TPU:			+/-1.41						
QC1203051966 MB										
Uranium-233/234			U	0.0184	pCi/g				HAKB	03/20/1412:43
	TPU:			+/-0.00745						
Uranium-235/236			U	0.0159	pCi/g					
	TPU:			+/-0.00826						
Uranium-238			U	0.0166	pCi/g					
	TPU:			+/-0.00671						
**Uranium-232 Tracer	2.20			2.04	pCi/g		92.8	(50%-105%)		
	TPU:			+/-0.153						
Rad Gamma Spec										
Batch 1373213										
QC1203051681 344675003 DUP										
Actinium-228		0.851		0.802	pCi/g	0.0952		(0-1)	MXR1	03/18/1411:57
	TPU:	+/-0.132		+/-0.125						
Americium-241	U	-0.0215	U	-0.0402	pCi/g	0.0842		(0-1)		
	TPU:	+/-0.0433		+/-0.0681						
Bismuth-212	UI	1.03	UI	1.06	pCi/g	0.019		(0-1)		
	TPU:	+/-0.424		+/-0.341						
Bismuth-214		0.638		0.609	pCi/g	0.114		(0-1)		
	TPU:	+/-0.0611		+/-0.0651						
Cesium-134	U	0.0302	U	0.0124	pCi/g	0.266		(0-1)		
	TPU:	+/-0.0155		+/-0.0179						
Cesium-137	U	0.0282	U	0.0369	pCi/g	0.109		(0-1)		
	TPU:	+/-0.0189		+/-0.0209						

QC Summary

Workorder: **344675**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 1373213										
Cobalt-60	U	-0.00388	U	-0.00712	pCi/g	0.0606		(0-1)		
	TPU:	+/-0.0137		+/-0.013						
Lead-212		0.701		0.806	pCi/g	0.483		(0-1)		
	TPU:	+/-0.0539		+/-0.0546						
Lead-214		0.793		0.710	pCi/g	0.304		(0-1)		
	TPU:	+/-0.0667		+/-0.0696						
Potassium-40		19.3		18.8	pCi/g	0.125		(0-1)		
	TPU:	+/-1.09		+/-1.07						
Protactinium-234m	U	0.400	U	0.0442	pCi/g	0.047		(0-1)		
	TPU:	+/-1.56		+/-2.23						
Sodium-22	U	0.00824	U	0.00676	pCi/g	0.0251		(0-1)		
	TPU:	+/-0.0145		+/-0.015						
Thallium-208		0.199		0.214	pCi/g	0.121		(0-1)		
	TPU:	+/-0.0331		+/-0.0296						
Thorium-234	U	0.653	U	0.722	pCi/g	0.0183		(0-1)		
	TPU:	+/-0.656		+/-1.23						
Uranium-235	U	0.0646	U	0.0499	pCi/g	0.0368		(0-1)		
	TPU:	+/-0.0981		+/-0.102						
QC1203051682 LCS										
Actinium-228			U	-3.44	pCi/g				MXR1	03/18/1412:48
	TPU:			+/-1.83						
Americium-241	491			556	pCi/g		113	(75%-125%)		
	TPU:			+/-22.8						
Bismuth-212			U	0.583	pCi/g					
	TPU:			+/-4.03						
Bismuth-214			U	1.11	pCi/g					
	TPU:			+/-0.598						
Cesium-134			U	0.108	pCi/g					
	TPU:			+/-0.364						
Cesium-137	190			185	pCi/g		97.5	(75%-125%)		
	TPU:			+/-7.72						
Cobalt-60	224			210	pCi/g		93.4	(75%-125%)		
	TPU:			+/-10.2						
Lead-212			U	0.0836	pCi/g					
	TPU:			+/-0.417						
Lead-214			U	-0.285	pCi/g					
	TPU:			+/-0.603						
Potassium-40			U	2.56	pCi/g					
	TPU:			+/-2.03						
Protactinium-234m			U	-44.2	pCi/g					
	TPU:			+/-49.2						
Sodium-22			U	0.452	pCi/g					
	TPU:			+/-0.240						
Thallium-208			U	-0.173	pCi/g					
	TPU:			+/-0.297						
Thorium-234			U	-26	pCi/g					
	TPU:			+/-13.9						

QC Summary

Workorder: **344675**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 1373213										
Uranium-235			U	0.102	pCi/g					
	TPU:			+/-1.31						
QC1203051680 MB										
Actinium-228			U	-0.02	pCi/g				MXR1	03/18/1411:56
	TPU:			+/-0.0272						
Americium-241			U	-0.0299	pCi/g					
	TPU:			+/-0.0363						
Bismuth-212			U	0.0588	pCi/g					
	TPU:			+/-0.093						
Bismuth-214			U	0.0374	pCi/g					
	TPU:			+/-0.026						
Cesium-134			U	-0.0161	pCi/g					
	TPU:			+/-0.00865						
Cesium-137			U	-2.85E-05	pCi/g					
	TPU:			+/-0.00774						
Cobalt-60			U	-0.00533	pCi/g					
	TPU:			+/-0.0104						
Lead-212			U	0.0281	pCi/g					
	TPU:			+/-0.0218						
Lead-214			U	-0.027	pCi/g					
	TPU:			+/-0.0192						
Potassium-40			U	-0.0912	pCi/g					
	TPU:			+/-0.107						
Protactinium-234m			U	-0.0728	pCi/g					
	TPU:			+/-1.01						
Sodium-22			U	0.00792	pCi/g					
	TPU:			+/-0.00661						
Thallium-208			U	-0.00817	pCi/g					
	TPU:			+/-0.00858						
Thorium-234			U	-0.152	pCi/g					
	TPU:			+/-0.366						
Uranium-235			U	-0.0205	pCi/g					
	TPU:			+/-0.0433						

Notes:

TPU and Counting Uncertainty are calculated at the 68% confidence level (1-sigma).

The Qualifiers in this report are defined as follows:

**	Analyte is a Tracer compound
<	Result is less than value reported
>	Result is greater than value reported
BD	Results are either below the MDC or tracer recovery is low
FA	Failed analysis.
H	Analytical holding time was exceeded
J	Value is estimated
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.

QC Summary

Workorder: **344675**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time

L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	REMP Result > MDC/CL and < RDL
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
** Indicates analyte is a surrogate/tracer compound.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request A DEP

COC/Lab Request #: 2014-3034

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Tal Metals
CAWA-14-49275	Mar 19 2014	14:45	SED	1	1
CAWA-14-49276	Mar 19 2014	15:05	SED	1	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Martz	3/20/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49275 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/19/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1445	MEDIA:		Sed
PRS ID:	Water-Canyon	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~64 52m~~ 3/7/14	WA-61497	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.262	8cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: Reach WA-5

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Pu-239
α: 12.55
β/γ: 1387

Gross Alpha 28 dpm

Gross Beta/Gamma 1968 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) J. Riesterer

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Mugglestone	3/19/14 5:15	(Printed Name) D. Sherwood	3/19/14 5:15
(Signature)		(Signature)	
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49276 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/19/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1505	MEDIA:		Sed.
PRS ID:	Water-Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	GS SPM 3/7/14	WA-61498	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.262	8cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment

LOCATION COMMENTS: Reach WA-5

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

3kgd Pad
1: 12.55
3/18: 1387

Gross **Alpha** 18 dpm

Gross **Beta/Gamma** 1958 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) J. Riesterer

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Muggleton (Signature)	3/19/14 5:15	(Printed Name) S. Sherwood (Signature)	3/19/14 5:15
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3034

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
345006	SW-846:6010B	2				
345006	SW-846:6020	2				
345006	SW-846:7471A	2				
345006	SW-846:8082	2				
345006	SW-846:8321A_MOD	2				

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
345006	SW-846:6010B	1374626	1374625	2					1					1				1			
345006	SW-846:6020	1374630	1374629	2					1					1				1			
345006	SW-846:7471A	1378631	1378630	2					1					1				1			
345006	SW-846:8082	1376191	1376190	2					1					1							
345006	SW-846:8321A_MOD	1374669	1374668	2					1					1							

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:6010B	INORGANIC	CAAN-14-56593	1203055054	DUP	17	0	0	0
SW-846:6010B	INORGANIC	CAWA-14-49275	345006001	REG	17	0	0	0
SW-846:6010B	INORGANIC	CAWA-14-49276	345006002	REG	17	0	0	0
SW-846:6010B	INORGANIC	LCS	1203055053	LCS	0	0	17	0
SW-846:6010B	INORGANIC	MB	1203055052	MB	17	0	0	0
SW-846:6020	INORGANIC	CAAN-14-56593	1203055059	DUP	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49275	345006001	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49276	345006002	REG	5	0	0	0
SW-846:6020	INORGANIC	LCS	1203055058	LCS	0	0	5	0
SW-846:6020	INORGANIC	MB	1203055057	MB	5	0	0	0
SW-846:7471A	INORGANIC	CAAN-14-56593	1203064678	DUP	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49275	345006001	REG	1	0	0	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:7471A	INORGANIC	CAWA-14-49276	345006002	REG	1	0	0	0
SW-846:7471A	INORGANIC	LCS	1203064677	LCS	0	0	1	0
SW-846:7471A	INORGANIC	MB	1203064676	MB	1	0	0	0
SW-846:8082	PESTPCB	CAWA-14-49275	345006001	REG	7	2	0	0
SW-846:8082	PESTPCB	CAWA-14-49276	345006002	REG	7	2	0	0
SW-846:8082	PESTPCB	LCS	1203058887	LCS	0	2	2	0
SW-846:8082	PESTPCB	MB	1203058886	MB	7	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49275	345006001	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49276	345006002	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	LCS	1203055148	LCS	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	MB	1203055147	MB	20	2	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

Blank FS ID	Blank Lab Sample	Blank Type	Analytical Method	Sample	Parameter Name	Blank Lab Result	Lab Qualifier	Blank Lab Units	Blank Lab Detection Limit
MB	1203055052	METHOD BLANK	SW-846:6010B	SED	Lead	345	J	ug/kg	988
MB	1203055052	METHOD BLANK	SW-846:6010B	SED	Potassium	10700	J	ug/kg	24700
MB	1203055052	METHOD BLANK	SW-846:6010B	SED	Zinc	411	J	ug/kg	988
MB	1203055057	METHOD BLANK	SW-846:6020	SED	Thallium	63.1	J	ug/kg	399

DATA VALIDATION REPORT

Field Sample ID	Blank Lab	Blank Type	Analytical Method	Parameter Name	Blank Lab Result	Blank Lab Units	Lab Result	Lab Qualifier	Lab Detection Limit	Detect Flag	Detect to Nondetect Factor	Detect to Estimated Factor	Use Factors
CAWA-14-49275	1203055057	METHOD BLANK	SW-846:6020	Thallium	63.1	ug/kg	69.3	J	386	Y	5		Y

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

LCS Lab Sample	LCSD Lab	Analytical Method	Parameter Name	Lab Lot ID	Analysis	Sample Matrix	LCS Spike Recovery	LCSD Spike Recovery	Upper Limit	Lower Limit	Upper Rejection Limit	Lower Rejection Limit	RPD	RPD Limit
1203055148		SW-846:8321A_MOD	Tetryl	1374668	04-03-2014	SD	25		131	36		10		

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

DATA VALIDATION REPORT

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

Location ID	COC Number	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Parameter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detect Flag	Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent	Analysis Lot ID	Validation Status Code	Use Flag
WA-61497	2014-3034	CAWA-14-49275	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	498	ug/kg	0.498	mg/kg			SD	03/19/2014		1374669	VAL	Y
WA-61497	2014-3034	CAWA-14-49275	REG	INIT	INORGANIC	SW-846:6020	Thallium	J	U	I4	N	69.3	ug/kg	0.0693	mg/kg			SD	03/19/2014		1374630	VAL	Y
WA-61498	2014-3034	CAWA-14-49276	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	493	ug/kg	0.493	mg/kg			SD	03/19/2014		1374669	VAL	Y

Reason Code	Description
HE12a	The LCS percent recovery was < the Lower Acceptance Limit but >10%. Follow the external laboratory limits.
I4	the sample result is =<5x the concentration of related analyte in the method blank.
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49275	WA-61497	REG	SW-846:6010B	0	17
CAWA-14-49275	WA-61497	REG	SW-846:6020	0	5
CAWA-14-49275	WA-61497	REG	SW-846:7471A	0	1
CAWA-14-49275	WA-61497	REG	SW-846:8082	0	7
CAWA-14-49275	WA-61497	REG	SW-846:8321A_MOD	0	20
CAWA-14-49276	WA-61498	REG	SW-846:6010B	0	17
CAWA-14-49276	WA-61498	REG	SW-846:6020	0	5

DATA VALIDATION REPORT

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49276	WA-61498	REG	SW-846:7471A	0	1
CAWA-14-49276	WA-61498	REG	SW-846:8082	0	7
CAWA-14-49276	WA-61498	REG	SW-846:8321A_MOD	0	20

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

April 15, 2014

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL ER
Work Order: 345006
SDG: 2014-3034

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on March 21, 2014, and analyzed for Explosives by LCMSMS, GC Semivolatile PCB and Metals. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Hope Taylor for
Valerie Davis
Project Manager

Chain of Custody: 2014-3034
Enclosures

ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Work Order #: 345006
SDG: 2014-3034

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Case Narrative

Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Workorder #: 345006
SDG # : 2014-3034

April 15, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on March 21, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
345006001	CAWA-14-49275
345006002	CAWA-14-49276

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, GC Semivolatile PCB and Metals.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.

Hope Taylor for
Valerie Davis
Project Manager

List of current GEL Certifications as of 15 April 2014

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122014−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−14−9
Utah NELAP	SC000122013−11
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Chain of Custody and Supporting Documentation

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

ADEP
3450006

COC/Lab Request #: 2014-3034

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011

Project Number :

Site Name: Los Alamos National Laboratory

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Tal Metals
CAWA-14-49275	Mar 19 2014	14:45	SED	1	1
CAWA-14-49276	Mar 19 2014	15:05	SED	1	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Martz	3/20/14 3:0		Hope Taylor	03/21/14 0900
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	SDG/AR/COC/Work Order: 2014-3034
Received By: H. Taylor	Date Received: 032114

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts):
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels? 0cpm
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓	✓		Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓	✓		Preservation Method: Ice bags Blue ice Dry ice None Other (describe) 4-6 ~~13-6~~ HH 032114 *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	✓	✓		Temperature Device Serial #: 130462966 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓	✓		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	✓	✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓	✓		Sample ID's affected:
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: See continuation
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 5908 1776 8303-4 8299-5 8325-5 8288-5 8314-6

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HH Date 032114 Page 1 of 2

GEL Laboratories LLC **SAMPLE RECEIPT & REVIEW CONTINUATION FORM**

Client: LANL **Received By:** H. Taylor **Date Received:** 032114 **SDG/AR/COC/Work Order:** 2014-3034

2014-3032
CAWA-14-54721
received 1 container for 8011, chain indicates 2
received 1 container for 8260, chain indicates 4

2014-3042
CAWA-14-54737
received 1 containers for HEXP, chain indicates 3

CAWA-14-54715
received 1 container for 8011, chain indicates 2
received 1 container for 8260, chain indicates 4

PM (or PMA) review: Initials HT Date 032114 Page 2 of 2

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 20MAR14
ACTWGT: 48.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWHO

4

FedEx Express

E

3 of 3

MPS# 0263 5908 1776 8303

Mstr# 5908 1776 8288

0201

FRI - 21 MAR 10:30A
PRIORITY OVERNIGHT

29407
SC-US CHS

XX CHSA

Part # 156148-434 RIT2 10/11

RT 249 1 A
FZ
8303
03.21

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 20MAR14
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWHO

5

FedEx Express

1 of 3

TRK# 0201 5908 1776 8288
MASTER

FRI - 21 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 20MAR14
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: WE9936W200

6

FedEx Express

TRK# 0201 5908 1776 8314

FRI - 21 MAR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Explosives by LCMSMS Analysis

Case Narrative

LC-MS/MS Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3034

Method/Analysis Information

Procedure:	**Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS) by SW-846 Method 8321 Modified (8321M)**
Analytical Method:	SW846 8321A Modified
Prep Method:	SW846 8330 PREP
Analytical Batch Number:	1374669
Prep Batch Number:	1374668

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8321A Modified:

Sample ID	**Client ID**
345006001	CAWA-14-49275
345006002	CAWA-14-49276
1203055147	Method Blank (MB)
1203055148	Laboratory Control Sample (LCS)
1203055149	345004006(CAAN-14-56597) Matrix Spike (MS)
1203055150	345004006(CAAN-14-56597) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP).

The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 17.

Primary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS (1203055148) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%. Both the MS (1203055149) and MSD (1203055150) met spike recovery limits for all target analytes. The data are reported with the appropriate DER.

QC Sample Designation
Client sample 345004006 (CAAN-14-56597) from SDG 2014-3035 was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
A final internal standard concentration of 100ug/L is employed in order to meet the minimum response factor requirement of 0.01 per EPA Method 8000C for the analysis of explosives on the API 4000.

The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Secondary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 345004006 (CAAN-14-56597) from SDG 2014-3035 was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The MS/MSD pair (1203055149/1203055150) did not meet RPD acceptance criteria for TATB at 70.1%. The limits are 0-30%. Both the MS (1203055149) and MSD (1203055150) met spike recovery limits for all target analytes. TATB was detected in the parent sample, 345004006 (CAAN-14-56597). The high RPD may be attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Internal Standard (ISTD) Acceptance
The internal standards were not added to the Secondary analyte extracts.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data Exception Report 1282834 was generated for this SDG.

The LCS (1203055148) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%. Both the MS (1203055149) and MSD (1203055150) met spike recovery limits for all target analytes. The data are reported with the appropriate DER.

The MS/MSD pair (1203055149/1203055150) did not meet RPD acceptance criteria for TATB at 70.1%. The limits are 0-30%. Both the MS (1203055149) and MSD (1203055150) met spike recovery limits for all target analytes. TATB was detected in the parent sample, 345004006 (CAAN-14-56597). The high RPD may be attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Additional Comments
Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Primary analyte analysis. It is coupled with a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for the Primary analyte analysis.

The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package.

Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the Primary Nitroaromatic and Nitramine analytes is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

The detection of the Secondary analytes is accomplished through analysis on the following reversed phase column:

YMC: J'sphere ODS-H80, 150 x 4.6mm I.D.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3034 GEL Work Order: 345006

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Michael A. Penny Jr. **Name: Michael Penny**

Date: 15 APR 2014 **Title: Group Leader**

Sample Data Summary

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49275

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 345006001

Sample Amount 2.01 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0402054.wiff

Date Analyzed: 03-APR-14 19:59

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	498	U	149	498
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	498	U	149	498
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	498	U	149	498
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	498	U	149	498
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	498	U	149	498
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	498	U	149	498
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	498	U	149	498
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	498	U	149	498
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	498	U	149	498
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	498	U	149	498
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	498	U	149	498
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	498	U	149	498
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	498	U	149	498
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49275

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 345006001

Sample Amount 2.01 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	498	U	149	498
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	995	U	249	995
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49275

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 345006001

Sample Amount 2.01 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04100046.wiff

Date Analyzed: 11-APR-14 00:00

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	995	U	299	995
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	995	U	299	995
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	995	U	299	995
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1990	U	657	1990
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1990	U	498	1990
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49276

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 345006002

Sample Amount 2.03 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0402055.wiff

Date Analyzed: 03-APR-14 20:34

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	493	U	148	493
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	493	U	148	493
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	493	U	148	493
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	493	U	148	493
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	493	U	148	493
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	493	U	148	493
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	493	U	148	493
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	493	U	148	493
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	493	U	148	493
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	493	U	148	493
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	493	U	148	493
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	493	U	148	493
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	493	U	148	493
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49276

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 345006002

Sample Amount 2.03 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	493	U	148	493
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	985	U	246	985
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49276

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 345006002

Sample Amount 2.03 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04100047.wiff

Date Analyzed: 11-APR-14 00:17

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	985	U	296	985
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	985	U	296	985
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	985	U	296	985
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1970	U	650	1970
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1970	U	493	1970
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC **GEL Job No (SDG):** 2014-3034

Lab Code: GEL **HPLC Column:** Ultracarb Phenomenex 5u ODS (20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
345006001	CAWA-14-49275	89.6	62 - 121	
345006002	CAWA-14-49276	80	62 - 121	
1203055147	MB for batch 1374668	94.4	62 - 121	
1203055148	LCS for batch 1374668	88.4	62 - 121	
1203055149	CAAN-14-56597MS	84.8	62 - 121	
1203055150	CAAN-14-56597MSD	86.8	62 - 121	

DNT = 3,4-Dinitrotoluene

Lab Code: GEL **HPLC Column:** YMC J'sphere ODS-H80

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
345006001	CAWA-14-49275	93.6	62 - 121	
345006002	CAWA-14-49276	94.4	62 - 121	
1203055147	MB for batch 1374668	93.2	62 - 121	
1203055148	LCS for batch 1374668	96	62 - 121	
1203055149	CAAN-14-56597MS	86	62 - 121	
1203055150	CAAN-14-56597MSD	94.8	62 - 121	

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Extract Batch Code: 1374668

Date Extracted: 26-MAR-14

GEL LCS ID: 1203055148

GEL LCSDUP ID:

Analysis Date/Time: 03-APR-14 13:34

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec	#	LCSD Conc	LCSD Rec	#	RPD	#	RPD	Recovery Limits
1,3,5-Trinitrobenzene	5000	4170	83.4								63 - 128
2,4,6-Trinitrotoluene	5000	3950	79								67 - 126
2,6-Dinitrotoluene	5000	4230	84.6								65 - 119
2-Amino-4,6-dinitrotoluene	5000	4420	88.4								67 - 126
2,4-Dinitrotoluene	5000	4450	89								69 - 122
4-Amino-2,6-dinitrotoluene	5000	4890	97.8								62 - 135
Nitrobenzene	5000	4590	91.8								58 - 130
RDX	5000	4400	88								58 - 136
m-Dinitrobenzene	5000	4490	89.8								64 - 129
p-Nitrotoluene	5000	4870	97.4								65 - 119
o-Nitrotoluene	5000	4960	99.2								60 - 121
m-Nitrotoluene	5000	4900	98								60 - 126
Tetryl	5000	1260	25.2	*							36 - 131
PETN	5000	4320	86.4								61 - 125
HMX	5000	4520	90.4								58 - 123

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Extract Batch Code: 1374668

Date Extracted: 26-MAR-14

GEL LCS ID: 1203055148

GEL LCSDUP ID:

Analysis Date/Time: 10-APR-14 20:56

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,6-Diamino-4-nitrotoluene	5000	4080	81.6					65 - 127
3,5-Dinitroaniline	5000	3930	78.6					61 - 131
2,4-Diamino-6-nitrotoluene	5000	4350	87					65 - 116
TATB	5000	3420	68.4					36 - 156
tris(o-cresyl) phosphate	5000	5560	111					70 - 120

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAAN-14-56597

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Extract Batch Code: 1374668

Date Extracted: 26-MAR-14

GEL Spike ID: 1203055149

GEL SpikeDup ID: 1203055150

Analysis Date/Time: 03-APR-14 14:44

MSD Analysis Date/Time: 03-APR-14 15:19

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
1,3,5-Trinitrobenzene	4901.961	0	4180	85.2	4610	93.2	9.95	30	63 - 121
2,4,6-Trinitrotoluene	4901.961	0	4480	91.4	4530	91.6	1.2	30	60 - 129
2,4-Dinitrotoluene	4901.961	0	4210	85.8	4470	90.2	5.98	30	69 - 124
2,6-Dinitrotoluene	4901.961	0	4070	83	4160	84	2.18	30	65 - 119
2-Amino-4,6-dinitrotoluene	4901.961	0	4190	85.4	4120	83.2	1.63	30	67 - 133
4-Amino-2,6-dinitrotoluene	4901.961	0	4660	95	4860	98.2	4.3	30	62 - 135
HMX	4901.961	0	4550	92.8	4820	97.4	5.82	30	54 - 127
Nitrobenzene	4901.961	0	4430	90.4	4720	95.4	6.37	30	58 - 120
PETN	4901.961	0	3840	78.4	3950	79.8	2.76	30	58 - 125
RDX	4901.961	0	4300	87.8	4460	90	3.46	30	45 - 135
Tetryl	4901.961	0	3960	80.8	3980	80.4	.489	30	36 - 130
m-Dinitrobenzene	4901.961	0	4410	90	4590	92.8	4.05	30	64 - 129
m-Nitrotoluene	4901.961	0	4430	90.4	4710	95.2	6.16	30	59 - 126
o-Nitrotoluene	4901.961	0	4460	91	4430	89.4	.789	30	60 - 116
p-Nitrotoluene	4901.961	0	4310	88	4420	89.2	2.34	30	61 - 120

#Column to be used to flag recovery and RPD values with an asterisk

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAAN-14-56597

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Extract Batch Code: 1374668

Date Extracted: 26-MAR-14

GEL Spike ID: 1203055149

GEL SpikeDup ID: 1203055150

Analysis Date/Time: 10-APR-14 21:30

MSD Analysis Date/Time: 10-APR-14 21:47

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec	#	MSD Conc	MSD Rec	#	RPD	#	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	4901.961	0	4030	82.2		4240	85.6		5.04		30	61 - 133
2,6-Diamino-4-nitrotoluene	4901.961	0	4240	86.4		4780	96.6		12.1		30	65 - 119
3,5-Dinitroaniline	4901.961	0	3770	77		3960	80		4.81		30	61 - 131
TATB	4901.961	1470	3190	35		6620	104		70.1	*	30	20 - 164
tris(o-cresyl) phosphate	4901.961	0	5280	108		5540	112		4.81		30	70 - 123

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1374668

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055147

Sample Amount 2 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0402042.wiff

Date Analyzed: 03-APR-14 12:59

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1374668

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055147

Sample Amount 2 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	U	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1374668

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055147

Sample Amount 2 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04100034.wiff

Date Analyzed: 10-APR-14 20:40

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1374668

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055148

Sample Amount 2 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0402043.wiff

Date Analyzed: 03-APR-14 13:34

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	1260		150	500
479-45-8	*Tetryl*				
118-96-7	2,4,6-Trinitrotoluene	3950		150	500
118-96-7	*2,4,6-Trinitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4170		150	500
99-35-4	*1,3,5-Trinitrobenzene*				
606-20-2	2,6-Dinitrotoluene	4230		150	500
606-20-2	*2,6-Dinitrotoluene*				
78-11-5	PETN	4320		250	1000
78-11-5	*PETN*				
121-82-4	RDX	4400		150	500
121-82-4	*RDX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4420		150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4450		150	500
121-14-2	*2,4-Dinitrotoluene*				
99-65-0	m-Dinitrobenzene	4490		150	500
99-65-0	*m-Dinitrobenzene*				
2691-41-0	HMX	4520		150	500
2691-41-0	*HMX*				
98-95-3	Nitrobenzene	4590		150	500
98-95-3	*Nitrobenzene*				
99-99-0	p-Nitrotoluene	4870		150	500
99-99-0	*p-Nitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	4890		150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1374668

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055148

Sample Amount 2 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-08-1	m-Nitrotoluene	4900		150	500
99-08-1	*m-Nitrotoluene*				
88-72-2	o-Nitrotoluene	4960		150	500
88-72-2	*o-Nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1374668

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055148

Sample Amount 2 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04100035.wiff

Date Analyzed: 10-APR-14 20:56

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	3420		300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	3930		300	1000
618-87-1	*3,5-Dinitroaniline*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4080		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	4350		500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5560		300	1000
78-30-8	*tris(o-cresyl) phosphate*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-14-56597(345004006MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055149

Sample Amount 2.04 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0402045.wiff

Date Analyzed: 03-APR-14 14:44

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	3840		245	980
78-11-5	*PETN*				
479-45-8	Tetryl	3960		147	490
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	4070		147	490
606-20-2	*2,6-Dinitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4180		147	490
99-35-4	*1,3,5-Trinitrobenzene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4190		147	490
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4210		147	490
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	4300		147	490
121-82-4	*RDX*				
99-99-0	p-Nitrotoluene	4310		147	490
99-99-0	*p-Nitrotoluene*				
99-65-0	m-Dinitrobenzene	4410		147	490
99-65-0	*m-Dinitrobenzene*				
98-95-3	Nitrobenzene	4430		147	490
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	4430		147	490
99-08-1	*m-Nitrotoluene*				
88-72-2	o-Nitrotoluene	4460		147	490
88-72-2	*o-Nitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4480		147	490
118-96-7	*2,4,6-Trinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-14-56597(345004006MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055149

Sample Amount 2.04 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
2691-41-0	HMX	4550		147	490
2691-41-0	*HMX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	4660		147	490
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-14-56597(345004006MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055149

Sample Amount 2.04 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04100037.wiff

Date Analyzed: 10-APR-14 21:30

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	3190		294	980
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	3770		294	980
618-87-1	*3,5-Dinitroaniline*				
6629-29-4	2,4-Diamino-6-nitrotoluene	4030		490	1960
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4240		647	1960
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5280		294	980
78-30-8	*tris(o-cresyl) phosphate*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-14-56597(345004006MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055150

Sample Amount 2.02 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0402046.wiff

Date Analyzed: 03-APR-14 15:19

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	3950		248	990
78-11-5	*PETN*				
479-45-8	Tetryl	3980		149	495
479-45-8	*Tetryl*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4120		149	495
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
606-20-2	2,6-Dinitrotoluene	4160		149	495
606-20-2	*2,6-Dinitrotoluene*				
99-99-0	p-Nitrotoluene	4420		149	495
99-99-0	*p-Nitrotoluene*				
88-72-2	o-Nitrotoluene	4430		149	495
88-72-2	*o-Nitrotoluene*				
121-82-4	RDX	4460		149	495
121-82-4	*RDX*				
121-14-2	2,4-Dinitrotoluene	4470		149	495
121-14-2	*2,4-Dinitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4530		149	495
118-96-7	*2,4,6-Trinitrotoluene*				
99-65-0	m-Dinitrobenzene	4590		149	495
99-65-0	*m-Dinitrobenzene*				
99-35-4	1,3,5-Trinitrobenzene	4610		149	495
99-35-4	*1,3,5-Trinitrobenzene*				
99-08-1	m-Nitrotoluene	4710		149	495
99-08-1	*m-Nitrotoluene*				
98-95-3	Nitrobenzene	4720		149	495
98-95-3	*Nitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-14-56597(345004006MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055150

Sample Amount 2.02 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
2691-41-0	HMX	4820		149	495
2691-41-0	*HMX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	4860		149	495
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-14-56597(345004006MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3034

Matrix: SOIL

GEL Sample ID: 1203055150

Sample Amount 2.02 g

Date Received: 21-MAR-14

Moisture:

Extraction Batch ID: 1374668

Extraction Type Sonication

Date Extracted: 26-MAR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04100038.wiff

Date Analyzed: 10-APR-14 21:47

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
618-87-1	3,5-Dinitroaniline	3960		297	990
618-87-1	*3,5-Dinitroaniline*				
6629-29-4	2,4-Diamino-6-nitrotoluene	4240		495	1980
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4780		653	1980
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5540		297	990
78-30-8	*tris(o-cresyl) phosphate*				
3058-38-6	TATB	6620		297	990
3058-38-6	*TATB*				

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 02-APR-14 13:04

GEL Data File: EXP0402001.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 02-APR-14 13:39

GEL Data File: EXP0402002.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 10-APR-14 11:28

GEL Data File: EXS04100001.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 10-APR-14 11:45

GEL Data File: EXS04100002.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 02-APR-14 17:44

GEL Data File: EXP0402009.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 02-APR-14 18:54

GEL Data File: EXP0402011.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 03-APR-14 00:08

GEL Data File: EXP0402020.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 03-APR-14 06:34

GEL Data File: EXP0402031.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 03-APR-14 11:49

GEL Data File: EXP0402040.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 03-APR-14 18:49

GEL Data File: EXP0402052.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 03-APR-14 21:09

GEL Data File: EXP0402056.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 04-APR-14 00:39

GEL Data File: EXP0402062.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 10-APR-14 13:58

GEL Data File: EXS04100010.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	6.82
TATB	0	0
3,5-Dinitroaniline	0	1.01
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 10-APR-14 14:32

GEL Data File: EXS04100012.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 10-APR-14 17:36

GEL Data File: EXS04100023.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 10-APR-14 20:06

GEL Data File: EXS04100032.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 10-APR-14 23:27

GEL Data File: EXS04100044.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3034

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 11-APR-14 00:51

GEL Data File: EXS04100049.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
11-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LC-MS/MS	SW846 8321A Modified	Solid	LANL
Batch ID:	**Sample Numbers:**		
1374669	See Below		

Potentially affected work order(s)(SDG): 345004(2014-3035),345006(2014-3034)

Application Issues:

Failed RPD for MS/MSD, or PS/PSD

Failed Recovery for LCS/LCSD

Specification and Requirements Exception Description:	DER Disposition:
1. The LCS (1203055148) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%.	1. Both the MS (1203055149) and MSD (1203055150) met spike recovery limits for all target analytes. The data are reported with the appropriate DER. The discrepancy is noted in the Case Narrative.
2. The MS/MSD pair (1203055149/1203055150) did not meet RPD acceptance criteria for TATB at 70.1%. The limits are 0-30%.	2. Both the MS (1203055149) and MSD (1203055150) met spike recovery limits for all target analytes. TATB was detected in the parent sample, 345004006 (CAAN-14-56597). The high RPD may be attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Originator's Name:

Lynne Russell 14-APR-14

Data Validator/Group Leader:

Michael Penny 14-APR-14

PCB Analysis

Case Narrative

PCB Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3034

Method/Analysis Information

Procedure:	**Analysis of Polychlorinated Biphenyls by ECD**
Analytical Method:	SW846 3541/8082
Prep Method:	SW846 3541
Analytical Batch Number:	1376191
Prep Batch Number:	1376190

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082:

Sample ID	Client ID
345006001	CAWA-14-49275
345006002	CAWA-14-49276
1203058886	Method Blank (MB)
1203058887	Laboratory Control Sample (LCS)
1203058888	344682002(CAAN-14-56602) Matrix Spike (MS)
1203058889	344682002(CAAN-14-56602) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 20.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All calibration verification standards(CVS, ICV, or CCV) requirements have not been met for this SDG. The bracketing standards failed acceptance criteria with a positive bias. The positive bias for the analytical data is a

result of the instrument response increasing after the initial calibration. There were no target compounds detected at concetrations above the PQL; therefore, the non-compliance has no adverse effects on the data.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for the samples in this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 344682002 (CAAN-14-56602) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recoveries for this SDG were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries for this SDG were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns. All sample extracts were cleaned using alumina. Additionally, copper was added to all sample extracts to remove sulfur.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this batch.

Miscellaneous Information

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for the samples in this SDG in this batch.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

Due to software issue, the surrogate recovery range was not indicated or possibly indicated incorrectly in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Due to rounding differences in the calculation between the forms, the data reported in Sample Summary (form 1) and Spike Recovery Report (form 3) may differ slightly from the data reported in Identification Summary (form 10).

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD8A.I_1	Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler	HP6890 Series ECD	Rtx-CLP I	30m x 0.25mm, 0.25um (Rtx-CLPesticide I)
ECD8A.I_2	Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler	HP6890 Series ECD	Rtx-CLP II	30m x 0.25mm, 0.20um (Rtx-CLPesticide II)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the

requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3034 GEL Work Order: 345006

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Erin Haubert **Name: Erin Haubert**

Date: 14 APR 2014 **Title: Data Validator**

Sample Data Summary

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3034**	**Date Collected:**	**03/19/2014 14:45**	**Matrix:**	**SED**
Lab Sample ID:	**345006001**	**Date Received:**	**03/21/2014 09:00**	**%Moisture:**	**6.8**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA-14-49275**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1376191**	**Inst:**	**ECD8A.I**	**Dilution:**	**1**
Run Date:	**03/31/2014 19:43**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/28/2014 18:40**	**Aliquot:**	**30.18 g**	**Final Volume:**	**1 mL**
Data File:	**033114.B\e8c3166.D**	**Column:**	**1 RTX-CLPEST1**		
	033114.B\e8c3166.D		**2 RTX-CLPEST2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.56	ug/kg	1.18	3.56	1
11104-28-2	Aroclor-1221	U	3.56	ug/kg	1.18	3.56	1
11141-16-5	Aroclor-1232	U	3.56	ug/kg	1.18	3.56	1
53469-21-9	Aroclor-1242	U	3.56	ug/kg	1.18	3.56	1
12672-29-6	Aroclor-1248	U	3.56	ug/kg	1.18	3.56	1
11097-69-1	Aroclor-1254	U	3.56	ug/kg	1.18	3.56	1
11096-82-5	Aroclor-1260	U	3.56	ug/kg	1.18	3.56	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3034**	**Date Collected:**	**03/19/2014 15:05**	**Matrix:**	**SED**
Lab Sample ID:	**345006002**	**Date Received:**	**03/21/2014 09:00**	**%Moisture:**	**3**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA-14-49276**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1376191**	**Inst:**	**ECD8A.I**	**Dilution:**	**1**
Run Date:	**03/31/2014 19:58**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/28/2014 18:40**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**033114.B\e8c3167.D**	**Column:**	**1 RTX-CLPEST1**		
	033114.B\e8c3167.D		**2 RTX-CLPEST2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.43	ug/kg	1.14	3.43	1
11104-28-2	Aroclor-1221	U	3.43	ug/kg	1.14	3.43	1
11141-16-5	Aroclor-1232	U	3.43	ug/kg	1.14	3.43	1
53469-21-9	Aroclor-1242	U	3.43	ug/kg	1.14	3.43	1
12672-29-6	Aroclor-1248	U	3.43	ug/kg	1.14	3.43	1
11097-69-1	Aroclor-1254	U	3.43	ug/kg	1.14	3.43	1
11096-82-5	Aroclor-1260	U	3.43	ug/kg	1.14	3.43	1

Quality Control Summary

PCB

Surrogate Recovery Report

SDG Number: 2014-3034

Matrix Type: SOLID

Sample ID	Client ID	4CMX 1 %REC #	4CMX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #
1203058886	MB for batch 1376190	71	82	86	106
1203058887	LCS for batch 1376190	74	86	81	99
1203058888	CAAN-14-56602MS	61	67	47	58
1203058889	CAAN-14-56602MSD	53	59	39	48
345006001	CAWA-14-49275	78	89	74	94
345006002	CAWA-14-49276	57	69	46	57

Surrogate		Acceptance Limits
4CMX	= 4cmx	(44%-106%)
DCB	= Decachlorobiphenyl	(35%-119%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3034**
Client ID: **LCS for batch 1376190**
Lab Sample ID **1203058887**
Instrument: **ECD8A.I**
Analyst: **JXM**
Inj. Vol: **1 uL**

Sample Type: **Laboratory Control Sample**
Matrix: **SOIL**
Analysis Date: **03/31/2014 16:28**
Prep Batch ID: **1376190**
Batch ID: **1376191**
Dilution: 1

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	LCS	Aroclor-1016	33.3	0.0	27.4	82	39-120
11096-82-5	LCS	Aroclor-1260	33.3	0.0	31.2	94	50-116

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3034**	**Sample Type:**	**Matrix Spike**	
Client ID:	**CAAN-14-56602MS**	**Matrix:**	**S**	
Lab Sample ID	**1203058888**	**%Moisture:**	**17.7**	
Instrument:	**ECD8A.I**	**Analysis Date:**	**03/31/2014 17:09**	**Dilution: 1**
Analyst:	**JXM**	**Prep Batch ID:**	**1376190**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1376191**	

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	MS	Aroclor-1016	40.5	0.00	U	19.0	47	25-125
11096-82-5	MS	Aroclor-1260	40.5	0.00	U	19.9	49	28-127

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3034**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**CAAN-14-56602MSD**	**Matrix:**	**S**	
Lab Sample ID	**1203058889**	**%Moisture:**	**17.7**	
Instrument:	**ECD8A.I**	**Analysis Date:**	**03/31/2014 17:24**	**Dilution: 1**
Analyst:	**JXM**	**Prep Batch ID:**	**1376190**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1376191**	

CAS No	Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
12674-11-2	MSD Aroclor-1016	40.4	0.00	U	17.0	42	25-125	11	0-30
11096-82-5	MSD Aroclor-1260	40.4	0.00	U	18.4	46	28-127	8	0-30

Method Blank Summary

SDG Number:	**2014-3034**	**Client:**	**ARSL004**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 1376190**	**Instrument ID:**	**ECD8A.I_1** **ECD8A.I_2**	**Data File:**	**033114.B\e8c3151.D** **033114.B\e8c3151.D**
Lab Sample ID:	**1203058886**				
Column:	**RTX-CLPEST1** **RTX-CLPEST2**	**Prep Date:**	**03/28/2014 18:40**	**Analyzed:**	**03/31/14 16:16**

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 1376190	**1203058887**	**033114.B\e8c3152.D** **033114.B\e8c3152.D**	**03/31/14**	**1628**
02 CAAN-14-56602MS	**1203058888**	**033114.B\e8c3155.D** **033114.B\e8c3155.D**	**03/31/14**	**1709**
03 CAAN-14-56602MSD	**1203058889**	**033114.B\e8c3156.D** **033114.B\e8c3156.D**	**03/31/14**	**1724**
04 CAWA-14-49275	**345006001**	**033114.B\e8c3166.D** **033114.B\e8c3166.D**	**03/31/14**	**1943**
05 CAWA-14-49276	**345006002**	**033114.B\e8c3167.D** **033114.B\e8c3167.D**	**03/31/14**	**1958**

Quality Control Data

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3034**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203058886**				
Client Sample:	**QC for batch 1376190**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**MB for batch 1376190**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1376191**	**Inst:**	**ECD8A.I**	**Dilution:**	**1**
Run Date:	**03/31/2014 16:16**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/28/2014 18:40**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**033114.B\e8c3151.D**	**Column:**	**1 RTX-CLPEST1**		
	033114.B\e8c3151.D		**2 RTX-CLPEST2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.33	ug/kg	1.11	3.33	1
11104-28-2	Aroclor-1221	U	3.33	ug/kg	1.11	3.33	1
11141-16-5	Aroclor-1232	U	3.33	ug/kg	1.11	3.33	1
53469-21-9	Aroclor-1242	U	3.33	ug/kg	1.11	3.33	1
12672-29-6	Aroclor-1248	U	3.33	ug/kg	1.11	3.33	1
11097-69-1	Aroclor-1254	U	3.33	ug/kg	1.11	3.33	1
11096-82-5	Aroclor-1260	U	3.33	ug/kg	1.11	3.33	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3034**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203058887**				
Client Sample:	**QC for batch 1376190**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**LCS for batch 1376190**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1376191**	**Inst:**	**ECD8A.I**	**Dilution:**	**1**
Run Date:	**03/31/2014 16:28**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/28/2014 18:40**	**Aliquot:**	**30.05 g**	**Final Volume:**	**1 mL**
Data File:	**033114.B\e8c3152.D**	**Column:**	**1 RTX-CLPEST1**		
	033114.B\e8c3152.D		**2 RTX-CLPEST2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		27.4	ug/kg	1.11	3.33	2
11104-28-2	Aroclor-1221	U	3.33	ug/kg	1.11	3.33	1
11141-16-5	Aroclor-1232	U	3.33	ug/kg	1.11	3.33	1
53469-21-9	Aroclor-1242	U	3.33	ug/kg	1.11	3.33	1
12672-29-6	Aroclor-1248	U	3.33	ug/kg	1.11	3.33	1
11097-69-1	Aroclor-1254	U	3.33	ug/kg	1.11	3.33	1
11096-82-5	Aroclor-1260		31.2	ug/kg	1.11	3.33	2

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3034**	**Date Collected:**	**03/13/2014 16:00**	**Matrix:**	**S**
Lab Sample ID:	**1203058888**	**Date Received:**	**03/15/2014 09:00**	**%Moisture:**	**17.7**
Client Sample:	**QC for batch 1376190**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**CAAN-14-56602MS**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1376191**	**Inst:**	**ECD8A.I**	**Dilution:**	**1**
Run Date:	**03/31/2014 17:09**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/28/2014 18:40**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**033114.B\e8c3155.D**	**Column:**	**1 RTX-CLPEST1**		
	033114.B\e8c3155.D		**2 RTX-CLPEST2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		19.0	ug/kg	1.35	4.05	1
11104-28-2	Aroclor-1221	U	4.05	ug/kg	1.35	4.05	1
11141-16-5	Aroclor-1232	U	4.05	ug/kg	1.35	4.05	1
53469-21-9	Aroclor-1242	U	4.05	ug/kg	1.35	4.05	1
12672-29-6	Aroclor-1248	U	4.05	ug/kg	1.35	4.05	1
11097-69-1	Aroclor-1254	U	4.05	ug/kg	1.35	4.05	1
11096-82-5	Aroclor-1260		19.9	ug/kg	1.35	4.05	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3034**	**Date Collected:**	**03/13/2014 16:00**	**Matrix:**	**S**
Lab Sample ID:	**1203058889**	**Date Received:**	**03/15/2014 09:00**	**%Moisture:**	**17.7**
Client Sample:	**QC for batch 1376190**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**CAAN-14-56602MSD**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1376191**	**Inst:**	**ECD8A.I**	**Dilution:**	**1**
Run Date:	**03/31/2014 17:24**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/28/2014 18:40**	**Aliquot:**	**30.04 g**	**Final Volume:**	**1 mL**
Data File:	**033114.B\e8c3156.D**	**Column:**	**1 RTX-CLPEST1**		
	033114.B\e8c3156.D		**2 RTX-CLPEST2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		17.0	ug/kg	1.35	4.04	1
11104-28-2	Aroclor-1221	U	4.04	ug/kg	1.35	4.04	1
11141-16-5	Aroclor-1232	U	4.04	ug/kg	1.35	4.04	1
53469-21-9	Aroclor-1242	U	4.04	ug/kg	1.35	4.04	1
12672-29-6	Aroclor-1248	U	4.04	ug/kg	1.35	4.04	1
11097-69-1	Aroclor-1254	U	4.04	ug/kg	1.35	4.04	1
11096-82-5	Aroclor-1260		18.4	ug/kg	1.35	4.04	1

Metals Analysis

Case Narrative

Metals Fractional Narrative
ARS International, LLC (ARSL)
SDG 2014-3034

Sample Analysis

Sample ID	Client ID
345006001	CAWA-14-49275
345006002	CAWA-14-49276
1203055052	Method Blank (MB) **ICP**
1203055053	Laboratory Control Sample (LCS)
1203055056	345004001(CAAN-14-56593L) Serial Dilution (SD)
1203055054	345004001(CAAN-14-56593D) Sample Duplicate (DUP)
1203055055	345004001(CAAN-14-56593S) Matrix Spike (MS)
1203068932	345004001(CAAN-14-56593PS) Post Spike (PS)
1203055057	Method Blank (MB) **ICP-MS**
1203055058	Laboratory Control Sample (LCS)
1203055061	345004001(CAAN-14-56593L) Serial Dilution (SD)
1203055059	345004001(CAAN-14-56593D) Sample Duplicate (DUP)
1203055060	345004001(CAAN-14-56593S) Matrix Spike (MS)
1203067714	345004001(CAAN-14-56593PS) Post Spike (PS)
1203064676	Method Blank (MB) **CVAA**
1203064677	Laboratory Control Sample (LCS)
1203064680	345004001(CAAN-14-56593L) Serial Dilution (SD)
1203064678	345004001(CAAN-14-56593D) Sample Duplicate (DUP)
1203064679	345004001(CAAN-14-56593S) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" basis.

Method/Analysis Information

Analytical Batch:	1374626, 1374630 and 1378631
Prep Batch :	1374625, 1374629 and 1378630
Standard Operating Procedures:	GL-MA-E-013 REV# 22, GL-MA-E-009 REV# 22, GL-MA-E-014 REV# 25 and GL-MA-E-010 REV# 27
Analytical Method:	SW846 3050B/6010C, SW846 3050B/6020A and SW846 7471A
Prep Method :	SW846 3050B and SW846 7471A Prep

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 6100E inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL Requirements
The CRDL standard recoveries met the referenced advisory control limits.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 345004001 (CAAN-14-56593)-ICP, ICP-MS and CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS did not meet all the recommended quality control acceptance criteria for percent recoveries for the applicable analytes. The recoveries for aluminum and nickel were not within the acceptance limits in samples 1203055055 (CAAN-14-56593)-ICP and 1203055060 (CAAN-14-56593)-ICP-MS, respectively. See data exception reports (DER ID 1283907 and 1284262) in the miscellaneous data section of this data package.

Duplicate Relative Percent Difference (RPD) Statement
The relative percent difference (RPD) obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the contract required detection limit (RL), a control of +/-RL is used to evaluate the DUP results. Not all applicable analytes met these requirements. The RPD values for aluminum, barium, calcium, chromium, cobalt, iron, lead, magnesium, manganese, potassium, vanadium and zinc were not within the acceptance limits in sample 1203055054 (CAAN-14-56593)-ICP. The RPD value for nickel was not within the acceptance limits in sample 1203055059 (CAAN-14-56593)-ICP-MS. See data exception reports (DER ID 1283907 and 1284262) in the miscellaneous data section of this data package.

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the absence of matrix interferences in the post-digested sample.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the established acceptance criteria.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG were diluted the standard two times for solids analyzed on the ICPMS.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. Data exception reports (DER ID 1284262 and 1283907) were generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Pat Stull **Date:** 04/17/2014

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3034 GEL Work Order: 345006

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

J Value is estimated

N Metals--The Matrix spike sample recovery is not within specified control limits

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by Pat Steele 04/17/2014

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3034 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345006001 **BASIS:** Dry Weight **DATE COLLECTED** 19−MAR−14

CLIENT ID: CAWA−14−49275 **LEVEL:** Low **DATE RECEIVED** 21−MAR−14

MATRIX: SED **%SOLIDS:** 93.2

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2790000	ug/kg		7100	20900	20900	1	P	HSC	04/16/14 11:55	041614A−2	1374626
7440−36−0	Antimony	1040	ug/kg	U	344	1040	1040	1	P	HSC	04/16/14 11:55	041614A−2	1374626
7440−38−2	Arsenic	597	ug/kg	J	193	965	965	2	MS	SKJ	04/15/14 05:55	140414−3	1374630
7440−39−3	Barium	77400	ug/kg		104	522	522	1	P	HSC	04/15/14 14:33	041514−1	1374626
7440−41−7	Beryllium	500	ug/kg		19.3	96.5	96.5	2	MS	SKJ	04/17/14 12:39	140417−5	1374630
7440−43−9	Cadmium	136	ug/kg	J	104	522	522	1	P	HSC	04/15/14 14:33	041514−1	1374626
7440−70−2	Calcium	1090000	ug/kg		8350	26100	26100	1	P	HSC	04/15/14 14:33	041514−1	1374626
7440−47−3	Chromium	4440	ug/kg		157	522	522	1	P	HSC	04/15/14 14:33	041514−1	1374626
7440−48−4	Cobalt	2420	ug/kg		157	522	522	1	P	HSC	04/15/14 14:33	041514−1	1374626
7440−50−8	Copper	3550	ug/kg		313	1040	1040	1	P	HSC	04/15/14 14:33	041514−1	1374626
7439−89−6	Iron	13000000	ug/kg		8350	26100	26100	1	P	HSC	04/15/14 14:33	041514−1	1374626
7439−92−1	Lead	11100	ug/kg		344	1040	1040	1	P	HSC	04/15/14 14:33	041514−1	1374626
7439−95−4	Magnesium	832000	ug/kg		8870	31300	31300	1	P	HSC	04/15/14 14:33	041514−1	1374626
7439−96−5	Manganese	369000	ug/kg		209	1040	1040	1	P	HSC	04/15/14 14:33	041514−1	1374626
7439−97−6	Mercury	8.44	ug/kg	J	3.93	11.7	11.7	1	AV	NOR1	04/10/14 12:58	041014S1−6	1378631
7440−02−0	Nickel	2450	ug/kg		96.5	386	386	2	MS	SKJ	04/15/14 05:55	140414−3	1374630
7440−09−7	Potassium	759000	ug/kg		6680	26100	26100	1	P	HSC	04/16/14 11:55	041614A−2	1374626
7782−49−2	Selenium	965	ug/kg	U	318	965	965	2	MS	SKJ	04/15/14 05:55	140414−3	1374630
7440−22−4	Silver	522	ug/kg	U	104	522	522	1	P	HSC	04/15/14 14:33	041514−1	1374626
7440−23−5	Sodium	80800	ug/kg		7310	26100	26100	1	P	HSC	04/15/14 14:33	041514−1	1374626
7440−28−0	Thallium	69.3	ug/kg	J	57.9	386	386	2	MS	SKJ	04/15/14 05:55	140414−3	1374630
7440−62−2	Vanadium	14600	ug/kg		104	522	522	1	P	HSC	04/15/14 14:33	041514−1	1374626
7440−66−6	Zinc	54500	ug/kg		417	1040	1040	1	P	HSC	04/15/14 14:33	041514−1	1374626

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1374626	1374625	SW846 3050B	0.514	g	50	mL	04/15/14	JXM5
1374630	1374629	SW846 3050B	0.556	g	50	mL	04/02/14	MTM1
1378631	1378630	SW846 7471A Prep	0.549	g	30	mL	04/09/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3034 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345006002 **BASIS:** Dry Weight **DATE COLLECTED** 19−MAR−14

CLIENT ID: CAWA−14−49276 **LEVEL:** Low **DATE RECEIVED** 21−MAR−14

MATRIX: SED **%SOLIDS:** 97

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2340000	ug/kg		6830	20100	20100	1	P	HSC	04/16/14 11:59	041614A−2	1374626
7440−36−0	Antimony	1000	ug/kg	U	332	1000	1000	1	P	HSC	04/16/14 11:59	041614A−2	1374626
7440−38−2	Arsenic	476	ug/kg	J	185	926	926	2	MS	SKJ	04/15/14 06:01	140414−3	1374630
7440−39−3	Barium	57900	ug/kg		100	502	502	1	P	HSC	04/15/14 14:36	041514−1	1374626
7440−41−7	Beryllium	429	ug/kg		18.5	92.6	92.6	2	MS	SKJ	04/17/14 12:41	140417−5	1374630
7440−43−9	Cadmium	109	ug/kg	J	100	502	502	1	P	HSC	04/15/14 14:36	041514−1	1374626
7440−70−2	Calcium	811000	ug/kg		8040	25100	25100	1	P	HSC	04/15/14 14:36	041514−1	1374626
7440−47−3	Chromium	3440	ug/kg		151	502	502	1	P	HSC	04/15/14 14:36	041514−1	1374626
7440−48−4	Cobalt	1940	ug/kg		151	502	502	1	P	HSC	04/15/14 14:36	041514−1	1374626
7440−50−8	Copper	2020	ug/kg		301	1000	1000	1	P	HSC	04/15/14 14:36	041514−1	1374626
7439−89−6	Iron	10200000	ug/kg		8040	25100	25100	1	P	HSC	04/15/14 14:36	041514−1	1374626
7439−92−1	Lead	10300	ug/kg		332	1000	1000	1	P	HSC	04/15/14 14:36	041514−1	1374626
7439−95−4	Magnesium	559000	ug/kg		8540	30100	30100	1	P	HSC	04/15/14 14:36	041514−1	1374626
7439−96−5	Manganese	345000	ug/kg		201	1000	1000	1	P	HSC	04/15/14 14:36	041514−1	1374626
7439−97−6	Mercury	12.1	ug/kg	U	4.05	12.1	12.1	1	AV	NOR1	04/10/14 13:00	041014S1−6	1378631
7440−02−0	Nickel	2050	ug/kg		92.6	370	370	2	MS	SKJ	04/15/14 06:01	140414−3	1374630
7440−09−7	Potassium	564000	ug/kg		6430	25100	25100	1	P	HSC	04/16/14 11:59	041614A−2	1374626
7782−49−2	Selenium	926	ug/kg	U	305	926	926	2	MS	SKJ	04/15/14 06:01	140414−3	1374630
7440−22−4	Silver	502	ug/kg	U	100	502	502	1	P	HSC	04/15/14 14:36	041514−1	1374626
7440−23−5	Sodium	70100	ug/kg		7030	25100	25100	1	P	HSC	04/15/14 14:36	041514−1	1374626
7440−28−0	Thallium	370	ug/kg	U	55.5	370	370	2	MS	SKJ	04/15/14 06:01	140414−3	1374630
7440−62−2	Vanadium	10200	ug/kg		100	502	502	1	P	HSC	04/15/14 14:36	041514−1	1374626
7440−66−6	Zinc	43600	ug/kg		402	1000	1000	1	P	HSC	04/15/14 14:36	041514−1	1374626

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1374626	1374625	SW846 3050B	0.513	g	50	mL	04/15/14	JXM5
1374630	1374629	SW846 3050B	0.557	g	50	mL	04/02/14	MTM1
1378631	1378630	SW846 7471A Prep	0.512	g	30	mL	04/09/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

Quality Control Summary

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−3034

Contract: LANL00114

Matrix: SED

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1203055052								
	Aluminum	6720	ug/kg	+/−19800	U	P	6720	19800
	Antimony	433	ug/kg	+/−988	J	P	326	988
	Barium	98.8	ug/kg	+/−494	U	P	98.8	494
	Cadmium	98.8	ug/kg	+/−494	U	P	98.8	494
	Calcium	7910	ug/kg	+/−24700	U	P	7910	24700
	Chromium	148	ug/kg	+/−494	U	P	148	494
	Cobalt	148	ug/kg	+/−494	U	P	148	494
	Copper	296	ug/kg	+/−988	U	P	296	988
	Iron	7910	ug/kg	+/−24700	U	P	7910	24700
	Lead	345	ug/kg	+/−988	J	P	326	988
	Magnesium	8400	ug/kg	+/−29600	U	P	8400	29600
	Manganese	198	ug/kg	+/−988	U	P	198	988
	Potassium	10700	ug/kg	+/−24700	J	P	6320	24700
	Silver	98.8	ug/kg	+/−494	U	P	98.8	494
	Sodium	6920	ug/kg	+/−24700	U	P	6920	24700
	Vanadium	98.8	ug/kg	+/−494	U	P	98.8	494
	Zinc	411	ug/kg	+/−988	J	P	395	988
1203055057								
	Arsenic	200	ug/kg	+/−998	U	MS	200	998
	Beryllium	20	ug/kg	+/−99.8	U	MS	20	99.8
	Nickel	99.8	ug/kg	+/−399	U	MS	99.8	399
	Selenium	329	ug/kg	+/−998	U	MS	329	998
	Thallium	63.1	ug/kg	+/−399	J	MS	59.9	399
1203064676								
	Mercury	4.02	ug/kg	+/−12	U	AV	4.02	12

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3034 **Client ID** CAAN−14−56593S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 98.5

Sample ID: 345004001 **Spike ID:** 1203055055

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/kg	75−125	2020000		985000		494000	209	N	P
Antimony	ug/kg	75−125	50100		886	J	49400	99.6		P
Barium	ug/kg	75−125	61200		12000		49400	99.5		P
Cadmium	ug/kg	75−125	50700		125	J	49400	102		P
Calcium	ug/kg	75−125	768000		369000		494000	80.7		P
Chromium	ug/kg	75−125	52800		4790		49400	97.1		P
Cobalt	ug/kg	75−125	49500		1460		49400	97.4		P
Copper	ug/kg	75−125	53500		1030		49400	106		P
Iron	ug/kg		7990000		10800000		494000	−561	N/A	P
Lead	ug/kg	75−125	54700		5170		49400	100		P
Magnesium	ug/kg	75−125	913000		404000		494000	103		P
Manganese	ug/kg		223000		238000		49400	−31.1	N/A	P
Potassium	ug/kg	75−125	816000		274000		494000	110		P
Silver	ug/kg	75−125	51100		100	U	49400	103		P
Sodium	ug/kg	75−125	535000		28400		494000	103		P
Vanadium	ug/kg	75−125	59500		13700		49400	92.6		P
Zinc	ug/kg	75−125	81600		42700		49400	78.8		P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3034 **Client ID** CAAN−14−56593S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 98.5

Sample ID: 345004001 **Spike ID:** 1203055060

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Arsenic	ug/kg	75−125	4670		533	J	4920	84.1		MS
Beryllium	ug/kg	75−125	5580		237		4920	109		MS
Nickel	ug/kg	75−125	5960		3160		4920	56.9	N	MS
Selenium	ug/kg	75−125	4120		328	U	4920	81.6		MS
Thallium	ug/kg	75−125	4520		59.6	U	4920	90.7		MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3034 **Client ID** CAAN−14−56593S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 98.5

Sample ID: 345004001 **Spike ID:** 1203064679

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/kg	80−120	111		4.03	U	116	95.4		AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3034 **Client ID** CAAN−14−56593PS

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 98.5

Sample ID: 345004001 **Spike ID:** 1203067714

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Nickel	ug/L	80−120	38.9		15.9		25	91.9		MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3034 **Client ID:** CAAN−14−56593PS

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 98.5

Sample ID: 345004001 **Spike ID:** 1203068932

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	80−120	14600		9820		5000	96.4		P

***Analytical Methods:**

P **SW846 3050B/6010C**

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3034 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAAN−14−56593D

Matrix: SOIL **Level:** Low

Sample ID: 345004001 **Duplicate ID:** 1203055054 **Percent Solids for Dup:** 98.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/kg	+/−20%	985000		698000		34.2	*	P
Antimony	ug/kg		886	J	330	U	200		P
Barium	ug/kg	+/−20%	12000		8990		28.9	*	P
Cadmium	ug/kg		125	J	100	U	200		P
Calcium	ug/kg	+/−20%	369000		245000		40.5	*	P
Chromium	ug/kg	+/−501	4790		2030		80.9	*	P
Cobalt	ug/kg	+/−501	1460		899		47.4	*	P
Copper	ug/kg	+/−1000	1030		749	J	31.9		P
Iron	ug/kg	+/−20%	10800000		6440000		50.3	*	P
Lead	ug/kg	+/−1000	5170		3670		34	*	P
Magnesium	ug/kg	+/−20%	404000		215000		60.8	*	P
Manganese	ug/kg	+/−20%	238000		145000		48.5	*	P
Potassium	ug/kg	+/−20%	274000		193000		34.9	*	P
Silver	ug/kg		100	U	100	U			P
Sodium	ug/kg	+/−25000	28400		21700	J	26.8		P
Vanadium	ug/kg	+/−20%	13700		8020		52.6	*	P
Zinc	ug/kg	+/−20%	42700		27300		43.9	*	P

***Analytical Methods:**

P SW846 3050B/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3034 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAAN−14−56593D

Matrix: SOIL **Level:** Low

Sample ID: 345004001 **Duplicate ID:** 1203055059 **Percent Solids for Dup:** 98.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Arsenic	ug/kg	+/−992	533	J	412	J	25.7		MS
Beryllium	ug/kg	+/−99.2	237		172		31.8		MS
Nickel	ug/kg	+/−397	3160		1230		87.9	*	MS
Selenium	ug/kg		328	U	327	U			MS
Thallium	ug/kg		59.6	U	59.5	U			MS

***Analytical Methods:**
MS SW846 3050B/6020A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3034 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAAN−14−56593D

Matrix: SOIL **Level:** Low

Sample ID: 345004001 **Duplicate ID:** 1203064678 **Percent Solids for Dup:** 98.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/kg		4.03	U	4.06	U			AV

***Analytical Methods:**

AV SW846 7471A

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3034

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203055053								
	Aluminum	ug/kg	8630000	5950000		68.9	44.9−154.4	P
	Antimony	ug/kg	165000	192000		117	33.1−167.3	P
	Barium	ug/kg	288000	285000		98.9	82.8−117.6	P
	Cadmium	ug/kg	84500	83900		99.3	84−115.9	P
	Calcium	ug/kg	6080000	6050000		99.4	83.2−117	P
	Chromium	ug/kg	167000	171000		102	81.5−117.9	P
	Cobalt	ug/kg	86500	89100		103	84.8−114.9	P
	Copper	ug/kg	186000	197000		106	84−116.6	P
	Iron	ug/kg	12400000	13600000		109	50.5−148.8	P
	Lead	ug/kg	119000	122000		103	83.3−116.7	P
	Magnesium	ug/kg	2900000	2720000		93.8	75−125.3	P
	Manganese	ug/kg	308000	312000		101	82.6−117.4	P
	Potassium	ug/kg	2760000	2360000		85.3	69.1−130.9	P
	Silver	ug/kg	54900	59800		109	66.3−133.7	P
	Sodium	ug/kg	501000	497000		99.2	73.6−126.4	P
	Vanadium	ug/kg	137000	148000		108	79.7−120.3	P
	Zinc	ug/kg	205000	201000		98.1	82−118	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3034

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203055058								
	Arsenic	ug/kg	137000	131000		95.5	83.2−117.5	MS
	Beryllium	ug/kg	138000	154000		111	84.1−115.9	MS
	Nickel	ug/kg	159000	164000		103	84.3−115.7	MS
	Selenium	ug/kg	43500	42400		97.5	77.9−122.3	MS
	Thallium	ug/kg	146000	149000		102	81.5−119.2	MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3034

Contract: LANL00114

Aqueous LCS Source:

Solid LCS Source: ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203064677								
	Mercury	ug/kg	7690	8310		108	71.4−129	AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3034 **Client ID** CAAN−14−56593L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 345004001 **Serial Dilution ID:** 1203055056

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	9820		10100		2.48		10	P
Antimony	8.83	J	16.5	U	100			P
Barium	120		115		3.77		10	P
Cadmium	1.25	J	5	U	100			P
Calcium	3680		3900		5.84			P
Chromium	47.7		45.5		4.7			P
Cobalt	14.5		12.4	J	14.8			P
Copper	10.3		15	U	100			P
Iron	107000		111000		4.06		10	P
Lead	51.6		65.3		26.7			P
Magnesium	4020		3980		1.14			P
Manganese	2370		2420		2.09		10	P
Potassium	2730		2990		9.27			P
Silver	1	U	5	U				P
Sodium	283		350	U	100			P
Vanadium	137		136		1.01		10	P
Zinc	426		416		2.32		10	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3034 **Client ID** CAAN−14−56593L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 345004001 **Serial Dilution ID:** 1203055061

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Arsenic	2.68	J	5	U	100			MS
Beryllium	1.19		1.39	J	16.7			MS
Nickel	15.9		16.8		5.52			MS
Selenium	1.65	U	8.25	U				MS
Thallium	.3	U	1.5	U				MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3034 **Client ID** CAAN−14−56593L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 345004001 **Serial Dilution ID:** 1203064680

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **SW846 7471A**

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
16-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW846 3050B/6010C	Solid	LANL
Batch ID:	**Sample Numbers:**		
1374626	See Below		

Potentially affected work order(s)(SDG): 345004(2014-3035),345006(2014-3034)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for DUP

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203055055MS 2. Failed RPD for DUP: QC 1203055054DUP	1. The matrix spike recovery failed outside of the control limits for aluminum. The post spike passed the required control limits for all analytes. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. 2. The sample and sample duplicate % RPD failed outside the control limits for aluminum,barium,calcium,chromium,cobalt,iron,lead,magnesium, manganese,potassium,vanadium and zinc due to possible sample non-homogeneity and/or matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. Sample # 345004001 is a brown granular substance with small pebbles.

Originator's Name:

Helen Camello 16-APR-14

Data Validator/Group Leader:

Jamie Johnson 17-APR-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
17-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP/MS	SW846 3050B/6020A	Solid	LANL
Batch ID:	**Sample Numbers:**		
1374630	See Below		

Potentially affected work order(s)(SDG): 345004(2014-3035),345006(2014-3034)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for DUP

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203055060MS 2. Failed RPD for DUP: QC 1203055059DUP	The matrix spike recovery failed outside of the control limits for Ni. The post spike passed the required control limits for Ni. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. The sample and sample duplicate % RPD failed outside the control limits for Ni due to possible sample non-homogeneity and/or matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.

Originator's Name:

Samantha Jacobs 17-APR-14

Data Validator/Group Leader:

Elizabeth Janssen 17-APR-14

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3037

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CAWA-14-49275	Mar 19 2014	14:45	SED	1
CAWA-14-49276	Mar 19 2014	15:05	SED	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Martin	3/20/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49275 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/19/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1445	MEDIA:		Sed
PRS ID:	Water-Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:		WA-61497	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		8cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: Reach WA-5

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Pkg & Pa

α: 12.55 Gross Alpha 28 dpm

β/γ: 1387 Gross Beta/Gamma 1968 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) J. Riesterer

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Mugylestes (Signature)	3/19/14 5:15	(Printed Name) D. Sherwood (Signature)	3/19/14 5:15
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** ~~Water/CdV 2013 Sediment~~ Monitoring

SAMPLE ID: CAWA-14-49276 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/19/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1505	MEDIA:		Sed.
PRS ID:	Water-Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	~~GS~~ SW 3/7/14	WA-61498	FIELD PREP:	NA	↓
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	↓
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:		8cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	3082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment

LOCATION COMMENTS: Reach WA-5

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
Ø: 12.55
Site: 1387

Gross Alpha 18 dpm

Gross Beta/Gamma 1958 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) J. Riesterer

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Scott Mugdeton	3/19/14 5:15	(Printed Name) S. Sherwood	3/19/14 5:15
(Signature)		(Signature) Shari Sherwood	
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3037

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
5922	EPA:1668A	2				

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
5922	EPA:1668A	25527	25525	2					1	1	1			1	1						

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:1668A	PCBCONGENERS	CACV-14-49260	12010064	MS	0	29	26	0
EPA:1668A	PCBCONGENERS	CACV-14-49260	12010065	MSD	0	29	26	0
EPA:1668A	PCBCONGENERS	CAWA-14-49275	5922001	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWA-14-49276	5922002	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	LCS	12010062	LCS	0	29	26	0
EPA:1668A	PCBCONGENERS	LCSD	12010063	LCSD	0	29	26	0
EPA:1668A	PCBCONGENERS	MB	12010061	MB	177	29	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

None.

Reason Code	Description

DATA VALIDATION REPORT

Reason Code	Description
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49275	WA-61497	REG	EPA:1668A	0	177
CAWA-14-49276	WA-61498	REG	EPA:1668A	0	177

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

April 15, 2014

Mr. Keith Greene
Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: 2012 WQH with LOCUS EDD
Work Order: 5922
SDG: 2014-3037

Dear Mr. Greene:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 21, 2014. This original data report has been prepared and reviewed in accordance with CFAôs standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynthia Larkins
Project Manager

Chain of Custody: 2014-3037
Enclosures

problem solved

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Los Alamos National Laboratory
2012 WQH with LOCUS EDD
Workorder #: 5922
SDG # : 2014-3037

Case Narrative

Receipt Narrative
for
Los Alamos National Laboratory
SDG: 2014-3037
Work Order: 5922

Laboratory Identification
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, North Carolina 28405
(910) 795-0421

Summary
Sample receipt: The samples arrived at Cape Fear Analytical LLC (CFA), Wilmington, North Carolina on March 21, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. Shipping container temperatures were checked, documented, and within specifications. All sample containers arrived without any visible signs of tampering or breakage. Appropriate sample containers were received. Sample containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Sufficient sample was received for analysis. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
5922001	CAWA-14-49275
5922002	CAWA-14-49276

Case Narrative
Sample analyses were conducted using methodology as outlined in Cape Fear Analyticalôs Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist and data from the following fractions: PCB Congeners.

Sincerely,

Cynde Larkins

Cynthia Larkins
Project Manager

List of current CFA Certifications as of 26 March 2014

State	Certification
California (NELAC)	09270CA
New Jersey (NELAC)	NC013
North Carolina	NC01894
South Carolina	99063001
Utah (Primary NELAC)	CFAL

Chain of Custody and Supporting Documentation

CFA WO # 5922

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3037

Page 1 of 1

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CAWA-14-49275	Mar 19 2014	14:45	SED	1
CAWA-14-49276	Mar 19 2014	15:05	SED	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Martin	3/20/14 3:00	Cynde Larkins	CYNDE LARKINS	2MAR14 0930
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: LANL	Work Order: 5922
Received By: Cynde Larkins	Date/Time Received: 21MAR14 0930

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	✓		
Samples < 2x background?	✓		

* Notify RSO of any responses in this column immediately.

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags (blue ice) dry ice none other (describe) 2.8°
4	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
5	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
6	Samples received within holding time?	✓			Sample IDs, tests affected:
7	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
8	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
9	Number of containers received match number indicated on COC?	✓			Sample IDs, containers affected:
10	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CL Date: 21MAR14

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 20MAR14
ACTWGT: 26.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO CHRIS CORNWELL
CAPE FEAR ANALYTICAL
3306 KITTY HAWK ROAD, SUITE

WILMINGTON NC 28405
(910) 795-0421
REF: WE9936W200

8336
03:21
RT 357 1
FZ 359

Fed
Expre

E

TRK# 0201 5908 1776 8336

FRI - 21 MAR 10:30A
PRIORITY OVERNIGHT

XH ILMA

28405
NC-US GSO

Part # 156148-434 RIT2 10/11

temp. = 2.8°

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Los Alamos National Laboratory (LANL)
SDG 2014-3037
Work Order 5922

Method/Analysis Information

Product:	**Method 1668A PCB Congeners in Solids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3540C
Analytical Batch Number:	25527
Clean Up Batch Number:	25526
Extraction Batch Number:	25525

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
5922001	CAWA-14-49275
5922002	CAWA-14-49276
12010061	Method Blank (MB)
12010062	Laboratory Control Sample (LCS)
12010063	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard. Any known exceptions are discussed in the narrative.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	High-Resolution GC/MS System	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

LANL001 Los Alamos National Laboratory

Client SDG: 2014-3037 CFA Work Order: 5922

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
B	The target analyte was detected in the associated blank.
C	Congener has coeluters. When Cxxx, refer to congener number xxx for data
J	Value is estimated
U	Analyte was analyzed for , but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 15 APR 2014 **Title: Data Validator**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922001**	**Date Collected:**	**03/19/2014 14:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**8.2**
Client ID:	**CAWA-14-49275**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 19:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**11.72 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.93	.93	pg/g	0.930	4.65
2051-61-8	PCB-2	U	.93	.93	pg/g	0.930	1.86
2051-62-9	PCB-3	U	.93	.93	pg/g	0.930	1.86
13029-08-8	PCB-4	U	.93	.93	pg/g	0.930	3.72
16605-91-7	PCB-5	U	.93	.93	pg/g	0.930	3.72
25569-80-6	PCB-6	U	.93	.93	pg/g	0.930	1.86
33284-50-3	PCB-7	U	.93	.93	pg/g	0.930	3.72
34883-43-7	PCB-8	U	.93	.93	pg/g	0.930	18.6
34883-39-1	PCB-9	U	.93	.93	pg/g	0.930	1.86
33146-45-1	PCB-10	U	.93	.93	pg/g	0.930	3.72
2050-67-1	PCB-11	BU	2.27	1.86	pg/g	1.86	46.5
PCB-12/13	PCB-13/12	CU	.93	.93	pg/g	0.930	7.44
34883-41-5	PCB-14	U	.93	.93	pg/g	0.930	3.72
2050-68-2	PCB-15	U	.93	.93	pg/g	0.930	18.6
38444-78-9	PCB-16	U	.93	.93	pg/g	0.930	3.72
37680-66-3	PCB-17	U	.619	.619	pg/g	0.619	3.72
PCB-18/30	PCB-18/30	CU	1.24	1.24	pg/g	1.24	3.72
38444-73-4	PCB-19	U	.619	.619	pg/g	0.619	1.86
PCB-20/28	PCB-20/28	CU	1.24	1.24	pg/g	1.24	18.6
PCB-21/33	PCB-21/33	CU	1.24	1.24	pg/g	1.24	7.44
38444-85-8	PCB-22	U	.619	.619	pg/g	0.619	3.72
55720-44-0	PCB-23	U	.619	.619	pg/g	0.619	1.86
55702-45-9	PCB-24	U	.619	.619	pg/g	0.619	1.86
55712-37-3	PCB-25	U	.619	.619	pg/g	0.619	1.86
PCB-26/29	PCB-26/29	CU	1.24	1.24	pg/g	1.24	3.72
38444-76-7	PCB-27	U	.619	.619	pg/g	0.619	1.86
16606-02-3	PCB-31	J	0.907	.761	pg/g	0.619	9.30
38444-77-8	PCB-32	U	.619	.619	pg/g	0.619	1.86
37680-68-5	PCB-34	U	.619	.619	pg/g	0.619	1.86
37680-69-6	PCB-35	U	.619	.619	pg/g	0.619	3.72
38444-87-0	PCB-36	U	.619	.619	pg/g	0.619	3.72
38444-90-5	PCB-37	U	0.861	.619	pg/g	0.619	18.6

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922001**	**Date Collected:**	**03/19/2014 14:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**8.2**
Client ID:	**CAWA-14-49275**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 19:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**11.72 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	J	0.859	.621	pg/g	0.619	1.86
38444-88-1	PCB-39	U	.619	.619	pg/g	0.619	3.72
PCB-40/71	PCB-40/71	CU	1.24	1.24	pg/g	1.24	3.72
52663-59-9	PCB-41	U	1.24	1.24	pg/g	1.24	1.86
36559-22-5	PCB-42	U	.93	.93	pg/g	0.930	1.86
70362-46-8	PCB-43	U	1.24	1.24	pg/g	1.24	3.72
PCB-44/47/65	PCB-44/65/47	CU	3.11	3.11	pg/g	3.11	5.58
PCB-45/51	PCB-45/51	CU	1.24	1.24	pg/g	1.24	3.72
41464-47-5	PCB-46	U	.619	.619	pg/g	0.619	1.86
70362-47-9	PCB-48	U	.619	.619	pg/g	0.619	1.86
PCB-49/69	PCB-69/49	CU	1.24	1.24	pg/g	1.24	3.72
PCB-50/53	PCB-50/53	CU	1.24	1.24	pg/g	1.24	3.72
35693-99-3	PCB-52	U	1.35	1.24	pg/g	1.24	1.86
15968-05-5	PCB-54	U	.619	.619	pg/g	0.619	1.86
74338-24-2	PCB-55	U	.93	.93	pg/g	0.930	1.86
41464-43-1	PCB-56	J	1.78	1.27	pg/g	0.619	3.72
70424-67-8	PCB-57	U	.93	.93	pg/g	0.930	1.86
41464-49-7	PCB-58	U	.93	.93	pg/g	0.930	1.86
PCB-59/62/75	PCB-59/62/75	CU	1.86	1.86	pg/g	1.86	5.58
33025-41-1	PCB-60	U	0.892	.619	pg/g	0.619	3.72
PCB-61-76	PCB-61/76/70/74	CJ	5.07	4.86	pg/g	2.47	7.44
74472-34-7	PCB-63	U	.619	.619	pg/g	0.619	4.65
52663-58-8	PCB-64	U	.93	.93	pg/g	0.930	1.86
32598-10-0	PCB-66	J	3.12	2.93	pg/g	0.930	4.65
73575-53-8	PCB-67	U	.93	.93	pg/g	0.930	1.86
73575-52-7	PCB-68	U	.619	.619	pg/g	0.619	1.86
41464-42-0	PCB-72	U	.619	.619	pg/g	0.619	3.72
74338-23-1	PCB-73	U	.93	.93	pg/g	0.930	1.86
32598-13-3	PCB-77	J	1.36	1.13	pg/g	0.619	1.86
70362-49-1	PCB-78	U	.619	.619	pg/g	0.619	1.86
41464-48-6	PCB-79	U	.619	.619	pg/g	0.619	3.72
33284-52-5	PCB-80	U	.619	.619	pg/g	0.619	3.72

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922001**	**Date Collected:**	**03/19/2014 14:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**8.2**
Client ID:	**CAWA-14-49275**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 19:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**11.72 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.619	.619	pg/g	0.619	1.86
52663-62-4	PCB-82	U	.93	.93	pg/g	0.930	4.65
60145-20-2	PCB-83	U	.93	.93	pg/g	0.930	1.86
52663-60-2	PCB-84	U	.93	.93	pg/g	0.930	1.86
PCB-85-117	PCB-117/116/85	CU	1.86	1.86	pg/g	1.86	5.58
PCB-86-125	PCB-86/87/97/109/119/125	CU	3.72	3.72	pg/g	3.72	11.2
PCB-88/91	PCB-88/91	CU	1.24	1.24	pg/g	1.24	3.72
73575-57-2	PCB-89	U	.619	.619	pg/g	0.619	1.86
PCB-90-113	PCB-113/90/101	CJ	3.85	3.55	pg/g	1.86	5.58
52663-61-3	PCB-92	U	.93	.93	pg/g	0.930	1.86
PCB-93/100	PCB-93/100	CU	1.86	1.86	pg/g	1.86	3.72
73575-55-0	PCB-94	U	.619	.619	pg/g	0.619	1.86
38379-99-6	PCB-95	J	2.39	2.07	pg/g	1.24	3.72
73575-54-9	PCB-96	U	.619	.619	pg/g	0.619	1.86
PCB-98/102	PCB-102/98	CU	1.24	1.24	pg/g	1.24	3.72
38380-01-7	PCB-99	J	2.10	1.49	pg/g	1.24	1.86
60145-21-3	PCB-103	U	.619	.619	pg/g	0.619	4.65
56558-16-8	PCB-104	U	.619	.619	pg/g	0.619	1.86
32598-14-4	PCB-105		2.95	2.33	pg/g	0.930	1.86
70424-69-0	PCB-106	U	.93	.93	pg/g	0.930	1.86
70424-68-9	PCB-107	U	.619	.619	pg/g	0.619	3.72
PCB-108/124	PCB-108/124	CU	1.24	1.24	pg/g	1.24	3.72
PCB-110/115	PCB-110/115	C	6.28	3.86	pg/g	2.47	3.72
39635-32-0	PCB-111	U	.619	.619	pg/g	0.619	1.86
74472-36-9	PCB-112	U	1.24	1.24	pg/g	1.24	1.86
74472-37-0	PCB-114	U	.619	.619	pg/g	0.619	1.86
31508-00-6	PCB-118	J	4.77	2.92	pg/g	1.24	3.72
68194-12-7	PCB-120	U	.619	.619	pg/g	0.619	1.86
56558-18-0	PCB-121	U	.619	.619	pg/g	0.619	1.86
76842-07-4	PCB-122	U	.619	.619	pg/g	0.619	6.43
65510-44-3	PCB-123	U	.619	.619	pg/g	0.619	1.86
57465-28-8	PCB-126	U	.619	.619	pg/g	0.619	1.86

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922001**	**Date Collected:**	**03/19/2014 14:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**8.2**
Client ID:	**CAWA-14-49275**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 19:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**11.72 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.619	.619	pg/g	0.619	1.86
PCB-128/166	PCB-128/166	CJ	1.85	1.54	pg/g	1.24	3.72
PCB-129-163	PCB-138/163/129	C	16.3	16	pg/g	2.47	5.58
52663-66-8	PCB-130	U	0.943	.93	pg/g	0.930	1.86
61798-70-7	PCB-131	U	.619	.619	pg/g	0.619	1.86
38380-05-1	PCB-132		3.57	2.39	pg/g	0.930	1.86
35694-04-3	PCB-133	U	.619	.619	pg/g	0.619	1.86
52704-70-8	PCB-134	U	1.24	1.24	pg/g	1.24	1.86
PCB-135/151	PCB-151/135	CJ	3.11	2.77	pg/g	1.24	3.72
38411-22-2	PCB-136	J	1.03	.811	pg/g	0.619	1.86
35694-06-5	PCB-137	U	1.24	1.24	pg/g	1.24	1.86
PCB-139/140	PCB-139/140	CU	1.24	1.24	pg/g	1.24	3.72
52712-04-6	PCB-141	J	1.85	1.52	pg/g	1.24	3.72
41411-61-4	PCB-142	U	.619	.619	pg/g	0.619	1.86
68194-15-0	PCB-143	U	1.24	1.24	pg/g	1.24	1.86
68194-14-9	PCB-144	U	.619	.619	pg/g	0.619	1.86
74472-40-5	PCB-145	U	.619	.619	pg/g	0.619	1.86
51908-16-8	PCB-146	J	2.13	1.61	pg/g	0.930	1.86
PCB-147/149	PCB-147/149	C	10.2	8.75	pg/g	1.86	7.44
74472-41-6	PCB-148	U	.619	.619	pg/g	0.619	1.86
68194-08-1	PCB-150	U	.93	.93	pg/g	0.930	1.86
68194-09-2	PCB-152	U	.619	.619	pg/g	0.619	1.86
PCB-153/168	PCB-153/168	C	13.2	12.9	pg/g	1.86	7.44
60145-22-4	PCB-154	U	.619	.619	pg/g	0.619	1.86
33979-03-2	PCB-155	U	.619	.619	pg/g	0.619	1.86
PCB-156/157	PCB-156/157	CU	1.32	1.24	pg/g	1.24	3.72
74472-42-7	PCB-158	J	1.09	.842	pg/g	0.619	1.86
39635-35-3	PCB-159	U	.619	.619	pg/g	0.619	1.86
41411-62-5	PCB-160	U	.619	.619	pg/g	0.619	1.86
74472-43-8	PCB-161	U	.93	.93	pg/g	0.930	1.86
39635-34-2	PCB-162	U	.93	.93	pg/g	0.930	1.86
74472-45-0	PCB-164	J	1.25	.987	pg/g	0.619	1.86

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922001**	**Date Collected:**	**03/19/2014 14:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**8.2**
Client ID:	**CAWA-14-49275**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 19:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**11.72 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.619	.619	pg/g	0.619	1.86
52663-72-6	PCB-167	U	0.710	.619	pg/g	0.619	1.86
32774-16-6	PCB-169	U	.93	.93	pg/g	0.930	1.86
35065-30-6	PCB-170		5.41	4.94	pg/g	0.619	1.86
PCB-171/173	PCB-173/171	CU	1.40	1.24	pg/g	1.24	3.72
52663-74-8	PCB-172	U	1.14	.93	pg/g	0.930	1.86
38411-25-5	PCB-174		5.61	5.32	pg/g	1.24	1.86
40186-70-7	PCB-175	U	.93	.93	pg/g	0.930	1.86
52663-65-7	PCB-176	U	.619	.619	pg/g	0.619	1.86
52663-70-4	PCB-177		3.57	3.27	pg/g	0.930	1.86
52663-67-9	PCB-178	U	1.24	1.24	pg/g	1.24	1.86
52663-64-6	PCB-179	J	1.80	1.61	pg/g	0.619	1.86
PCB-180/193	PCB-193/180	CU	1.86	1.86	pg/g	1.86	3.72
74472-47-2	PCB-181	U	.93	.93	pg/g	0.930	1.86
60145-23-5	PCB-182	U	.619	.619	pg/g	0.619	1.86
PCB-183/185	PCB-183/185	CJ	2.81	2.51	pg/g	1.24	3.72
74472-48-3	PCB-184	U	.619	.619	pg/g	0.619	1.86
74472-49-4	PCB-186	U	.619	.619	pg/g	0.619	1.86
52663-68-0	PCB-187		7.36	6.87	pg/g	0.930	1.86
74487-85-7	PCB-188	U	.619	.619	pg/g	0.619	1.86
39635-31-9	PCB-189	U	.619	.619	pg/g	0.619	1.86
41411-64-7	PCB-190	J	1.21	.982	pg/g	0.930	1.86
74472-50-7	PCB-191	U	.619	.619	pg/g	0.619	1.86
74472-51-8	PCB-192	U	.619	.619	pg/g	0.619	1.86
35694-08-7	PCB-194		3.56	3.23	pg/g	0.619	1.86
52663-78-2	PCB-195	J	1.44	1.16	pg/g	0.930	1.86
42740-50-1	PCB-196	J	1.50	1.2	pg/g	0.619	1.86
PCB-197/200	PCB-197/200	CU	1.24	1.24	pg/g	1.24	3.72
PCB-198/199	PCB-198/199	CJ	3.90	3.55	pg/g	1.24	3.72
40186-71-8	PCB-201	U	.619	.619	pg/g	0.619	1.86
2136-99-4	PCB-202	U	.93	.93	pg/g	0.930	1.86
52663-76-0	PCB-203		2.36	1.96	pg/g	1.24	1.86

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922001**	**Date Collected:**	**03/19/2014 14:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**8.2**
Client ID:	**CAWA-14-49275**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 19:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**11.72 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.93	.93	pg/g	0.930	1.86
74472-53-0	PCB-205	U	.619	.619	pg/g	0.619	1.86
40186-72-9	PCB-206		2.97	2.56	pg/g	0.930	1.86
52663-79-3	PCB-207	U	.619	.619	pg/g	0.619	1.86
52663-77-1	PCB-208	U	0.900	.619	pg/g	0.619	1.86
2051-24-3	PCB-209		2.53	2.18	pg/g	0.619	1.86
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs		2.63	1.38	pg/g		
26914-33-0	Total Tetra PCBs		13.6	10.2	pg/g		
25429-29-2	Total Penta PCBs		22.3	16.2	pg/g		
26601-64-9	Total Hexa PCBs		58.6	50.1	pg/g		
28655-71-2	Total Hepta PCBs		30.3	25.5	pg/g		
55722-26-4	Total Octa PCBs		12.8	11.1	pg/g		
53742-07-7	Total Nona PCBs		3.87	2.56	pg/g		
DECACB(Tot)	Total Deca PCB		2.53	2.18	pg/g		
1336-36-3	Total PCB Congeners		147	119	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		93.5	186	pg/g	50.3	(15%-150%)
13C-3-MoCB		102	186	pg/g	54.9	(15%-150%)
13C-4-DiCB		124	186	pg/g	66.5	(25%-150%)
13C-15-DiCB		144	186	pg/g	77.3	(25%-150%)
13C-19-TrCB		133	186	pg/g	71.7	(25%-150%)
13C-37-TrCB		152	186	pg/g	81.5	(25%-150%)
13C-54-TeCB		142	186	pg/g	76.5	(25%-150%)
13C-77-TeCB		191	186	pg/g	103	(25%-150%)
13C-81-TeCB		186	186	pg/g	100	(25%-150%)
13C-104-PeCB		164	186	pg/g	88.4	(25%-150%)
13C-105-PeCB		159	186	pg/g	85.6	(25%-150%)
13C-114-PeCB		156	186	pg/g	83.7	(25%-150%)
13C-118-PeCB		162	186	pg/g	87.2	(25%-150%)
13C-123-PeCB		167	186	pg/g	90.0	(25%-150%)
13C-126-PeCB		166	186	pg/g	89.4	(25%-150%)
13C-155-HxCB		149	186	pg/g	80.1	(25%-150%)
13C-156-HxCB	C	321	372	pg/g	86.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		151	186	pg/g	81.1	(25%-150%)
13C-169-HxCB		186	186	pg/g	100	(25%-150%)
13C-188-HpCB		104	186	pg/g	56.0	(25%-150%)
13C-189-HpCB		135	186	pg/g	72.4	(25%-150%)
13C-202-OcCB		105	186	pg/g	56.7	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922001**	**Date Collected:**	**03/19/2014 14:45**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**8.2**
Client ID:	**CAWA-14-49275**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 19:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**11.72 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		175	186	pg/g	93.9	(25%-150%)
13C-206-NoCB		160	186	pg/g	86.1	(25%-150%)
13C-208-NoCB		148	186	pg/g	79.6	(25%-150%)
13C-209-DeCB		176	186	pg/g	94.4	(25%-150%)
13C-28-TrCB		154	186	pg/g	82.7	(30%-135%)
13C-111-PeCB		176	186	pg/g	94.7	(30%-135%)
13C-178-HpCB		154	186	pg/g	82.8	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922002**	**Date Collected:**	**03/19/2014 15:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**4.3**
Client ID:	**CAWA-14-49276**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 20:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.975	.975	pg/g	0.975	4.88
2051-61-8	PCB-2	U	.975	.975	pg/g	0.975	1.95
2051-62-9	PCB-3	U	.975	.975	pg/g	0.975	1.95
13029-08-8	PCB-4	U	.975	.975	pg/g	0.975	3.90
16605-91-7	PCB-5	U	.975	.975	pg/g	0.975	3.90
25569-80-6	PCB-6	U	.975	.975	pg/g	0.975	1.95
33284-50-3	PCB-7	U	.975	.975	pg/g	0.975	3.90
34883-43-7	PCB-8	U	.975	.975	pg/g	0.975	19.5
34883-39-1	PCB-9	U	.975	.975	pg/g	0.975	1.95
33146-45-1	PCB-10	U	.975	.975	pg/g	0.975	3.90
2050-67-1	PCB-11	BU	2.16	1.95	pg/g	1.95	48.8
PCB-12/13	PCB-13/12	CU	.975	.975	pg/g	0.975	7.80
34883-41-5	PCB-14	U	.975	.975	pg/g	0.975	3.90
2050-68-2	PCB-15	U	.975	.975	pg/g	0.975	19.5
38444-78-9	PCB-16	U	.975	.975	pg/g	0.975	3.90
37680-66-3	PCB-17	U	.65	.65	pg/g	0.650	3.90
PCB-18/30	PCB-18/30	CU	1.3	1.3	pg/g	1.30	3.90
38444-73-4	PCB-19	U	.65	.65	pg/g	0.650	1.95
PCB-20/28	PCB-20/28	CU	1.3	1.3	pg/g	1.30	19.5
PCB-21/33	PCB-21/33	CU	1.3	1.3	pg/g	1.30	7.80
38444-85-8	PCB-22	U	.65	.65	pg/g	0.650	3.90
55720-44-0	PCB-23	U	.65	.65	pg/g	0.650	1.95
55702-45-9	PCB-24	U	.65	.65	pg/g	0.650	1.95
55712-37-3	PCB-25	U	.65	.65	pg/g	0.650	1.95
PCB-26/29	PCB-26/29	CU	1.3	1.3	pg/g	1.30	3.90
38444-76-7	PCB-27	U	.65	.65	pg/g	0.650	1.95
16606-02-3	PCB-31	U	.65	.65	pg/g	0.650	9.75
38444-77-8	PCB-32	U	.65	.65	pg/g	0.650	1.95
37680-68-5	PCB-34	U	.65	.65	pg/g	0.650	1.95
37680-69-6	PCB-35	U	.65	.65	pg/g	0.650	3.90
38444-87-0	PCB-36	U	.65	.65	pg/g	0.650	3.90
38444-90-5	PCB-37	U	.65	.65	pg/g	0.650	19.5

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922002**	**Date Collected:**	**03/19/2014 15:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**4.3**
Client ID:	**CAWA-14-49276**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 20:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.65	.65	pg/g	0.650	1.95
38444-88-1	PCB-39	U	.65	.65	pg/g	0.650	3.90
PCB-40/71	PCB-40/71	CU	1.3	1.3	pg/g	1.30	3.90
52663-59-9	PCB-41	U	1.3	1.3	pg/g	1.30	1.95
36559-22-5	PCB-42	U	.975	.975	pg/g	0.975	1.95
70362-46-8	PCB-43	U	1.3	1.3	pg/g	1.30	3.90
PCB-44/47/65	PCB-44/65/47	CU	3.26	3.26	pg/g	3.26	5.85
PCB-45/51	PCB-45/51	CU	1.3	1.3	pg/g	1.30	3.90
41464-47-5	PCB-46	U	.65	.65	pg/g	0.650	1.95
70362-47-9	PCB-48	U	.65	.65	pg/g	0.650	1.95
PCB-49/69	PCB-69/49	CU	1.3	1.3	pg/g	1.30	3.90
PCB-50/53	PCB-50/53	CU	1.3	1.3	pg/g	1.30	3.90
35693-99-3	PCB-52	U	1.49	1.3	pg/g	1.30	1.95
15968-05-5	PCB-54	U	.65	.65	pg/g	0.650	1.95
74338-24-2	PCB-55	U	.975	.975	pg/g	0.975	1.95
41464-43-1	PCB-56	U	.65	.65	pg/g	0.650	3.90
70424-67-8	PCB-57	U	.975	.975	pg/g	0.975	1.95
41464-49-7	PCB-58	U	.975	.975	pg/g	0.975	1.95
PCB-59/62/75	PCB-59/62/75	CU	1.95	1.95	pg/g	1.95	5.85
33025-41-1	PCB-60	U	.65	.65	pg/g	0.650	3.90
PCB-61-76	PCB-61/76/70/74	CU	2.59	2.59	pg/g	2.59	7.80
74472-34-7	PCB-63	U	.65	.65	pg/g	0.650	4.88
52663-58-8	PCB-64	U	.975	.975	pg/g	0.975	1.95
32598-10-0	PCB-66	U	.975	.975	pg/g	0.975	4.88
73575-53-8	PCB-67	U	.975	.975	pg/g	0.975	1.95
73575-52-7	PCB-68	U	.65	.65	pg/g	0.650	1.95
41464-42-0	PCB-72	U	.65	.65	pg/g	0.650	3.90
74338-23-1	PCB-73	U	.975	.975	pg/g	0.975	1.95
32598-13-3	PCB-77	U	.65	.65	pg/g	0.650	1.95
70362-49-1	PCB-78	U	.65	.65	pg/g	0.650	1.95
41464-48-6	PCB-79	U	.65	.65	pg/g	0.650	3.90
33284-52-5	PCB-80	U	.65	.65	pg/g	0.650	3.90

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922002**	**Date Collected:**	**03/19/2014 15:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**4.3**
Client ID:	**CAWA-14-49276**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 20:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.65	.65	pg/g	0.650	1.95
52663-62-4	PCB-82	U	.975	.975	pg/g	0.975	4.88
60145-20-2	PCB-83	U	.975	.975	pg/g	0.975	1.95
52663-60-2	PCB-84	U	1.04	.975	pg/g	0.975	1.95
PCB-85-117	PCB-117/116/85	CU	1.95	1.95	pg/g	1.95	5.85
PCB-86-125	PCB-86/87/97/109/119/125	CU	3.9	3.9	pg/g	3.90	11.7
PCB-88/91	PCB-88/91	CU	1.3	1.3	pg/g	1.30	3.90
73575-57-2	PCB-89	U	.65	.65	pg/g	0.650	1.95
PCB-90-113	PCB-113/90/101	CJ	5.61	5.3	pg/g	1.95	5.85
52663-61-3	PCB-92	U	0.999	.975	pg/g	0.975	1.95
PCB-93/100	PCB-93/100	CU	1.95	1.95	pg/g	1.95	3.90
73575-55-0	PCB-94	U	.65	.65	pg/g	0.650	1.95
38379-99-6	PCB-95	J	3.77	3.45	pg/g	1.30	3.90
73575-54-9	PCB-96	U	.65	.65	pg/g	0.650	1.95
PCB-98/102	PCB-102/98	CU	1.3	1.3	pg/g	1.30	3.90
38380-01-7	PCB-99	J	2.34	1.73	pg/g	1.30	1.95
60145-21-3	PCB-103	U	.65	.65	pg/g	0.650	4.88
56558-16-8	PCB-104	U	.65	.65	pg/g	0.650	1.95
32598-14-4	PCB-105	U	1.48	.975	pg/g	0.975	1.95
70424-69-0	PCB-106	U	.975	.975	pg/g	0.975	1.95
70424-68-9	PCB-107	U	.65	.65	pg/g	0.650	3.90
PCB-108/124	PCB-108/124	CU	1.3	1.3	pg/g	1.30	3.90
PCB-110/115	PCB-110/115	C	7.34	4.92	pg/g	2.59	3.90
39635-32-0	PCB-111	U	.65	.65	pg/g	0.650	1.95
74472-36-9	PCB-112	U	1.3	1.3	pg/g	1.30	1.95
74472-37-0	PCB-114	U	.65	.65	pg/g	0.650	1.95
31508-00-6	PCB-118	J	3.77	1.93	pg/g	1.30	3.90
68194-12-7	PCB-120	U	.65	.65	pg/g	0.650	1.95
56558-18-0	PCB-121	U	.65	.65	pg/g	0.650	1.95
76842-07-4	PCB-122	U	.65	.65	pg/g	0.650	6.75
65510-44-3	PCB-123	U	.65	.65	pg/g	0.650	1.95
57465-28-8	PCB-126	U	.65	.65	pg/g	0.650	1.95

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922002**	**Date Collected:**	**03/19/2014 15:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**4.3**
Client ID:	**CAWA-14-49276**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 20:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.65	.65	pg/g	0.650	1.95
PCB-128/166	PCB-128/166	CJ	1.89	1.58	pg/g	1.30	3.90
PCB-129-163	PCB-138/163/129	C	18.1	17.8	pg/g	2.59	5.85
52663-66-8	PCB-130	U	.975	.975	pg/g	0.975	1.95
61798-70-7	PCB-131	U	.65	.65	pg/g	0.650	1.95
38380-05-1	PCB-132		4.37	3.18	pg/g	0.975	1.95
35694-04-3	PCB-133	U	.65	.65	pg/g	0.650	1.95
52704-70-8	PCB-134	U	1.3	1.3	pg/g	1.30	1.95
PCB-135/151	PCB-151/135	C	4.27	3.93	pg/g	1.30	3.90
38411-22-2	PCB-136	J	1.32	1.1	pg/g	0.650	1.95
35694-06-5	PCB-137	U	1.3	1.3	pg/g	1.30	1.95
PCB-139/140	PCB-139/140	CU	1.3	1.3	pg/g	1.30	3.90
52712-04-6	PCB-141	J	2.61	2.27	pg/g	1.30	3.90
41411-61-4	PCB-142	U	.65	.65	pg/g	0.650	1.95
68194-15-0	PCB-143	U	1.3	1.3	pg/g	1.30	1.95
68194-14-9	PCB-144	U	.65	.65	pg/g	0.650	1.95
74472-40-5	PCB-145	U	.65	.65	pg/g	0.650	1.95
51908-16-8	PCB-146	J	2.19	1.67	pg/g	0.975	1.95
PCB-147/149	PCB-147/149	C	11.9	10.4	pg/g	1.95	7.80
74472-41-6	PCB-148	U	.65	.65	pg/g	0.650	1.95
68194-08-1	PCB-150	U	.975	.975	pg/g	0.975	1.95
68194-09-2	PCB-152	U	.65	.65	pg/g	0.650	1.95
PCB-153/168	PCB-153/168	C	14.5	14.2	pg/g	1.95	7.80
60145-22-4	PCB-154	U	.65	.65	pg/g	0.650	1.95
33979-03-2	PCB-155	U	.65	.65	pg/g	0.650	1.95
PCB-156/157	PCB-156/157	CU	1.41	1.3	pg/g	1.30	3.90
74472-42-7	PCB-158	J	1.34	1.09	pg/g	0.650	1.95
39635-35-3	PCB-159	U	.65	.65	pg/g	0.650	1.95
41411-62-5	PCB-160	U	.65	.65	pg/g	0.650	1.95
74472-43-8	PCB-161	U	.975	.975	pg/g	0.975	1.95
39635-34-2	PCB-162	U	.975	.975	pg/g	0.975	1.95
74472-45-0	PCB-164	J	1.24	.978	pg/g	0.650	1.95

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922002**	**Date Collected:**	**03/19/2014 15:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**4.3**
Client ID:	**CAWA-14-49276**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 20:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.65	.65	pg/g	0.650	1.95
52663-72-6	PCB-167	U	0.693	.65	pg/g	0.650	1.95
32774-16-6	PCB-169	U	.975	.975	pg/g	0.975	1.95
35065-30-6	PCB-170		6.33	5.86	pg/g	0.650	1.95
PCB-171/173	PCB-173/171	CU	1.57	1.3	pg/g	1.30	3.90
52663-74-8	PCB-172	U	1.11	.975	pg/g	0.975	1.95
38411-25-5	PCB-174		6.56	6.26	pg/g	1.30	1.95
40186-70-7	PCB-175	U	.975	.975	pg/g	0.975	1.95
52663-65-7	PCB-176	U	.65	.65	pg/g	0.650	1.95
52663-70-4	PCB-177		3.91	3.61	pg/g	0.975	1.95
52663-67-9	PCB-178	U	1.41	1.3	pg/g	1.30	1.95
52663-64-6	PCB-179		2.15	1.96	pg/g	0.650	1.95
PCB-180/193	PCB-193/180	CU	1.95	1.95	pg/g	1.95	3.90
74472-47-2	PCB-181	U	.975	.975	pg/g	0.975	1.95
60145-23-5	PCB-182	U	.65	.65	pg/g	0.650	1.95
PCB-183/185	PCB-183/185	CJ	3.49	3.19	pg/g	1.30	3.90
74472-48-3	PCB-184	U	.65	.65	pg/g	0.650	1.95
74472-49-4	PCB-186	U	.65	.65	pg/g	0.650	1.95
52663-68-0	PCB-187		8.18	7.68	pg/g	0.975	1.95
74487-85-7	PCB-188	U	.65	.65	pg/g	0.650	1.95
39635-31-9	PCB-189	U	.65	.65	pg/g	0.650	1.95
41411-64-7	PCB-190	J	1.39	1.16	pg/g	0.975	1.95
74472-50-7	PCB-191	U	.65	.65	pg/g	0.650	1.95
74472-51-8	PCB-192	U	.65	.65	pg/g	0.650	1.95
35694-08-7	PCB-194		3.31	2.98	pg/g	0.650	1.95
52663-78-2	PCB-195	J	1.36	1.08	pg/g	0.975	1.95
42740-50-1	PCB-196	J	1.43	1.14	pg/g	0.650	1.95
PCB-197/200	PCB-197/200	CU	1.3	1.3	pg/g	1.30	3.90
PCB-198/199	PCB-198/199	CJ	3.51	3.16	pg/g	1.30	3.90
40186-71-8	PCB-201	U	.65	.65	pg/g	0.650	1.95
2136-99-4	PCB-202	U	.975	.975	pg/g	0.975	1.95
52663-76-0	PCB-203	J	2.17	1.78	pg/g	1.30	1.95

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922002**	**Date Collected:**	**03/19/2014 15:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**4.3**
Client ID:	**CAWA-14-49276**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 20:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.975	.975	pg/g	0.975	1.95
74472-53-0	PCB-205	U	.65	.65	pg/g	0.650	1.95
40186-72-9	PCB-206	U	1.04	.975	pg/g	0.975	1.95
52663-79-3	PCB-207	U	.65	.65	pg/g	0.650	1.95
52663-77-1	PCB-208	U	.65	.65	pg/g	0.650	1.95
2051-24-3	PCB-209	U	0.675	.65	pg/g	0.650	1.95
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	1.49	0	pg/g		
25429-29-2	Total Penta PCBs		26.4	17.3	pg/g		
26601-64-9	Total Hexa PCBs		65.9	58.3	pg/g		
28655-71-2	Total Hepta PCBs		36.1	29.7	pg/g		
55722-26-4	Total Octa PCBs		11.8	10.1	pg/g		
53742-07-7	Total Nona PCBs	U	1.04	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0.675	0	pg/g		
1336-36-3	Total PCB Congeners		143	115	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		97.9	195	pg/g	50.2	(15%-150%)
13C-3-MoCB		103	195	pg/g	53.0	(15%-150%)
13C-4-DiCB		128	195	pg/g	65.7	(25%-150%)
13C-15-DiCB		159	195	pg/g	81.5	(25%-150%)
13C-19-TrCB		146	195	pg/g	75.0	(25%-150%)
13C-37-TrCB		157	195	pg/g	80.2	(25%-150%)
13C-54-TeCB		137	195	pg/g	70.1	(25%-150%)
13C-77-TeCB		204	195	pg/g	105	(25%-150%)
13C-81-TeCB		198	195	pg/g	101	(25%-150%)
13C-104-PeCB		167	195	pg/g	85.7	(25%-150%)
13C-105-PeCB		168	195	pg/g	86.4	(25%-150%)
13C-114-PeCB		162	195	pg/g	82.8	(25%-150%)
13C-118-PeCB		170	195	pg/g	87.0	(25%-150%)
13C-123-PeCB		174	195	pg/g	89.2	(25%-150%)
13C-126-PeCB		182	195	pg/g	93.5	(25%-150%)
13C-155-HxCB		152	195	pg/g	78.2	(25%-150%)
13C-156-HxCB	C	332	390	pg/g	85.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		159	195	pg/g	81.3	(25%-150%)
13C-169-HxCB		204	195	pg/g	104	(25%-150%)
13C-188-HpCB		96.8	195	pg/g	49.6	(25%-150%)
13C-189-HpCB		138	195	pg/g	70.5	(25%-150%)
13C-202-OcCB		105	195	pg/g	53.6	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5922002**	**Date Collected:**	**03/19/2014 15:05**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**03/21/2014 09:30**	**%Moisture:**	**4.3**
Client ID:	**CAWA-14-49276**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/26/2014 20:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b_3-5**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10.71 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		178	195	pg/g	91.2	(25%-150%)
13C-206-NoCB		161	195	pg/g	82.6	(25%-150%)
13C-208-NoCB		148	195	pg/g	75.8	(25%-150%)
13C-209-DeCB		171	195	pg/g	87.9	(25%-150%)
13C-28-TrCB		154	195	pg/g	79.0	(30%-135%)
13C-111-PeCB		181	195	pg/g	92.8	(30%-135%)
13C-178-HpCB		163	195	pg/g	83.4	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: 2014-3037

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010062	LCS for batch 25525	13C-1-MoCB		38.3	(15%-140%)
		13C-3-MoCB		43.0	(15%-140%)
		13C-4-DiCB		47.3	(30%-140%)
		13C-15-DiCB		54.6	(30%-140%)
		13C-19-TrCB		52.8	(30%-140%)
		13C-37-TrCB		66.0	(30%-140%)
		13C-54-TeCB		66.8	(30%-140%)
		13C-77-TeCB		71.3	(30%-140%)
		13C-81-TeCB		71.9	(30%-140%)
		13C-104-PeCB		73.3	(30%-140%)
		13C-105-PeCB		64.4	(30%-140%)
		13C-114-PeCB		61.8	(30%-140%)
		13C-118-PeCB		66.0	(30%-140%)
		13C-123-PeCB		68.4	(30%-140%)
		13C-126-PeCB		66.2	(30%-140%)
		13C-155-HxCB		72.0	(30%-140%)
		13C-156-HxCB	C	61.7	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		58.8	(30%-140%)
		13C-169-HxCB		71.0	(30%-140%)
		13C-188-HpCB		53.9	(30%-140%)
		13C-189-HpCB		57.2	(30%-140%)
		13C-202-OcCB		53.7	(30%-140%)
		13C-205-OcCB		73.5	(30%-140%)
		13C-206-NoCB		70.7	(30%-140%)
		13C-208-NoCB		66.9	(30%-140%)
		13C-209-DeCB		81.1	(30%-140%)
		13C-28-TrCB		67.9	(40%-125%)
		13C-111-PeCB		72.9	(40%-125%)
		13C-178-HpCB		74.5	(40%-125%)
12010063	LCSD for batch 25525	13C-1-MoCB		46.9	(15%-140%)
		13C-3-MoCB		53.7	(15%-140%)
		13C-4-DiCB		61.7	(30%-140%)
		13C-15-DiCB		68.8	(30%-140%)
		13C-19-TrCB		69.9	(30%-140%)
		13C-37-TrCB		78.2	(30%-140%)
		13C-54-TeCB		87.3	(30%-140%)
		13C-77-TeCB		81.4	(30%-140%)
		13C-81-TeCB		81.9	(30%-140%)
		13C-104-PeCB		93.2	(30%-140%)
		13C-105-PeCB		76.2	(30%-140%)
		13C-114-PeCB		73.4	(30%-140%)
		13C-118-PeCB		78.5	(30%-140%)
		13C-123-PeCB		81.6	(30%-140%)
		13C-126-PeCB		80.0	(30%-140%)
		13C-155-HxCB		88.9	(30%-140%)
		13C-156-HxCB	C	77.2	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		73.9	(30%-140%)
		13C-169-HxCB		90.0	(30%-140%)
		13C-188-HpCB		63.6	(30%-140%)
		13C-189-HpCB		71.5	(30%-140%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3037

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010063	LCSD for batch 25525	13C-202-OcCB		66.3	(30%-140%)
		13C-205-OcCB		89.2	(30%-140%)
		13C-206-NoCB		85.1	(30%-140%)
		13C-208-NoCB		81.0	(30%-140%)
		13C-209-DeCB		99.3	(30%-140%)
		13C-28-TrCB		84.9	(40%-125%)
		13C-111-PeCB		87.1	(40%-125%)
		13C-178-HpCB		92.3	(40%-125%)
12010061	MB for batch 25525	13C-1-MoCB		53.9	(15%-150%)
		13C-3-MoCB		57.8	(15%-150%)
		13C-4-DiCB		67.3	(25%-150%)
		13C-15-DiCB		68.2	(25%-150%)
		13C-19-TrCB		70.1	(25%-150%)
		13C-37-TrCB		75.3	(25%-150%)
		13C-54-TeCB		83.5	(25%-150%)
		13C-77-TeCB		79.1	(25%-150%)
		13C-81-TeCB		79.8	(25%-150%)
		13C-104-PeCB		85.4	(25%-150%)
		13C-105-PeCB		70.4	(25%-150%)
		13C-114-PeCB		68.4	(25%-150%)
		13C-118-PeCB		73.3	(25%-150%)
		13C-123-PeCB		75.0	(25%-150%)
		13C-126-PeCB		74.0	(25%-150%)
		13C-155-HxCB		83.9	(25%-150%)
		13C-156-HxCB	C	72.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		68.9	(25%-150%)
		13C-169-HxCB		84.7	(25%-150%)
		13C-188-HpCB		58.7	(25%-150%)
		13C-189-HpCB		63.4	(25%-150%)
		13C-202-OcCB		60.0	(25%-150%)
		13C-205-OcCB		82.9	(25%-150%)
		13C-206-NoCB		79.9	(25%-150%)
		13C-208-NoCB		74.4	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		80.6	(30%-135%)
		13C-111-PeCB		82.9	(30%-135%)
		13C-178-HpCB		86.7	(30%-135%)
5922001	CAWA-14-49275	13C-1-MoCB		50.3	(15%-150%)
		13C-3-MoCB		54.9	(15%-150%)
		13C-4-DiCB		66.5	(25%-150%)
		13C-15-DiCB		77.3	(25%-150%)
		13C-19-TrCB		71.7	(25%-150%)
		13C-37-TrCB		81.5	(25%-150%)
		13C-54-TeCB		76.5	(25%-150%)
		13C-77-TeCB		103	(25%-150%)
		13C-81-TeCB		100	(25%-150%)
		13C-104-PeCB		88.4	(25%-150%)
		13C-105-PeCB		85.6	(25%-150%)
		13C-114-PeCB		83.7	(25%-150%)
		13C-118-PeCB		87.2	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3037

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5922001	CAWA-14-49275	13C-123-PeCB		90.0	(25%-150%)
		13C-126-PeCB		89.4	(25%-150%)
		13C-155-HxCB		80.1	(25%-150%)
		13C-156-HxCB	C	86.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		81.1	(25%-150%)
		13C-169-HxCB		100	(25%-150%)
		13C-188-HpCB		56.0	(25%-150%)
		13C-189-HpCB		72.4	(25%-150%)
		13C-202-OcCB		56.7	(25%-150%)
		13C-205-OcCB		93.9	(25%-150%)
		13C-206-NoCB		86.1	(25%-150%)
		13C-208-NoCB		79.6	(25%-150%)
		13C-209-DeCB		94.4	(25%-150%)
		13C-28-TrCB		82.7	(30%-135%)
		13C-111-PeCB		94.7	(30%-135%)
		13C-178-HpCB		82.8	(30%-135%)
5922002	CAWA-14-49276	13C-1-MoCB		50.2	(15%-150%)
		13C-3-MoCB		53.0	(15%-150%)
		13C-4-DiCB		65.7	(25%-150%)
		13C-15-DiCB		81.5	(25%-150%)
		13C-19-TrCB		75.0	(25%-150%)
		13C-37-TrCB		80.2	(25%-150%)
		13C-54-TeCB		70.1	(25%-150%)
		13C-77-TeCB		105	(25%-150%)
		13C-81-TeCB		101	(25%-150%)
		13C-104-PeCB		85.7	(25%-150%)
		13C-105-PeCB		86.4	(25%-150%)
		13C-114-PeCB		82.8	(25%-150%)
		13C-118-PeCB		87.0	(25%-150%)
		13C-123-PeCB		89.2	(25%-150%)
		13C-126-PeCB		93.5	(25%-150%)
		13C-155-HxCB		78.2	(25%-150%)
		13C-156-HxCB	C	85.0	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		81.3	(25%-150%)
		13C-169-HxCB		104	(25%-150%)
		13C-188-HpCB		49.6	(25%-150%)
		13C-189-HpCB		70.5	(25%-150%)
		13C-202-OcCB		53.6	(25%-150%)
		13C-205-OcCB		91.2	(25%-150%)
		13C-206-NoCB		82.6	(25%-150%)
		13C-208-NoCB		75.8	(25%-150%)
		13C-209-DeCB		87.9	(25%-150%)
		13C-28-TrCB		79.0	(30%-135%)
		13C-111-PeCB		92.8	(30%-135%)
		13C-178-HpCB		83.4	(30%-135%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3037**
Client ID: **LCS for batch 25525**
Lab Sample ID: **12010062**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample**
Matrix: **SOLID**
Analysis Date: **03/25/2014 17:45**
Dilution: **1**
Prep Batch ID: **25525**
Batch ID: **25527**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS	PCB-1	50.0		42.0	84	50-150
2051-62-9	LCS	PCB-3	50.0		43.6	87.3	50-150
13029-08-8	LCS	PCB-4	50.0		39.9	79.8	50-150
2050-68-2	LCS	PCB-15	50.0		46.3	92.5	50-150
38444-73-4	LCS	PCB-19	50.0		43.8	87.6	50-150
38444-90-5	LCS	PCB-37	50.0		43.3	86.7	50-150
15968-05-5	LCS	PCB-54	100		86.8	86.8	50-150
32598-13-3	LCS	PCB-77	100		79.6	79.6	50-150
70362-50-4	LCS	PCB-81	100		90.1	90.1	50-150
56558-16-8	LCS	PCB-104	100		91.9	91.9	50-150
32598-14-4	LCS	PCB-105	100		99.5	99.5	50-150
74472-37-0	LCS	PCB-114	100		97.9	97.9	50-150
31508-00-6	LCS	PCB-118	100		83.5	83.5	50-150
65510-44-3	LCS	PCB-123	100		79.7	79.7	50-150
57465-28-8	LCS	PCB-126	100		94.6	94.6	50-150
33979-03-2	LCS	PCB-155	100		92.0	92	50-150
38380-08-4	LCS	PCB-156/157	200	C	209	104	50-150
52663-72-6	LCS	PCB-167	100		111	111	50-150
32774-16-6	LCS	PCB-169	100		94.2	94.2	50-150
74487-85-7	LCS	PCB-188	100		94.2	94.2	50-150
39635-31-9	LCS	PCB-189	100		96.9	96.9	50-150
2136-99-4	LCS	PCB-202	150		140	93.6	50-150
74472-53-0	LCS	PCB-205	150		138	91.7	50-150
40186-72-9	LCS	PCB-206	150		134	89.2	50-150
52663-77-1	LCS	PCB-208	150		145	96.7	50-150
2051-24-3	LCS	PCB-209	150		131	87.5	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 2014-3037
Client ID: LCSD for batch 25525
Lab Sample ID: 12010063
Instrument: HRP791
Analyst: MJC

Sample Type: Laboratory Control Sample Duplicate
Matrix: SOLID
Analysis Date: 03/25/2014 18:53
Dilution: 1
Prep Batch ID: 25525
Batch ID: 25527

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	PCB-1	50.0		41.4	82.9	50-150	1.36	0-20
2051-62-9	LCSD	PCB-3	50.0		44.2	88.5	50-150	1.32	0-20
13029-08-8	LCSD	PCB-4	50.0		38.9	77.7	50-150	2.59	0-20
2050-68-2	LCSD	PCB-15	50.0		45.9	91.9	50-150	0.699	0-20
38444-73-4	LCSD	PCB-19	50.0		44.2	88.5	50-150	0.945	0-20
38444-90-5	LCSD	PCB-37	50.0		43.5	87	50-150	0.368	0-20
15968-05-5	LCSD	PCB-54	100		85.0	85	50-150	2.05	0-20
32598-13-3	LCSD	PCB-77	100		80.8	80.8	50-150	1.56	0-20
70362-50-4	LCSD	PCB-81	100		89.7	89.7	50-150	0.385	0-20
56558-16-8	LCSD	PCB-104	100		91.5	91.5	50-150	0.436	0-20
32598-14-4	LCSD	PCB-105	100		99.8	99.8	50-150	0.347	0-20
74472-37-0	LCSD	PCB-114	100		98.1	98.1	50-150	0.188	0-20
31508-00-6	LCSD	PCB-118	100		83.2	83.2	50-150	0.365	0-20
65510-44-3	LCSD	PCB-123	100		79.7	79.7	50-150	0.0477	0-20
57465-28-8	LCSD	PCB-126	100		93.4	93.4	50-150	1.19	0-20
33979-03-2	LCSD	PCB-155	100		92.1	92.1	50-150	0.0652	0-20
38380-08-4	LCSD	PCB-156/157	200	C	210	105	50-150	0.496	0-20
52663-72-6	LCSD	PCB-167	100		113	113	50-150	1.88	0-20
32774-16-6	LCSD	PCB-169	100		95.3	95.3	50-150	1.14	0-20
74487-85-7	LCSD	PCB-188	100		94.8	94.8	50-150	0.597	0-20
39635-31-9	LCSD	PCB-189	100		97.1	97.1	50-150	0.278	0-20
2136-99-4	LCSD	PCB-202	150		141	94.3	50-150	0.680	0-20
74472-53-0	LCSD	PCB-205	150		137	91.7	50-150	0.096	0-20
40186-72-9	LCSD	PCB-206	150		135	89.9	50-150	0.817	0-20
52663-77-1	LCSD	PCB-208	150		147	98.1	50-150	1.41	0-20
2051-24-3	LCSD	PCB-209	150		131	87.3	50-150	0.204	0-20

Method Blank Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Matrix:**	**SOLID**
Client ID:	**MB for batch 25525**	**Instrument ID:**	**HRP791**	**Data File:**	**c25mar14b-4**
Lab Sample ID:	**12010061**	**Prep Date:**	**24-MAR-14**	**Analyzed:**	**03/25/14 20:01**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 25525	12010062	c25mar14b-2	03/25/14	1745
02	LCSD for batch 25525	12010063	c25mar14b-3	03/25/14	1853
03	CAWA-14-49275	5922001	c25mar14b_3-4	03/26/14	1901
04	CAWA-14-49276	5922002	c25mar14b_3-5	03/26/14	2009

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	1	1	pg/g	1.00	5.00
2051-61-8	PCB-2	U	1	1	pg/g	1.00	2.00
2051-62-9	PCB-3	U	1	1	pg/g	1.00	2.00
13029-08-8	PCB-4	U	1	1	pg/g	1.00	4.00
16605-91-7	PCB-5	U	1	1	pg/g	1.00	4.00
25569-80-6	PCB-6	U	1	1	pg/g	1.00	2.00
33284-50-3	PCB-7	U	1	1	pg/g	1.00	4.00
34883-43-7	PCB-8	U	1	1	pg/g	1.00	20.0
34883-39-1	PCB-9	U	1	1	pg/g	1.00	2.00
33146-45-1	PCB-10	U	1	1	pg/g	1.00	4.00
2050-67-1	PCB-11	U	2.43	2	pg/g	2.00	50.0
PCB-12/13	PCB-13/12	CU	1	1	pg/g	1.00	8.00
34883-41-5	PCB-14	U	1	1	pg/g	1.00	4.00
2050-68-2	PCB-15	U	1	1	pg/g	1.00	20.0
38444-78-9	PCB-16	U	1	1	pg/g	1.00	4.00
37680-66-3	PCB-17	U	.666	.666	pg/g	0.666	4.00
PCB-18/30	PCB-18/30	CU	1.33	1.33	pg/g	1.33	4.00
38444-73-4	PCB-19	U	.666	.666	pg/g	0.666	2.00
PCB-20/28	PCB-20/28	CU	1.33	1.33	pg/g	1.33	20.0
PCB-21/33	PCB-21/33	CU	1.33	1.33	pg/g	1.33	8.00
38444-85-8	PCB-22	U	.666	.666	pg/g	0.666	4.00
55720-44-0	PCB-23	U	.666	.666	pg/g	0.666	2.00
55702-45-9	PCB-24	U	.666	.666	pg/g	0.666	2.00
55712-37-3	PCB-25	U	.666	.666	pg/g	0.666	2.00
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	4.00
38444-76-7	PCB-27	U	.666	.666	pg/g	0.666	2.00
16606-02-3	PCB-31	U	.666	.666	pg/g	0.666	10.0
38444-77-8	PCB-32	U	.666	.666	pg/g	0.666	2.00
37680-68-5	PCB-34	U	.666	.666	pg/g	0.666	2.00
37680-69-6	PCB-35	U	.666	.666	pg/g	0.666	4.00
38444-87-0	PCB-36	U	.666	.666	pg/g	0.666	4.00
38444-90-5	PCB-37	U	.666	.666	pg/g	0.666	20.0

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.666	.666	pg/g	0.666	2.00
38444-88-1	PCB-39	U	.666	.666	pg/g	0.666	4.00
PCB-40/71	PCB-40/71	CU	1.33	1.33	pg/g	1.33	4.00
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	2.00
36559-22-5	PCB-42	U	1	1	pg/g	1.00	2.00
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	4.00
PCB-44/47/65	PCB-44/65/47	CU	3.34	3.34	pg/g	3.34	6.00
PCB-45/51	PCB-45/51	CU	1.33	1.33	pg/g	1.33	4.00
41464-47-5	PCB-46	U	.666	.666	pg/g	0.666	2.00
70362-47-9	PCB-48	U	.666	.666	pg/g	0.666	2.00
PCB-49/69	PCB-69/49	CU	1.33	1.33	pg/g	1.33	4.00
PCB-50/53	PCB-50/53	CU	1.33	1.33	pg/g	1.33	4.00
35693-99-3	PCB-52	U	1.33	1.33	pg/g	1.33	2.00
15968-05-5	PCB-54	U	.666	.666	pg/g	0.666	2.00
74338-24-2	PCB-55	U	1	1	pg/g	1.00	2.00
41464-43-1	PCB-56	U	.666	.666	pg/g	0.666	4.00
70424-67-8	PCB-57	U	1	1	pg/g	1.00	2.00
41464-49-7	PCB-58	U	1	1	pg/g	1.00	2.00
PCB-59/62/75	PCB-59/62/75	CU	2	2	pg/g	2.00	6.00
33025-41-1	PCB-60	U	.666	.666	pg/g	0.666	4.00
PCB-61-76	PCB-61/76/70/74	CU	2.66	2.66	pg/g	2.66	8.00
74472-34-7	PCB-63	U	.666	.666	pg/g	0.666	5.00
52663-58-8	PCB-64	U	1	1	pg/g	1.00	2.00
32598-10-0	PCB-66	U	1	1	pg/g	1.00	5.00
73575-53-8	PCB-67	U	1	1	pg/g	1.00	2.00
73575-52-7	PCB-68	U	.666	.666	pg/g	0.666	2.00
41464-42-0	PCB-72	U	.666	.666	pg/g	0.666	4.00
74338-23-1	PCB-73	U	1	1	pg/g	1.00	2.00
32598-13-3	PCB-77	U	.666	.666	pg/g	0.666	2.00
70362-49-1	PCB-78	U	.666	.666	pg/g	0.666	2.00
41464-48-6	PCB-79	U	.666	.666	pg/g	0.666	4.00
33284-52-5	PCB-80	U	.666	.666	pg/g	0.666	4.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.666	.666	pg/g	0.666	2.00
52663-62-4	PCB-82	U	1	1	pg/g	1.00	5.00
60145-20-2	PCB-83	U	1	1	pg/g	1.00	2.00
52663-60-2	PCB-84	U	1	1	pg/g	1.00	2.00
PCB-85-117	PCB-117/116/85	CU	2	2	pg/g	2.00	6.00
PCB-86-125	PCB-86/87/97/109/119/125	CU	4	4	pg/g	4.00	12.0
PCB-88/91	PCB-88/91	CU	1.33	1.33	pg/g	1.33	4.00
73575-57-2	PCB-89	U	.666	.666	pg/g	0.666	2.00
PCB-90-113	PCB-113/90/101	CU	2	2	pg/g	2.00	6.00
52663-61-3	PCB-92	U	1	1	pg/g	1.00	2.00
PCB-93/100	PCB-93/100	CU	2	2	pg/g	2.00	4.00
73575-55-0	PCB-94	U	.666	.666	pg/g	0.666	2.00
38379-99-6	PCB-95	U	1.33	1.33	pg/g	1.33	4.00
73575-54-9	PCB-96	U	.666	.666	pg/g	0.666	2.00
PCB-98/102	PCB-102/98	CU	1.33	1.33	pg/g	1.33	4.00
38380-01-7	PCB-99	U	1.33	1.33	pg/g	1.33	2.00
60145-21-3	PCB-103	U	.666	.666	pg/g	0.666	5.00
56558-16-8	PCB-104	U	.666	.666	pg/g	0.666	2.00
32598-14-4	PCB-105	U	1	1	pg/g	1.00	2.00
70424-69-0	PCB-106	U	1	1	pg/g	1.00	2.00
70424-68-9	PCB-107	U	.666	.666	pg/g	0.666	4.00
PCB-108/124	PCB-108/124	CU	1.33	1.33	pg/g	1.33	4.00
PCB-110/115	PCB-110/115	CU	2.66	2.66	pg/g	2.66	4.00
39635-32-0	PCB-111	U	.666	.666	pg/g	0.666	2.00
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	2.00
74472-37-0	PCB-114	U	.666	.666	pg/g	0.666	2.00
31508-00-6	PCB-118	U	1.33	1.33	pg/g	1.33	4.00
68194-12-7	PCB-120	U	.666	.666	pg/g	0.666	2.00
56558-18-0	PCB-121	U	.666	.666	pg/g	0.666	2.00
76842-07-4	PCB-122	U	.666	.666	pg/g	0.666	6.92
65510-44-3	PCB-123	U	.666	.666	pg/g	0.666	2.00
57465-28-8	PCB-126	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.666	.666	pg/g	0.666	2.00
PCB-128/166	PCB-128/166	CU	1.33	1.33	pg/g	1.33	4.00
PCB-129-163	PCB-138/163/129	CU	2.66	2.66	pg/g	2.66	6.00
52663-66-8	PCB-130	U	1	1	pg/g	1.00	2.00
61798-70-7	PCB-131	U	.666	.666	pg/g	0.666	2.00
38380-05-1	PCB-132	U	1	1	pg/g	1.00	2.00
35694-04-3	PCB-133	U	.666	.666	pg/g	0.666	2.00
52704-70-8	PCB-134	U	1.33	1.33	pg/g	1.33	2.00
PCB-135/151	PCB-151/135	CU	1.33	1.33	pg/g	1.33	4.00
38411-22-2	PCB-136	U	.666	.666	pg/g	0.666	2.00
35694-06-5	PCB-137	U	1.33	1.33	pg/g	1.33	2.00
PCB-139/140	PCB-139/140	CU	1.33	1.33	pg/g	1.33	4.00
52712-04-6	PCB-141	U	1.33	1.33	pg/g	1.33	4.00
41411-61-4	PCB-142	U	.666	.666	pg/g	0.666	2.00
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	2.00
68194-14-9	PCB-144	U	.666	.666	pg/g	0.666	2.00
74472-40-5	PCB-145	U	.666	.666	pg/g	0.666	2.00
51908-16-8	PCB-146	U	1	1	pg/g	1.00	2.00
PCB-147/149	PCB-147/149	CU	2	2	pg/g	2.00	8.00
74472-41-6	PCB-148	U	.666	.666	pg/g	0.666	2.00
68194-08-1	PCB-150	U	1	1	pg/g	1.00	2.00
68194-09-2	PCB-152	U	.666	.666	pg/g	0.666	2.00
PCB-153/168	PCB-153/168	CU	2	2	pg/g	2.00	8.00
60145-22-4	PCB-154	U	.666	.666	pg/g	0.666	2.00
33979-03-2	PCB-155	U	.666	.666	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	CU	1.33	1.33	pg/g	1.33	4.00
74472-42-7	PCB-158	U	.666	.666	pg/g	0.666	2.00
39635-35-3	PCB-159	U	.666	.666	pg/g	0.666	2.00
41411-62-5	PCB-160	U	.666	.666	pg/g	0.666	2.00
74472-43-8	PCB-161	U	1	1	pg/g	1.00	2.00
39635-34-2	PCB-162	U	1	1	pg/g	1.00	2.00
74472-45-0	PCB-164	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.666	.666	pg/g	0.666	2.00
52663-72-6	PCB-167	U	.666	.666	pg/g	0.666	2.00
32774-16-6	PCB-169	U	1	1	pg/g	1.00	2.00
35065-30-6	PCB-170	U	.666	.666	pg/g	0.666	2.00
PCB-171/173	PCB-173/171	CU	1.33	1.33	pg/g	1.33	4.00
52663-74-8	PCB-172	U	1	1	pg/g	1.00	2.00
38411-25-5	PCB-174	U	1.33	1.33	pg/g	1.33	2.00
40186-70-7	PCB-175	U	1	1	pg/g	1.00	2.00
52663-65-7	PCB-176	U	.666	.666	pg/g	0.666	2.00
52663-70-4	PCB-177	U	1	1	pg/g	1.00	2.00
52663-67-9	PCB-178	U	1.33	1.33	pg/g	1.33	2.00
52663-64-6	PCB-179	U	.666	.666	pg/g	0.666	2.00
PCB-180/193	PCB-193/180	CU	2	2	pg/g	2.00	4.00
74472-47-2	PCB-181	U	1	1	pg/g	1.00	2.00
60145-23-5	PCB-182	U	.666	.666	pg/g	0.666	2.00
PCB-183/185	PCB-183/185	CU	1.33	1.33	pg/g	1.33	4.00
74472-48-3	PCB-184	U	.666	.666	pg/g	0.666	2.00
74472-49-4	PCB-186	U	.666	.666	pg/g	0.666	2.00
52663-68-0	PCB-187	U	1	1	pg/g	1.00	2.00
74487-85-7	PCB-188	U	.666	.666	pg/g	0.666	2.00
39635-31-9	PCB-189	U	.666	.666	pg/g	0.666	2.00
41411-64-7	PCB-190	U	1	1	pg/g	1.00	2.00
74472-50-7	PCB-191	U	.666	.666	pg/g	0.666	2.00
74472-51-8	PCB-192	U	.666	.666	pg/g	0.666	2.00
35694-08-7	PCB-194	U	.666	.666	pg/g	0.666	2.00
52663-78-2	PCB-195	U	1	1	pg/g	1.00	2.00
42740-50-1	PCB-196	U	.666	.666	pg/g	0.666	2.00
PCB-197/200	PCB-197/200	CU	1.33	1.33	pg/g	1.33	4.00
PCB-198/199	PCB-198/199	CU	1.33	1.33	pg/g	1.33	4.00
40186-71-8	PCB-201	U	.666	.666	pg/g	0.666	2.00
2136-99-4	PCB-202	U	1	1	pg/g	1.00	2.00
52663-76-0	PCB-203	U	1.33	1.33	pg/g	1.33	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	1	1	pg/g	1.00	2.00
74472-53-0	PCB-205	U	.666	.666	pg/g	0.666	2.00
40186-72-9	PCB-206	U	1	1	pg/g	1.00	2.00
52663-79-3	PCB-207	U	.666	.666	pg/g	0.666	2.00
52663-77-1	PCB-208	U	.666	.666	pg/g	0.666	2.00
2051-24-3	PCB-209	U	.666	.666	pg/g	0.666	2.00
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	2.43	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	0	0	pg/g		
25429-29-2	Total Penta PCBs	U	0	0	pg/g		
26601-64-9	Total Hexa PCBs	U	0	0	pg/g		
28655-71-2	Total Hepta PCBs	U	0	0	pg/g		
55722-26-4	Total Octa PCBs	U	0	0	pg/g		
53742-07-7	Total Nona PCBs	U	0	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0	0	pg/g		
1336-36-3	Total PCB Congeners	U	2.43	0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		108	200	pg/g	53.9	(15%-150%)
13C-3-MoCB		116	200	pg/g	57.8	(15%-150%)
13C-4-DiCB		135	200	pg/g	67.3	(25%-150%)
13C-15-DiCB		136	200	pg/g	68.2	(25%-150%)
13C-19-TrCB		140	200	pg/g	70.1	(25%-150%)
13C-37-TrCB		151	200	pg/g	75.3	(25%-150%)
13C-54-TeCB		167	200	pg/g	83.5	(25%-150%)
13C-77-TeCB		158	200	pg/g	79.1	(25%-150%)
13C-81-TeCB		160	200	pg/g	79.8	(25%-150%)
13C-104-PeCB		171	200	pg/g	85.4	(25%-150%)
13C-105-PeCB		141	200	pg/g	70.4	(25%-150%)
13C-114-PeCB		137	200	pg/g	68.4	(25%-150%)
13C-118-PeCB		147	200	pg/g	73.3	(25%-150%)
13C-123-PeCB		150	200	pg/g	75.0	(25%-150%)
13C-126-PeCB		148	200	pg/g	74.0	(25%-150%)
13C-155-HxCB		168	200	pg/g	83.9	(25%-150%)
13C-156-HxCB	C	291	400	pg/g	72.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		138	200	pg/g	68.9	(25%-150%)
13C-169-HxCB		169	200	pg/g	84.7	(25%-150%)
13C-188-HpCB		117	200	pg/g	58.7	(25%-150%)
13C-189-HpCB		127	200	pg/g	63.4	(25%-150%)
13C-202-OcCB		120	200	pg/g	60.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010061**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**MB for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 20:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-4**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		166	200	pg/g	82.9	(25%-150%)
13C-206-NoCB		160	200	pg/g	79.9	(25%-150%)
13C-208-NoCB		149	200	pg/g	74.4	(25%-150%)
13C-209-DeCB		180	200	pg/g	89.8	(25%-150%)
13C-28-TrCB		161	200	pg/g	80.6	(30%-135%)
13C-111-PeCB		166	200	pg/g	82.9	(30%-135%)
13C-178-HpCB		173	200	pg/g	86.7	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010062**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCS for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 17:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-2**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		42.2	42	pg/g	1.00	5.00
2051-62-9	PCB-3		44.1	43.6	pg/g	1.00	2.00
13029-08-8	PCB-4		40.8	39.9	pg/g	1.00	4.00
2050-68-2	PCB-15		46.9	46.3	pg/g	1.00	20.0
38444-73-4	PCB-19		44.0	43.8	pg/g	0.666	2.00
38444-90-5	PCB-37		43.7	43.3	pg/g	0.666	20.0
15968-05-5	PCB-54		86.9	86.8	pg/g	0.666	2.00
32598-13-3	PCB-77		79.8	79.6	pg/g	0.666	2.00
70362-50-4	PCB-81		90.3	90.1	pg/g	0.666	2.00
56558-16-8	PCB-104		92.1	91.9	pg/g	0.666	2.00
32598-14-4	PCB-105		100	99.5	pg/g	1.00	2.00
74472-37-0	PCB-114		98.3	97.9	pg/g	0.666	2.00
31508-00-6	PCB-118		85.4	83.5	pg/g	1.33	4.00
65510-44-3	PCB-123		80.0	79.7	pg/g	0.666	2.00
57465-28-8	PCB-126		94.9	94.6	pg/g	0.666	2.00
33979-03-2	PCB-155		92.2	92	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	209	209	pg/g	1.33	4.00
52663-72-6	PCB-167		111	111	pg/g	0.666	2.00
32774-16-6	PCB-169		94.5	94.2	pg/g	1.00	2.00
74487-85-7	PCB-188		94.4	94.2	pg/g	0.666	2.00
39635-31-9	PCB-189		97.1	96.9	pg/g	0.666	2.00
2136-99-4	PCB-202		141	140	pg/g	1.00	2.00
74472-53-0	PCB-205		138	138	pg/g	0.666	2.00
40186-72-9	PCB-206		134	134	pg/g	1.00	2.00
52663-77-1	PCB-208		145	145	pg/g	0.666	2.00
2051-24-3	PCB-209		132	131	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		76.7	200	pg/g	38.3	(15%-140%)
13C-3-MoCB		85.9	200	pg/g	43.0	(15%-140%)
13C-4-DiCB		94.6	200	pg/g	47.3	(30%-140%)
13C-15-DiCB		109	200	pg/g	54.6	(30%-140%)
13C-19-TrCB		106	200	pg/g	52.8	(30%-140%)
13C-37-TrCB		132	200	pg/g	66.0	(30%-140%)
13C-54-TeCB		134	200	pg/g	66.8	(30%-140%)
13C-77-TeCB		143	200	pg/g	71.3	(30%-140%)
13C-81-TeCB		144	200	pg/g	71.9	(30%-140%)
13C-104-PeCB		147	200	pg/g	73.3	(30%-140%)
13C-105-PeCB		129	200	pg/g	64.4	(30%-140%)
13C-114-PeCB		124	200	pg/g	61.8	(30%-140%)
13C-118-PeCB		132	200	pg/g	66.0	(30%-140%)
13C-123-PeCB		137	200	pg/g	68.4	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010062**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCS for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 17:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-2**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		132	200	pg/g	66.2	(30%-140%)
13C-155-HxCB		144	200	pg/g	72.0	(30%-140%)
13C-156-HxCB	C	247	400	pg/g	61.7	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		118	200	pg/g	58.8	(30%-140%)
13C-169-HxCB		142	200	pg/g	71.0	(30%-140%)
13C-188-HpCB		108	200	pg/g	53.9	(30%-140%)
13C-189-HpCB		114	200	pg/g	57.2	(30%-140%)
13C-202-OcCB		107	200	pg/g	53.7	(30%-140%)
13C-205-OcCB		147	200	pg/g	73.5	(30%-140%)
13C-206-NoCB		141	200	pg/g	70.7	(30%-140%)
13C-208-NoCB		134	200	pg/g	66.9	(30%-140%)
13C-209-DeCB		162	200	pg/g	81.1	(30%-140%)
13C-28-TrCB		136	200	pg/g	67.9	(40%-125%)
13C-111-PeCB		146	200	pg/g	72.9	(40%-125%)
13C-178-HpCB		149	200	pg/g	74.5	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010063**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCSD for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		41.7	41.4	pg/g	1.00	5.00
2051-62-9	PCB-3		44.7	44.2	pg/g	1.00	2.00
13029-08-8	PCB-4		39.7	38.9	pg/g	1.00	4.00
2050-68-2	PCB-15		46.6	45.9	pg/g	1.00	20.0
38444-73-4	PCB-19		44.4	44.2	pg/g	0.666	2.00
38444-90-5	PCB-37		43.8	43.5	pg/g	0.666	20.0
15968-05-5	PCB-54		85.2	85	pg/g	0.666	2.00
32598-13-3	PCB-77		81.1	80.8	pg/g	0.666	2.00
70362-50-4	PCB-81		90.0	89.7	pg/g	0.666	2.00
56558-16-8	PCB-104		91.7	91.5	pg/g	0.666	2.00
32598-14-4	PCB-105		100	99.8	pg/g	1.00	2.00
74472-37-0	PCB-114		98.5	98.1	pg/g	0.666	2.00
31508-00-6	PCB-118		85.1	83.2	pg/g	1.33	4.00
65510-44-3	PCB-123		80.0	79.7	pg/g	0.666	2.00
57465-28-8	PCB-126		93.8	93.4	pg/g	0.666	2.00
33979-03-2	PCB-155		92.3	92.1	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	210	210	pg/g	1.33	4.00
52663-72-6	PCB-167		113	113	pg/g	0.666	2.00
32774-16-6	PCB-169		95.6	95.3	pg/g	1.00	2.00
74487-85-7	PCB-188		95.0	94.8	pg/g	0.666	2.00
39635-31-9	PCB-189		97.4	97.1	pg/g	0.666	2.00
2136-99-4	PCB-202		142	141	pg/g	1.00	2.00
74472-53-0	PCB-205		138	137	pg/g	0.666	2.00
40186-72-9	PCB-206		135	135	pg/g	1.00	2.00
52663-77-1	PCB-208		147	147	pg/g	0.666	2.00
2051-24-3	PCB-209		131	131	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		93.7	200	pg/g	46.9	(15%-140%)
13C-3-MoCB		107	200	pg/g	53.7	(15%-140%)
13C-4-DiCB		123	200	pg/g	61.7	(30%-140%)
13C-15-DiCB		138	200	pg/g	68.8	(30%-140%)
13C-19-TrCB		140	200	pg/g	69.9	(30%-140%)
13C-37-TrCB		156	200	pg/g	78.2	(30%-140%)
13C-54-TeCB		175	200	pg/g	87.3	(30%-140%)
13C-77-TeCB		163	200	pg/g	81.4	(30%-140%)
13C-81-TeCB		164	200	pg/g	81.9	(30%-140%)
13C-104-PeCB		186	200	pg/g	93.2	(30%-140%)
13C-105-PeCB		152	200	pg/g	76.2	(30%-140%)
13C-114-PeCB		147	200	pg/g	73.4	(30%-140%)
13C-118-PeCB		157	200	pg/g	78.5	(30%-140%)
13C-123-PeCB		163	200	pg/g	81.6	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3037**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010063**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25525**				
Client ID:	**LCSD for batch 25525**			**Prep Basis:**	**As Received**
Batch ID:	**25527**	**Method:**	**EPA Method 1668A**		
Run Date:	**03/25/2014 18:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25mar14b-3**			**Dilution:**	**1**
Prep Batch:	**25525**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**24-MAR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		160	200	pg/g	80.0	(30%-140%)
13C-155-HxCB		178	200	pg/g	88.9	(30%-140%)
13C-156-HxCB	C	309	400	pg/g	77.2	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		148	200	pg/g	73.9	(30%-140%)
13C-169-HxCB		180	200	pg/g	90.0	(30%-140%)
13C-188-HpCB		127	200	pg/g	63.6	(30%-140%)
13C-189-HpCB		143	200	pg/g	71.5	(30%-140%)
13C-202-OcCB		133	200	pg/g	66.3	(30%-140%)
13C-205-OcCB		178	200	pg/g	89.2	(30%-140%)
13C-206-NoCB		170	200	pg/g	85.1	(30%-140%)
13C-208-NoCB		162	200	pg/g	81.0	(30%-140%)
13C-209-DeCB		199	200	pg/g	99.3	(30%-140%)
13C-28-TrCB		170	200	pg/g	84.9	(40%-125%)
13C-111-PeCB		174	200	pg/g	87.1	(40%-125%)
13C-178-HpCB		185	200	pg/g	92.3	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3094

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Metals(W)	NMED Explosives list	Tal Metals
CACV-14-49242	Mar 28 2014	10:45	SO			1	1
CACV-14-49243	Mar 28 2014	10:55	SO			1	1
CACV-14-49256	Mar 28 2014	12:15	SO	1			1
CACV-14-49257	Mar 28 2014	12:40	SO	1			1
CACV-14-49258	Mar 28 2014	15:00	SO	1			1
CACV-14-49259	Mar 28 2014	15:20	SO	1			1
CACV-14-74311	Mar 28 2014	15:20	W		1		

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Martin	3/31/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-74311 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	W	ok
TIME COLLECTED (HH:MM):		1520	MEDIA:		
PRS ID:		ok	SAMPLE TECH CODE:	DC	
LOCATION ID:	UNK	CV-61494	FIELD PREP:	UF	
LOCATION TYPE:		ok	FIELD QC TYPE:	FR	
TOP DEPTH:		NA	SAMPLE USAGE:	QC	
BOTTOM DEPTH:		NA	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	Metals(W)	1 LITER POLY	1	HNO3	Y	

SAMPLE COMMENTS: Rinsate of CACV-14-49259

LOCATION COMMENTS:

FIELD PARAMETERS: pH<2

COLLECTED BY (PRINT) K. Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Green (Signature)	3/28/14 4:30
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 03/28/2014

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49242 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		3/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1045	MEDIA:		Sed
PRS ID:	Cañon de Valle	ok	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~45~~ SPM 3/7/14	~~CV-61488~~ SPM 3/7/14 CV-61489	FIELD PREP:	NA	↓
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	↓
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0.098	3cm	EXCAVATED:		YES / (NO) / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine sediment

LOCATION COMMENTS: CDV-1C

FIELD PARAMETERS: HE spot test negative

FIELD SCREENING/MEASUREMENT RESULTS:

BKg Rad
α 17
β/γ 1045

Gross Alpha 47 dpm

Gross Beta/Gamma 1536 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Read (Signature) Kevin Read	3/28/14 1630	(Printed Name) K. Green (Signature)	3/28/14 4:30
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49243 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1055	MEDIA:		Sed
PRS ID:	Cañon de Valle	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	AS Sum 3/7/14	CV-61490	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0 cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.328	10 cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment

LOCATION COMMENTS: CDV-1C

FIELD PARAMETERS: HE Spot test negative

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad α: 17 B/G: 1045

Gross Alpha 14 dpm

Gross Beta/Gamma 1205 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) K. Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Green (Signature)	3/28/14 4:30
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49256 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1215	MEDIA:		SED
PRS ID:	Cañon de Valle	ok	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	47 SCM 3/31/14	CV-01491	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0 cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.164 5cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: CDV - 2E

FIELD PARAMETERS: HE spot test negative

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
α: 17 cpm
β: 1045 cpm

Gross Alpha 28 dpm

Gross Beta/Gamma 1373 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Bruce (Signature)	3/28/14 4:30
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49257 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		12:40	MEDIA:		Sed
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	AB GRM 3/7/14	CV-61492	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.459	14cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: CDV-2E

FIELD PARAMETERS: HE Spot test negative

FIELD SCREENING/MEASUREMENT RESULTS:

Gross Alpha 33 dpm

Gross Beta/Gamma 1694 dpm

PID Ambient Reading = NA ppm

Gross Rad
17 dpm
1045 dpm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Greene (Signature)	3/28/14 1630
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49258 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1500	MEDIA:		SED
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~49~~ CDV 3/7/14	CV-61493	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.492	15cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: PRC 3/28/14
fine ~~+ coarse~~ sediment

LOCATION COMMENTS: CDV-3

FIELD PARAMETERS: HE spot test Negative

FIELD SCREENING/MEASUREMENT RESULTS:

Kgd Rad
17 dpm Gross Alpha 33 dpm
1045 dpm Gross Beta/Gamma 1347 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Green (Signature)	3/28/14 1730
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name) (Signature)		(Printed Name) (Signature)	

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49259 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1520	MEDIA:		Sed
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~50 5m~~ 3/7/14	CV-61494	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.656 20cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment

LOCATION COMMENTS: CDV-3

FIELD PARAMETERS: HF spot test negative

FIELD SCREENING/MEASUREMENT RESULTS:

3kg 1 Rad

x: 17 dpm

Air: 1045 dpm

Gross Alpha 42 dpm

Gross Beta/Gamma 1560 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Green (Signature)	3/28/14 4:30
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3094

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
345519	EPA:245.2					
345519	SW-846:6010C	6				
345519	SW-846:6020	6				
345519	SW-846:7471A	6				
345519	SW-846:8082	4				
345519	SW-846:8321A_MOD	6				

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
345519	EPA:245.2	1380354	1380347						1					1				1			
345519	SW-846:6010C	1376944	1376943						1					1				1			
345519	SW-846:6010C	1377585	1377584	6					1					1				1			
345519	SW-846:6020	1376946	1376945						1					1				1			
345519	SW-846:6020	1377587	1377586	6					1					1				1			
345519	SW-846:7471A	1380361	1380360	6					1					1	1			1			
345519	SW-846:8082	1380524	1380520	4					1					1							
345519	SW-846:8321A_MOD	1376719	1376718	6					1					1							

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:245.2	INORGANIC	CACV-14-74311	345519007	FR	1	0	0	0
EPA:245.2	INORGANIC	CALA-14-57276	1203068854	DUP	1	0	0	0
EPA:245.2	INORGANIC	LCS	1203068853	LCS	0	0	1	0
EPA:245.2	INORGANIC	MB	1203068852	MB	1	0	0	0
SW-846:6010C	INORGANIC	CACV-14-49242	345519001	REG	17	0	0	0
SW-846:6010C	INORGANIC	CACV-14-49243	345519002	REG	17	0	0	0
SW-846:6010C	INORGANIC	CACV-14-49256	345519003	REG	17	0	0	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:6010C	INORGANIC	CACV-14-49257	345519004	REG	17	0	0	0
SW-846:6010C	INORGANIC	CACV-14-49258	345519005	REG	17	0	0	0
SW-846:6010C	INORGANIC	CACV-14-49259	345519006	REG	17	0	0	0
SW-846:6010C	INORGANIC	CACV-14-74311	345519007	FR	13	0	0	0
SW-846:6010C	INORGANIC	CALA-14-57276	1203060836	DUP	13	0	0	0
SW-846:6010C	INORGANIC	CASA-14-57293	1203062360	DUP	17	0	0	0
SW-846:6010C	INORGANIC	LCS	1203060835	LCS	0	0	13	0
SW-846:6010C	INORGANIC	LCS	1203062359	LCS	0	0	17	0
SW-846:6010C	INORGANIC	MB	1203060834	MB	13	0	0	0
SW-846:6010C	INORGANIC	MB	1203062358	MB	17	0	0	0
SW-846:6020	INORGANIC	CACV-14-49242	345519001	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49243	345519002	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49256	345519003	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49257	345519004	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49258	345519005	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49259	345519006	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-74311	1203060841	DUP	9	0	0	0
SW-846:6020	INORGANIC	CACV-14-74311	345519007	FR	9	0	0	0
SW-846:6020	INORGANIC	CASA-14-57293	1203062365	DUP	5	0	0	0
SW-846:6020	INORGANIC	LCS	1203060840	LCS	0	0	9	0
SW-846:6020	INORGANIC	LCS	1203062364	LCS	0	0	5	0
SW-846:6020	INORGANIC	MB	1203060839	MB	9	0	0	0
SW-846:6020	INORGANIC	MB	1203062363	MB	5	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49242	1203068870	DUP	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49242	345519001	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49243	345519002	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49256	345519003	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49257	345519004	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49258	345519005	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49259	345519006	REG	1	0	0	0
SW-846:7471A	INORGANIC	LCS	1203068869	LCS	0	0	1	0
SW-846:7471A	INORGANIC	LCSD	1203068876	LCSD	0	0	1	0
SW-846:7471A	INORGANIC	MB	1203068868	MB	1	0	0	0
SW-846:8082	PESTPCB	CACV-14-49256	345519003	REG	7	2	0	0
SW-846:8082	PESTPCB	CACV-14-49257	345519004	REG	7	2	0	0
SW-846:8082	PESTPCB	CACV-14-49258	345519005	REG	7	2	0	0
SW-846:8082	PESTPCB	CACV-14-49259	345519006	REG	7	2	0	0
SW-846:8082	PESTPCB	LCS	1203069326	LCS	0	2	2	0
SW-846:8082	PESTPCB	MB	1203069323	MB	7	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49242	345519001	REG	20	2	0	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49243	345519002	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49256	345519003	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49257	345519004	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49258	345519005	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49259	345519006	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	LCS	1203060319	LCS	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	MB	1203060318	MB	20	2	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

DATA VALIDATION REPORT

LCS Lab Sample	LCSD Lab	Analytical Method	Parameter Name	Lab Lot ID	Analysis	Sample Matrix	LCS Spike Recovery	LCSD Spike Recovery	Upper Limit	Lower Limit	Upper Rejection Limit	Lower Rejection Limit	RPD	RPD Limit
1203060319		SW-846:8321A_MOD	Tetryl	1376718	04-25-2014	SD	25		131	36		10		

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

Location ID	COC Number	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Paramter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detect Flag	Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent	Analysis Lot ID	Validation Status Code	Use Flag
CV-61489	2014-3094	CACV-14-49242	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	490	ug/kg	0.49	mg/kg			SD	03/28/2014		1376719	VAL	Y
CV-61490	2014-3094	CACV-14-49243	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	493	ug/kg	0.493	mg/kg			SD	03/28/2014		1376719	VAL	Y
CV-61491	2014-3094	CACV-14-49256	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	498	ug/kg	0.498	mg/kg			SD	03/28/2014		1376719	VAL	Y
CV-61492	2014-3094	CACV-14-49257	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	490	ug/kg	0.49	mg/kg			SD	03/28/2014		1376719	VAL	Y
CV-61493	2014-3094	CACV-14-49258	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	498	ug/kg	0.498	mg/kg			SD	03/28/2014		1376719	VAL	Y
CV-61494	2014-3094	CACV-14-49259	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	500	ug/kg	0.5	mg/kg			SD	03/28/2014		1376719	VAL	Y

DATA VALIDATION REPORT

Reason Code	Description
HE12a	The LCS percent recovery was < the Lower Acceptance Limit but >10%. Follow the external laboratory limits.
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CACV-14-49242	CV-61489	REG	SW-846:6010C	0	17
CACV-14-49242	CV-61489	REG	SW-846:6020	0	5
CACV-14-49242	CV-61489	REG	SW-846:7471A	0	1
CACV-14-49242	CV-61489	REG	SW-846:8321A_MOD	0	20
CACV-14-49243	CV-61490	REG	SW-846:6010C	0	17
CACV-14-49243	CV-61490	REG	SW-846:6020	0	5
CACV-14-49243	CV-61490	REG	SW-846:7471A	0	1
CACV-14-49243	CV-61490	REG	SW-846:8321A_MOD	0	20
CACV-14-49256	CV-61491	REG	SW-846:6010C	0	17
CACV-14-49256	CV-61491	REG	SW-846:6020	0	5
CACV-14-49256	CV-61491	REG	SW-846:7471A	0	1
CACV-14-49256	CV-61491	REG	SW-846:8082	0	7
CACV-14-49256	CV-61491	REG	SW-846:8321A_MOD	0	20
CACV-14-49257	CV-61492	REG	SW-846:6010C	0	17
CACV-14-49257	CV-61492	REG	SW-846:6020	0	5
CACV-14-49257	CV-61492	REG	SW-846:7471A	0	1
CACV-14-49257	CV-61492	REG	SW-846:8082	0	7
CACV-14-49257	CV-61492	REG	SW-846:8321A_MOD	0	20
CACV-14-49258	CV-61493	REG	SW-846:6010C	0	17
CACV-14-49258	CV-61493	REG	SW-846:6020	0	5
CACV-14-49258	CV-61493	REG	SW-846:7471A	0	1
CACV-14-49258	CV-61493	REG	SW-846:8082	0	7
CACV-14-49258	CV-61493	REG	SW-846:8321A_MOD	0	20
CACV-14-49259	CV-61494	REG	SW-846:6010C	0	17
CACV-14-49259	CV-61494	REG	SW-846:6020	0	5
CACV-14-49259	CV-61494	REG	SW-846:7471A	0	1

DATA VALIDATION REPORT

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CACV-14-49259	CV-61494	REG	SW-846:8082	0	7
CACV-14-49259	CV-61494	REG	SW-846:8321A_MOD	0	20
CACV-14-74311	CV-61494	FR	EPA:245.2	0	1
CACV-14-74311	CV-61494	FR	SW-846:6010C	0	13
CACV-14-74311	CV-61494	FR	SW-846:6020	0	9

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

April 28, 2014

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL ER
Work Order: 345519
SDG: 2014-3094

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on April 01, 2014, and analyzed for Explosives by LCMSMS, GC Semivolatile PCB and Metals. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Hope Taylor for
Valerie Davis
Project Manager

Chain of Custody: 2014-3094
Enclosures

ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Work Order #: 345519
SDG: 2014-3094

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Case Narrative

Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Workorder #: 345519
SDG # : 2014-3094

April 28, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 01, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
345519001	CACV-14-49242
345519002	CACV-14-49243
345519003	CACV-14-49256
345519004	CACV-14-49257
345519005	CACV-14-49258
345519006	CACV-14-49259
345519007	CACV-14-74311

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, GC Semivolatile PCB and Metals.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.

Hope Taylor for
Valerie Davis
Project Manager

List of current GEL Certifications as of 28 April 2014

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122014−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−14−9
Utah NELAP	SC000122013−11
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Chain of Custody and Supporting Documentation

General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

345519

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3094

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Metals(W)	NMED Explosives list	Tal Metals
CACV-14-49242	Mar 28 2014	10:45	SO			1	1
CACV-14-49243	Mar 28 2014	10:55	SO			1	1
CACV-14-49256	Mar 28 2014	12:15	SO	1			1
CACV-14-49257	Mar 28 2014	12:40	SO	1			1
CACV-14-49258	Mar 28 2014	15:00	SO	1			1
CACV-14-49259	Mar 28 2014	15:20	SO	1			1
CACV-14-74311	Mar 28 2014	15:20	W		1		

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
[signature]	Melissa Martin	3/31/14 3:00	P. Dent	Patricia Dent	4-1-14 0905
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	**SDG/AR/COC/Work Order:** 2014-3094
Received By: P. Nelson	**Date Received:** 4-1-14

Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		X	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): OCPM
Classified Radioactive II or III by RSO?		X	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		X	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		X	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe) 3.4c 17c
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 130462966
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	X			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7	Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
11	Number of containers received match number indicated on COC?	X			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			X	clients
13	COC form is properly signed in relinquished/received sections?	X			
14	Carrier and tracking number.	X			Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 5908 1776 8586 5908 1776 8575 5908 1776 8564

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials GP Date 4-3-14 Page 1 of 1

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 31MAR14
ACTWGT: 33.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A01EC2AF0

4c

FedEx Express

2 of 2
MPS# 0263 5908 1776 8586
Mstr# 5908 1776 8575 0201

TUE - 01 APR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 31MAR14
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A01EC2AF0

3c

FedEx Express

1 of 2
TRK# 0201 5908 1776 8575
MASTER

TUE - 01 APR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 31MAR14
ACTWGT: 64.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: WE99316W200

17

FedEx Express

TUE - 01 APR 10:30A
PRIORITY OVERNIGHT

TRK# 0201 5908 1776 8564

XX CHSA

29407
SC-US CHS

Part # 156148-434 RV12 10/11

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Explosives by LCMSMS Analysis

Case Narrative

LC-MS/MS Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3094

Method/Analysis Information

Procedure:	**Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS) by SW-846 Method 8321 Modified (8321M)**
Analytical Method:	SW846 8321A Modified
Prep Method:	SW846 8330 PREP
Analytical Batch Number:	1376719
Prep Batch Number:	1376718

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8321A Modified:

Sample ID	Client ID
345519001	CACV-14-49242
345519002	CACV-14-49243
345519003	CACV-14-49256
345519004	CACV-14-49257
345519005	CACV-14-49258
345519006	CACV-14-49259
1203060318	Method Blank (MB)
1203060319	Laboratory Control Sample (LCS)
1203060320	345519001(CACV-14-49242) Matrix Spike (MS)
1203060321	345519001(CACV-14-49242) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP).

The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 17.

Primary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS (1203060319) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%. Both the MS (1203060320) and MSD (1203060321) had passing recoveries for Tetryl. The data are reported with the appropriate DER.

QC Sample Designation
Client sample 345519001 (CACV-14-49242) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
A final internal standard concentration of 100ug/L is employed in order to meet the minimum response factor requirement of 0.01 per EPA Method 8000C for the analysis of explosives on the API 4000.

The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Secondary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 345519001 (CACV-14-49242) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS (1203060320) did not meet acceptance criteria for the recovery of 2,4-Diamino-6-nitrotoluene at 44.4%. The limits are 61-133%. The LCS (1203060319) and MSD(1203060321) had passing recoveries for 2,4-Diamino-6-nitrotoluene. Target analytes were not detected in the parent sample, 345519001 (CACV-14-49242). The non-conforming MS recovery is attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The MS/MSD pair (1203060320/1203060321) did not meet acceptance criteria for RPD limits for 2,4-Diamino-6-nitrotoluene at 46.4% and for TATB at 54.1%. The limits are 0-30% for both analytes. TATB had passing spike recoveries in both the MS (1203060320) and MSD (1203060321). The MS (1203060320) had a low recovery of 2,4-Diamino-6-nitrotoluene. The non-conforming RPD recoveries are attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Internal Standard (ISTD) Acceptance
The internal standard was not added to the Secondary analyte extracts.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
The MS (1203060320) was re-analyzed for low spike recovery in the initial analysis. The low recovery was duplicated. The data from the original analysis are reported.

Miscellaneous Information

Data Exception (DER) Documentation
Data Exception Report 1286867 was generated for this SDG.

The LCS (1203060319) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%. Both the MS (1203060320) and MSD (1203060321) had passing recoveries for Tetryl. The data are reported with the appropriate DER.

The MS (1203060320) did not meet acceptance criteria for the recovery of 2,4-Diamino-6-nitrotoluene at 44.4%. The limits are 61-133%. The LCS (1203060319) and MSD(1203060321) had passing recoveries for 2,4-Diamino-6-nitrotoluene. Target analytes were not detected in the parent sample, 345519001 (CACV-14-49242). The non-conforming MS recovery is attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

The MS/MSD pair (1203060320/1203060321) did not meet acceptance criteria for RPD limits for 2,4-Diamino-6-nitrotoluene at 46.4% and for TATB at 54.1%. The limits are 0-30% for both analytes. TATB had passing spike recoveries in both the MS (1203060320) and MSD (1203060321). The MS (1203060320) had a low recovery of 2,4-Diamino-6-nitrotoluene. The non-conforming RPD recoveries are attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Additional Comments
Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Primary analyte analysis. It is coupled with a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for the Primary analyte analysis.

The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package.

Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the Primary Nitroaromatic and Nitramine analytes is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

The detection of the Secondary analytes is accomplished through analysis on the following reversed phase column:

YMC: J'sphere ODS-H80, 150 x 4.6mm I.D.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS−LANS−MTOA6−25093−GEL)

Client SDG: 2014−3094 GEL Work Order: 345519

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re−analyzed without re−extraction.
RE Indicates that sample is re−extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP−like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Michael A. Penny Jr. **Name: Michael Penny**

Date: 28 APR 2014 **Title: Group Leader**

Sample Data Summary

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519001

Sample Amount 2.04 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424015.wiff

Date Analyzed: 25-APR-14 00:52

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	490	U	147	490
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	490	U	147	490
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	490	U	147	490
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	490	U	147	490
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	490	U	147	490
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	490	U	147	490
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	490	U	147	490
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	490	U	147	490
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	490	U	147	490
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	490	U	147	490
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	490	U	147	490
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	490	U	147	490
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	490	U	147	490
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519001

Sample Amount 2.04 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	490	U	147	490
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	980	U	245	980
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519001

Sample Amount 2.04 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140025.wiff

Date Analyzed: 14-APR-14 20:15

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	980	U	294	980
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	980	U	294	980
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	980	U	294	980
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1960	U	647	1960
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1960	U	490	1960
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49243

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519002

Sample Amount 2.03 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424018.wiff

Date Analyzed: 25-APR-14 02:37

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	493	U	148	493
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	493	U	148	493
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	493	U	148	493
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	493	U	148	493
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	493	U	148	493
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	493	U	148	493
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	493	U	148	493
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	493	U	148	493
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	493	U	148	493
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	493	U	148	493
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	493	U	148	493
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	493	U	148	493
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	493	U	148	493
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49243

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519002

Sample Amount 2.03 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	493	U	148	493
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	985	U	246	985
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49243

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519002

Sample Amount 2.03 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140028.wiff

Date Analyzed: 14-APR-14 21:05

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	985	U	296	985
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	985	U	296	985
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	985	U	296	985
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1970	U	650	1970
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1970	U	493	1970
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49256

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519003

Sample Amount 2.01 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424019.wiff

Date Analyzed: 25-APR-14 03:12

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	408	J	149	498
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	498	U	149	498
121-14-2	*2,4-Dinitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	498	U	149	498
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	498	U	149	498
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	498	U	149	498
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	498	U	149	498
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	498	U	149	498
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	498	U	149	498
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	498	U	149	498
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	498	U	149	498
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	498	U	149	498
99-65-0	*m-Dinitrobenzene*				
99-99-0	p-Nitrotoluene	498	U	149	498
99-99-0	*p-Nitrotoluene*				
2691-41-0	HMX	744		149	498
2691-41-0	*HMX*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49256

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519003

Sample Amount 2.01 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
121-82-4	RDX	796		149	498
121-82-4	*RDX*				
78-11-5	PETN	995	U	249	995
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49256

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519003

Sample Amount 2.01 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140029.wiff

Date Analyzed: 14-APR-14 21:22

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
618-87-1	3,5-Dinitroaniline	995	U	299	995
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	995	U	299	995
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1990	U	657	1990
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1990	U	498	1990
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
3058-38-6	TATB	2180		299	995
3058-38-6	*TATB*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49257

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519004

Sample Amount 2.04 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424020.wiff

Date Analyzed: 25-APR-14 03:47

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
2691-41-0	HMX	204	J	147	490
2691-41-0	*HMX*				
118-96-7	2,4,6-Trinitrotoluene	490	U	147	490
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	490	U	147	490
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	490	U	147	490
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	490	U	147	490
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	490	U	147	490
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	490	U	147	490
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	490	U	147	490
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	490	U	147	490
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	490	U	147	490
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	490	U	147	490
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	490	U	147	490
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	490	U	147	490
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49257

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519004

Sample Amount 2.04 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	490	U	147	490
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	980	U	245	980
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49257

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519004

Sample Amount 2.04 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140030.wiff

Date Analyzed: 14-APR-14 21:38

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	980	U	294	980
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	980	U	294	980
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	980	U	294	980
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1960	U	647	1960
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1960	U	490	1960
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49258

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519005

Sample Amount 2.01 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424021.wiff

Date Analyzed: 25-APR-14 04:22

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	498	U	149	498
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	498	U	149	498
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	498	U	149	498
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	498	U	149	498
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	498	U	149	498
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	498	U	149	498
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	498	U	149	498
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	498	U	149	498
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	498	U	149	498
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	498	U	149	498
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	498	U	149	498
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	498	U	149	498
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	498	U	149	498
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49258

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519005

Sample Amount 2.01 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	498	U	149	498
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	995	U	249	995
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49258

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519005

Sample Amount 2.01 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140031.wiff

Date Analyzed: 14-APR-14 21:55

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	995	U	299	995
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	995	U	299	995
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	995	U	299	995
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1990	U	657	1990
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1990	U	498	1990
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49259

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519006

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424022.wiff

Date Analyzed: 25-APR-14 04:57

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
121-82-4	RDX	154	J	150	500
121-82-4	*RDX*				
2691-41-0	HMX	330	J	150	500
2691-41-0	*HMX*				
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49259

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519006

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	U	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49259

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 345519006

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140032.wiff

Date Analyzed: 14-APR-14 22:12

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC **GEL Job No (SDG):** 2014-3094

Lab Code: GEL **HPLC Column:** Ultracarb Phenomenex 5u ODS (20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
345519001	CACV-14-49242	95.6	62 - 121	
345519002	CACV-14-49243	92	62 - 121	
345519003	CACV-14-49256	94	62 - 121	
345519004	CACV-14-49257	99.2	62 - 121	
345519005	CACV-14-49258	99.2	62 - 121	
345519006	CACV-14-49259	104	62 - 121	
1203060318	MB for batch 1376718	94	62 - 121	
1203060319	LCS for batch 1376718	98.8	62 - 121	
1203060320	CACV-14-49242MS	100	62 - 121	
1203060321	CACV-14-49242MSD	98	62 - 121	

DNT = 3,4-Dinitrotoluene

Lab Code: GEL **HPLC Column:** YMC J'sphere ODS-H80

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
345519001	CACV-14-49242	94.4	62 - 121	
345519002	CACV-14-49243	96.4	62 - 121	
345519003	CACV-14-49256	95.6	62 - 121	
345519004	CACV-14-49257	94.8	62 - 121	
345519005	CACV-14-49258	89.2	62 - 121	
345519006	CACV-14-49259	83.6	62 - 121	
1203060318	MB for batch 1376718	94.8	62 - 121	
1203060319	LCS for batch 1376718	95.2	62 - 121	
1203060320	CACV-14-49242MS	98.4	62 - 121	
1203060321	CACV-14-49242MSD	98.4	62 - 121	

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Extract Batch Code: 1376718

Date Extracted: 09-APR-14

GEL LCS ID: 1203060319

GEL LCSDUP ID:

Analysis Date/Time: 25-APR-14 00:17

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec	#	LCSD Conc	LCSD Rec	#	RPD	#	RPD	Recovery Limits
1,3,5-Trinitrobenzene	5000	4410	88.2								63 - 128
2,4,6-Trinitrotoluene	5000	4720	94.4								67 - 126
2,4-Dinitrotoluene	5000	5170	103								69 - 122
2,6-Dinitrotoluene	5000	5030	101								65 - 119
2-Amino-4,6-dinitrotoluene	5000	5230	105								67 - 126
4-Amino-2,6-dinitrotoluene	5000	5250	105								62 - 135
HMX	5000	4060	81.2								58 - 123
Nitrobenzene	5000	4610	92.2								58 - 130
PETN	5000	4830	96.6								61 - 125
RDX	5000	4580	91.6								58 - 136
Tetryl	5000	1260	25.2	*							36 - 131
m-Dinitrobenzene	5000	5280	106								64 - 129
m-Nitrotoluene	5000	5070	101								60 - 126
o-Nitrotoluene	5000	4960	99.2								60 - 121
p-Nitrotoluene	5000	5040	101								65 - 119

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Extract Batch Code: 1376718

Date Extracted: 09-APR-14

GEL LCS ID: 1203060319

GEL LCSDUP ID:

Analysis Date/Time: 14-APR-14 19:58

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4-Diamino-6-nitrotoluene	5000	4310	86.2					65 - 116
2,6-Diamino-4-nitrotoluene	5000	4590	91.8					65 - 127
3,5-Dinitroaniline	5000	3910	78.2					61 - 131
TATB	5000	3460	69.2					36 - 156
tris(o-cresyl) phosphate	5000	5220	104					70 - 120

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CACV-14-49242

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Extract Batch Code: 1376718

Date Extracted: 09-APR-14

GEL Spike ID: 1203060320

GEL SpikeDup ID: 1203060321

Analysis Date/Time: 25-APR-14 01:27

MSD Analysis Date/Time: 25-APR-14 02:02

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
PETN	4926.108	0	4650	94.4	5050	101	8.24	30	58 - 125
RDX	4926.108	0	4940	100	5350	107	8.05	30	45 - 135
Tetryl	4926.108	0	3090	62.8	3860	77.2	22	30	36 - 130
m-Dinitrobenzene	4926.108	0	5760	117	5570	111	3.42	30	64 - 129
m-Nitrotoluene	4926.108	0	4520	91.8	4650	93	2.79	30	59 - 126
o-Nitrotoluene	4926.108	0	4670	94.8	5000	100	6.83	30	60 - 116
p-Nitrotoluene	4926.108	0	4780	97	4880	97.6	2.11	30	61 - 120
2,4,6-Trinitrotoluene	4926.108	0	4610	93.6	4850	97	5.06	30	60 - 129
2,6-Dinitrotoluene	4926.108	0	5100	104	5090	102	.264	30	65 - 119
Nitrobenzene	4926.108	0	4770	96.8	4620	92.4	3.16	30	58 - 120
HMX	4926.108	0	4450	90.4	4650	93	4.32	30	54 - 127
4-Amino-2,6-dinitrotoluene	4926.108	0	5450	111	5320	106	2.38	30	62 - 135
2-Amino-4,6-dinitrotoluene	4926.108	0	5210	106	5050	101	3.15	30	67 - 133
2,4-Dinitrotoluene	4926.108	0	5290	107	4870	97.4	8.28	30	69 - 124
1,3,5-Trinitrobenzene	4926.108	0	4960	101	4930	98.6	.519	30	63 - 121

#Column to be used to flag recovery and RPD values with an asterisk

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CACV-14-49242

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Extract Batch Code: 1376718

Date Extracted: 09-APR-14

GEL Spike ID: 1203060320

GEL SpikeDup ID: 1203060321

Analysis Date/Time: 14-APR-14 20:32

MSD Analysis Date/Time: 14-APR-14 20:48

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec	#	MSD Conc	MSD Rec	#	RPD	#	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	4926.108	0	2190	44.4	*	3510	70.2		46.4	*	30	61 - 133
2,6-Diamino-4-nitrotoluene	4926.108	0	3250	66		4250	85		26.6		30	65 - 119
3,5-Dinitroaniline	4926.108	0	3820	77.6		3930	78.6		2.77		30	61 - 131
TATB	4926.108	0	5240	106		3010	60.2		54.1	*	30	20 - 164
tris(o-cresyl) phosphate	4926.108	0	5130	104		5240	105		2.06		30	70 - 123

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060318

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424013.wiff

Date Analyzed: 24-APR-14 23:42

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060318

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	U	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060318

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140023.wiff

Date Analyzed: 14-APR-14 19:41

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060319

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424014.wiff

Date Analyzed: 25-APR-14 00:17

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	1260		150	500
479-45-8	*Tetryl*				
2691-41-0	HMX	4060		150	500
2691-41-0	*HMX*				
99-35-4	1,3,5-Trinitrobenzene	4410		150	500
99-35-4	*1,3,5-Trinitrobenzene*				
121-82-4	RDX	4580		150	500
121-82-4	*RDX*				
98-95-3	Nitrobenzene	4610		150	500
98-95-3	*Nitrobenzene*				
118-96-7	2,4,6-Trinitrotoluene	4720		150	500
118-96-7	*2,4,6-Trinitrotoluene*				
78-11-5	PETN	4830		250	1000
78-11-5	*PETN*				
88-72-2	o-Nitrotoluene	4960		150	500
88-72-2	*o-Nitrotoluene*				
606-20-2	2,6-Dinitrotoluene	5030		150	500
606-20-2	*2,6-Dinitrotoluene*				
99-99-0	p-Nitrotoluene	5040		150	500
99-99-0	*p-Nitrotoluene*				
99-08-1	m-Nitrotoluene	5070		150	500
99-08-1	*m-Nitrotoluene*				
121-14-2	2,4-Dinitrotoluene	5170		150	500
121-14-2	*2,4-Dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	5230		150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060319

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
19406-51-0	4-Amino-2,6-dinitrotoluene	5250		150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
99-65-0	m-Dinitrobenzene	5280		150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060319

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140024.wiff

Date Analyzed: 14-APR-14 19:58

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	3460		300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	3910		300	1000
618-87-1	*3,5-Dinitroaniline*				
6629-29-4	2,4-Diamino-6-nitrotoluene	4310		500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4590		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5220		300	1000
78-30-8	*tris(o-cresyl) phosphate*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060320

Sample Amount 2.03 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424016.wiff

Date Analyzed: 25-APR-14 01:27

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	3090		148	493
479-45-8	*Tetryl*				
2691-41-0	HMX	4450		148	493
2691-41-0	*HMX*				
99-08-1	m-Nitrotoluene	4520		148	493
99-08-1	*m-Nitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4610		148	493
118-96-7	*2,4,6-Trinitrotoluene*				
78-11-5	PETN	4650		246	985
78-11-5	*PETN*				
88-72-2	o-Nitrotoluene	4670		148	493
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	4770		148	493
98-95-3	*Nitrobenzene*				
99-99-0	p-Nitrotoluene	4780		148	493
99-99-0	*p-Nitrotoluene*				
121-82-4	RDX	4940		148	493
121-82-4	*RDX*				
99-35-4	1,3,5-Trinitrobenzene	4960		148	493
99-35-4	*1,3,5-Trinitrobenzene*				
606-20-2	2,6-Dinitrotoluene	5100		148	493
606-20-2	*2,6-Dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	5210		148	493
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	5290		148	493
121-14-2	*2,4-Dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060320

Sample Amount 2.03 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
19406-51-0	4-Amino-2,6-dinitrotoluene	5450		148	493
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
99-65-0	m-Dinitrobenzene	5760		148	493
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060320

Sample Amount 2.03 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140026.wiff

Date Analyzed: 14-APR-14 20:32

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
6629-29-4	2,4-Diamino-6-nitrotoluene	2190		493	1970
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	3250		650	1970
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
618-87-1	3,5-Dinitroaniline	3820		296	985
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	5130		296	985
78-30-8	*tris(o-cresyl) phosphate*				
3058-38-6	TATB	5240		296	985
3058-38-6	*TATB*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060321

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0424017.wiff

Date Analyzed: 25-APR-14 02:02

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	3860		150	500
479-45-8	*Tetryl*				
98-95-3	Nitrobenzene	4620		150	500
98-95-3	*Nitrobenzene*				
2691-41-0	HMX	4650		150	500
2691-41-0	*HMX*				
99-08-1	m-Nitrotoluene	4650		150	500
99-08-1	*m-Nitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4850		150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4870		150	500
121-14-2	*2,4-Dinitrotoluene*				
99-99-0	p-Nitrotoluene	4880		150	500
99-99-0	*p-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4930		150	500
99-35-4	*1,3,5-Trinitrobenzene*				
88-72-2	o-Nitrotoluene	5000		150	500
88-72-2	*o-Nitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	5050		150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
78-11-5	PETN	5050		250	1000
78-11-5	*PETN*				
606-20-2	2,6-Dinitrotoluene	5090		150	500
606-20-2	*2,6-Dinitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5320		150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060321

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
121-82-4	RDX	5350		150	500
121-82-4	*RDX*				
99-65-0	m-Dinitrobenzene	5570		150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3094

Matrix: SOIL

GEL Sample ID: 1203060321

Sample Amount 2 g

Date Received: 01-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140027.wiff

Date Analyzed: 14-APR-14 20:48

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	3010		300	1000
3058-38-6	*TATB*				
6629-29-4	2,4-Diamino-6-nitrotoluene	3510		500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
618-87-1	3,5-Dinitroaniline	3930		300	1000
618-87-1	*3,5-Dinitroaniline*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4250		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5240		300	1000
78-30-8	*tris(o-cresyl) phosphate*				

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 24-APR-14 16:40

GEL Data File: EXP0424001.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 24-APR-14 17:15

GEL Data File: EXP0424002.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 14-APR-14 13:33

GEL Data File: EXS04140001.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	3.17
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 14-APR-14 13:50

GEL Data File: EXS04140002.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 24-APR-14 21:20

GEL Data File: EXP0424009.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 24-APR-14 22:31

GEL Data File: EXP0424011.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 25-APR-14 06:07

GEL Data File: EXP0424024.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 14-APR-14 16:04

GEL Data File: EXS04140010.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	7.28
TATB	0	0
3,5-Dinitroaniline	0	1.19
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 14-APR-14 16:37

GEL Data File: EXS04140012.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	2.91
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 14-APR-14 18:35

GEL Data File: EXS04140019.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 14-APR-14 19:08

GEL Data File: EXS04140021.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3094

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 14-APR-14 22:45

GEL Data File: EXS04140034.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
26-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LC-MS/MS	SW846 8321A Modified	Solid	LANL
Batch ID:	**Sample Numbers:**		
1376719	See Below		

Potentially affected work order(s)(SDG): 345519(2014-3094),346169(2014-3136)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for MS/MSD, or PS/PSD

Failed Recovery for LCS/LCSD

Specification and Requirements Exception Description:	DER Disposition:
1. The LCS (1203060319) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%.	1. Both the MS (1203060320) and MSD (1203060321) had passing recoveries for Tetryl. The data are reported with the appropriate DER and the discrepancy is noted in the Case Narrative.
2. The MS (1203060320) did not meet acceptance criteria for the recovery of 2,4-Diamino-6-nitrotoluene at 44.4%. The limits are 61-133%.	2. The LCS (1203060319) and MSD (1203060321) had passing recoveries for 2,4-Diamino-6-nitrotoluene. Target analytes were not detected in the parent sample, 345519001 (CACV-14-49242). The non-conforming MS spike recovery is attributed to vagaries in the extraction process. The data are reported with the appropriate DER and the discrepancy is noted in the Case Narrative.
3. The MS/MSD pair (1203060320/1203060321) did not meet RPD acceptance criteria for 2,4-Diamino-6-nitrotoluene at 46.4% and for TATB at 54.1%. The limits are 0-30% for both analytes.	3. TATB had passing spike recoveries in both the MS (1203060320) and MSD (1203060321). The MS (1203060320) had a low recovery of 2,4-Diamino-6-nitrotoluene. The non-conforming RPD recoveries are attributed to vagaries in the extraction process. The data are reported with the appropriate DER and the discrepancies are noted in the Case Narrative.

Originator's Name:

Lynne Russell 26-APR-14

Data Validator/Group Leader:

Michael Penny 28-APR-14

PCB Analysis

Case Narrative

PCB Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3094

Method/Analysis Information

Procedure:	**Analysis of Polychlorinated Biphenyls by ECD**
Analytical Method:	SW846 3541/8082
Prep Method:	SW846 3541
Analytical Batch Number:	1380524
Prep Batch Number:	1380520

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082:

Sample ID	Client ID
345519003	CACV-14-49256
345519004	CACV-14-49257
345519005	CACV-14-49258
345519006	CACV-14-49259
1203069323	Method Blank (MB)
1203069324	345519003(CACV-14-49256) Matrix Spike (MS)
1203069325	345519003(CACV-14-49256) Matrix Spike Duplicate (MSD)
1203069326	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 20.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standards (ICV or CCV) met the acceptance criteria. All analytes were within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for the samples in this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 345519003 (CACV-14-49256) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recoveries for this SDG were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries for this SDG were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns. All sample extracts were cleaned using alumina. Additionally, copper was added to all sample extracts to remove sulfur.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Samples 345519003 (CACV-14-49256), 345519004 (CACV-14-49257), 345519005 (CACV-14-49258) and 345519006 (CACV-14-49259) were re-extracted due to method blank contamination in original extraction batch 1379592. The method blank for the re-extractions was clean of all target analytes. Data for these samples are reported from the re-extractions.

Miscellaneous Information

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for the samples in this SDG in this batch.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

Due to software issue, the surrogate recovery range was not indicated or possibly indicated incorrectly in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Due to rounding differences in the calculation between the forms, the data reported in Sample Summary (form 1) and Spike Recovery Report (form 3) may differ slightly from the data reported in Identification Summary (form 10).

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD9A.I_1	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 1	30m x 0.25mm, 0.25um
ECD9A.I_2	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 2	30m x 0.25mm, 0.20um

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3094 GEL Work Order: 345519

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

B The target analyte was detected in the associated blank.

J Value is estimated

P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Cameron Bearden **Name: Cameron Bearden**

Date: 23 APR 2014 **Title: Group Leader**

Sample Data Summary

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3094**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SO**
Lab Sample ID:	**345519003**	**Date Received:**	**04/01/2014 09:05**	**%Moisture:**	**16.4**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV-14-49256**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380524**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 09:26**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 09:55**	**Aliquot:**	**30.01 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1824.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1824.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.99	ug/kg	1.33	3.99	1
11104-28-2	Aroclor-1221	U	3.99	ug/kg	1.33	3.99	1
11141-16-5	Aroclor-1232	U	3.99	ug/kg	1.33	3.99	1
53469-21-9	Aroclor-1242		7.57	ug/kg	1.33	3.99	2
12672-29-6	Aroclor-1248	U	3.99	ug/kg	1.33	3.99	1
11097-69-1	Aroclor-1254		4.76	ug/kg	1.33	3.99	2
11096-82-5	Aroclor-1260	J	3.52	ug/kg	1.33	3.99	2

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3094**	**Date Collected:**	**03/28/2014 12:40**	**Matrix:**	**SO**
Lab Sample ID:	**345519004**	**Date Received:**	**04/01/2014 09:05**	**%Moisture:**	**5.4**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV-14-49257**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380524**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 10:09**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 09:55**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1827.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1827.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.52	ug/kg	1.17	3.52	1
11104-28-2	Aroclor-1221	U	3.52	ug/kg	1.17	3.52	1
11141-16-5	Aroclor-1232	U	3.52	ug/kg	1.17	3.52	1
53469-21-9	Aroclor-1242	U	3.52	ug/kg	1.17	3.52	1
12672-29-6	Aroclor-1248	U	3.52	ug/kg	1.17	3.52	1
11097-69-1	Aroclor-1254	J	2.16	ug/kg	1.17	3.52	2
11096-82-5	Aroclor-1260	J	1.91	ug/kg	1.17	3.52	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3094**	**Date Collected:**	**03/28/2014 15:00**	**Matrix:**	**SO**
Lab Sample ID:	**345519005**	**Date Received:**	**04/01/2014 09:05**	**%Moisture:**	**4.9**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV-14-49258**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380524**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 10:24**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 09:55**	**Aliquot:**	**30.06 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1828.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1828.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.50	ug/kg	1.16	3.50	1
11104-28-2	Aroclor-1221	U	3.50	ug/kg	1.16	3.50	1
11141-16-5	Aroclor-1232	U	3.50	ug/kg	1.16	3.50	1
53469-21-9	Aroclor-1242	U	3.50	ug/kg	1.16	3.50	1
12672-29-6	Aroclor-1248	U	3.50	ug/kg	1.16	3.50	1
11097-69-1	Aroclor-1254	U	3.50	ug/kg	1.16	3.50	1
11096-82-5	Aroclor-1260	U	3.50	ug/kg	1.16	3.50	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3094**	**Date Collected:**	**03/28/2014 15:20**	**Matrix:**	**SO**
Lab Sample ID:	**345519006**	**Date Received:**	**04/01/2014 09:05**	**%Moisture:**	**7.9**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CACV-14-49259**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380524**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 10:38**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 09:55**	**Aliquot:**	**30.17 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1829.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1829.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.60	ug/kg	1.20	3.60	1
11104-28-2	Aroclor-1221	U	3.60	ug/kg	1.20	3.60	1
11141-16-5	Aroclor-1232	U	3.60	ug/kg	1.20	3.60	1
53469-21-9	Aroclor-1242	U	3.60	ug/kg	1.20	3.60	1
12672-29-6	Aroclor-1248	U	3.60	ug/kg	1.20	3.60	1
11097-69-1	Aroclor-1254		5.93	ug/kg	1.20	3.60	1
11096-82-5	Aroclor-1260		6.18	ug/kg	1.20	3.60	2

Quality Control Summary

PCB

Surrogate Recovery Report

SDG Number: 2014-3094

Matrix Type: SOLID

Sample ID	Client ID	4CMX 1 %REC #	4CMX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #
1203069323	MB for batch 1380520	74	73	89	90
1203069326	LCS for batch 1380520	71	69	87	87
345519003	CACV-14-49256	59	58	72	74
1203069324	CACV-14-49256MS	75	70	85	87
1203069325	CACV-14-49256MSD	73	65	82	83
345519004	CACV-14-49257	73	71	82	81
345519005	CACV-14-49258	74	72	89	85
345519006	CACV-14-49259	69	59	83	81

Surrogate		Acceptance Limits
4CMX	= 4cmx	(44%-106%)
DCB	= Decachlorobiphenyl	(35%-119%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3094**	**Sample Type:**	**Matrix Spike**	
Client ID:	**CACV-14-49256MS**	**Matrix:**	**SO**	
Lab Sample ID	**1203069324**	**%Moisture:**	**16.4**	
Instrument:	**ECD9A.I**	**Analysis Date:**	**04/18/2014 09:40**	**Dilution: 1**
Analyst:	**YS1**	**Prep Batch ID:**	**1380520**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1380524**	

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits
11096-82-5	MS	Aroclor-1260	39.8	3.52	J	36.1	82	28-127
12674-11-2	MS	Aroclor-1016	39.8	0.00	U	30.4	76	25-125

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3094**	**Sample Type:**	**Matrix Spike Duplicate**
Client ID:	**CACV-14-49256MSD**	**Matrix:**	**SO**
Lab Sample ID	**1203069325**	**%Moisture:**	**16.4**
Instrument:	**ECD9A.I**	**Analysis Date:**	**04/18/2014 09:55**
Analyst:	**YS1**	**Prep Batch ID:**	**1380520**
Inj. Vol:	**1 uL**	**Batch ID:**	**1380524**

Dilution: 1

CAS No	Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
11096-82-5	MSD Aroclor-1260	39.8	3.52	J	34.3	77	28-127	5	0-30
12674-11-2	MSD Aroclor-1016	39.8	0.00	U	29.4	74	25-125	4	0-30

PCB

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3094**
Client ID: **LCS for batch 1380520**
Lab Sample ID **1203069326**
Instrument: **ECD9A.I**
Analyst: **YS1**
Inj. Vol: **1 uL**

Sample Type: **Laboratory Control Sample**
Matrix: **SOIL**
Analysis Date: **04/18/2014 09:15**
Prep Batch ID: **1380520**
Batch ID: **1380524**
Dilution: 1

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	LCS	Aroclor-1016	33.3	0.0	23.1	69	39-120
11096-82-5	LCS	Aroclor-1260	33.3	0.0	26.9	81	50-116

Method Blank Summary

SDG Number:	**2014-3094**	**Client:**	**ARSL004**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 1380520**	**Instrument ID:**	**ECD9A.I_1** **ECD9A.I_2**	**Data File:**	**041814.S\E9d1822.D** **041814.S\E9d1822.D**
Lab Sample ID:	**1203069323**				
Column:	**RTX-CLPEST 1** **RTX-CLPEST 2**	**Prep Date:**	**04/17/2014 09:55**	**Analyzed:**	**04/18/14 09:03**

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 1380520	1203069326	041814.S\E9d1823.D 041814.S\E9d1823.D	04/18/14	0915
02 CACV-14-49256	345519003	041814.S\E9d1824.D 041814.S\E9d1824.D	04/18/14	0926
03 CACV-14-49256MS	1203069324	041814.S\E9d1825.D 041814.S\E9d1825.D	04/18/14	0940
04 CACV-14-49256MSD	1203069325	041814.S\E9d1826.D 041814.S\E9d1826.D	04/18/14	0955
05 CACV-14-49257	345519004	041814.S\E9d1827.D 041814.S\E9d1827.D	04/18/14	1009
06 CACV-14-49258	345519005	041814.S\E9d1828.D 041814.S\E9d1828.D	04/18/14	1024
07 CACV-14-49259	345519006	041814.S\E9d1829.D 041814.S\E9d1829.D	04/18/14	1038

Quality Control Data

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3094**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203069323**				
Client Sample:	**QC for batch 1380520**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**MB for batch 1380520**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380524**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 09:03**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 09:55**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1822.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1822.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.33	ug/kg	1.11	3.33	1
11104-28-2	Aroclor-1221	U	3.33	ug/kg	1.11	3.33	1
11141-16-5	Aroclor-1232	U	3.33	ug/kg	1.11	3.33	1
53469-21-9	Aroclor-1242	U	3.33	ug/kg	1.11	3.33	1
12672-29-6	Aroclor-1248	U	3.33	ug/kg	1.11	3.33	1
11097-69-1	Aroclor-1254	U	3.33	ug/kg	1.11	3.33	1
11096-82-5	Aroclor-1260	U	3.33	ug/kg	1.11	3.33	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3094**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SO**
Lab Sample ID:	**1203069324**	**Date Received:**	**04/01/2014 09:05**	**%Moisture:**	**16.4**
Client Sample:	**QC for batch 1380520**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**CACV-14-49256MS**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380524**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 09:40**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 09:55**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1825.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1825.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		30.4	ug/kg	1.33	3.98	1
11104-28-2	Aroclor-1221	U	3.98	ug/kg	1.33	3.98	1
11141-16-5	Aroclor-1232	U	3.98	ug/kg	1.33	3.98	1
53469-21-9	Aroclor-1242		37.5	ug/kg	1.33	3.98	2
12672-29-6	Aroclor-1248	U	3.98	ug/kg	1.33	3.98	1
11097-69-1	Aroclor-1254	P	24.3	ug/kg	1.33	3.98	2
11096-82-5	Aroclor-1260		36.1	ug/kg	1.33	3.98	2

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3094**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SO**
Lab Sample ID:	**1203069325**	**Date Received:**	**04/01/2014 09:05**	**%Moisture:**	**16.4**
Client Sample:	**QC for batch 1380520**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**CACV-14-49256MSD**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380524**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 09:55**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 09:55**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1826.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1826.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		29.4	ug/kg	1.33	3.98	1
11104-28-2	Aroclor-1221	U	3.98	ug/kg	1.33	3.98	1
11141-16-5	Aroclor-1232	U	3.98	ug/kg	1.33	3.98	1
53469-21-9	Aroclor-1242		36.5	ug/kg	1.33	3.98	2
12672-29-6	Aroclor-1248	U	3.98	ug/kg	1.33	3.98	1
11097-69-1	Aroclor-1254	P	22.6	ug/kg	1.33	3.98	2
11096-82-5	Aroclor-1260		34.3	ug/kg	1.33	3.98	2

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3094**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203069326**				
Client Sample:	**QC for batch 1380520**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**LCS for batch 1380520**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380524**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 09:15**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 09:55**	**Aliquot:**	**30.01 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1823.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1823.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		23.1	ug/kg	1.11	3.33	2
11104-28-2	Aroclor-1221	U	3.33	ug/kg	1.11	3.33	1
11141-16-5	Aroclor-1232	U	3.33	ug/kg	1.11	3.33	1
53469-21-9	Aroclor-1242	U	3.33	ug/kg	1.11	3.33	1
12672-29-6	Aroclor-1248	U	3.33	ug/kg	1.11	3.33	1
11097-69-1	Aroclor-1254	U	3.33	ug/kg	1.11	3.33	1
11096-82-5	Aroclor-1260		26.9	ug/kg	1.11	3.33	1

Metals Analysis

Case Narrative

Metals Fractional Narrative
ARS International, LLC (ARSL)
SDG 2014-3094

Sample Analysis

Sample ID	Client ID
345519001	CACV-14-49242
345519002	CACV-14-49243
345519003	CACV-14-49256
345519004	CACV-14-49257
345519005	CACV-14-49258
345519006	CACV-14-49259
345519007	CACV-14-74311
1203060834	Method Blank (MB) **ICP**
1203062358	Method Blank (MB) **ICP**
1203060835	Laboratory Control Sample (LCS)
1203062359	Laboratory Control Sample (LCS)
1203060838	345518015(CALA-14-57276L) Serial Dilution (SD)
1203062362	345787001(CASA-14-57293L) Serial Dilution (SD)
1203060836	345518015(CALA-14-57276D) Sample Duplicate (DUP)
1203062360	345787001(CASA-14-57293D) Sample Duplicate (DUP)
1203060837	345518015(CALA-14-57276S) Matrix Spike (MS)
1203062361	345787001(CASA-14-57293S) Matrix Spike (MS)
1203075709	345787001(CASA-14-57293PS) Post Spike (PS)
1203060839	Method Blank (MB) **ICP-MS**
1203062363	Method Blank (MB) **ICP-MS**
1203060840	Laboratory Control Sample (LCS)
1203062364	Laboratory Control Sample (LCS)
1203060843	345519007(CACV-14-74311L) Serial Dilution (SD)
1203062367	345787001(CASA-14-57293L) Serial Dilution (SD)
1203060841	345519007(CACV-14-74311D) Sample Duplicate (DUP)
1203062365	345787001(CASA-14-57293D) Sample Duplicate (DUP)
1203060842	345519007(CACV-14-74311S) Matrix Spike (MS)
1203062366	345787001(CASA-14-57293S) Matrix Spike (MS)
1203075489	345519007(CACV-14-74311PS) Post Spike (PS)
1203068852	Method Blank (MB) **CVAA**
1203068868	Method Blank (MB) **CVAA**

1203068853	Laboratory Control Sample (LCS)
1203068869	Laboratory Control Sample (LCS)
1203068856	345518015(CALA-14-57276L) Serial Dilution (SD)
1203068872	345519001(CACV-14-49242L) Serial Dilution (SD)
1203068854	345518015(CALA-14-57276D) Sample Duplicate (DUP)
1203068870	345519001(CACV-14-49242D) Sample Duplicate (DUP)
1203068855	345518015(CALA-14-57276S) Matrix Spike (MS)
1203068871	345519001(CACV-14-49242S) Matrix Spike (MS)

Samples 345519 001, 002, 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight" basis. Sample 345519 007 in this SDG was analyzed on an "as received" basis.

Method/Analysis Information

Analytical Batch:	1376944, 1377585, 1376946, 1377587, 1380354 and 1380361
Prep Batch :	1376943, 1377584, 1376945, 1377586, 1380347 and 1380360
Standard Operating Procedures:	GL-MA-E-013 REV# 22, GL-MA-E-006 REV# 10, GL-MA-E-009 REV# 22, GL-MA-E-014 REV# 25 and GL-MA-E-010 REV# 27
Analytical Method:	SW846 3005A/6010C, SW846 3050B/6010C, SW846 3005A/6020A, SW846 3050B/6020A, EPA 245.1/245.2 and SW846 7471A
Prep Method :	SW846 3005A, SW846 3050B, EPA 245.1/245.2 Prep and SW846 7471A Prep

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 6100E inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal

standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL Requirements
The CRDL standard recoveries met the advisory control limits except for copper, potassium, iron, and thallium in the closing standards in files 042214A-1 at 18:00 and 140428-5 at 13:17, respectively. Potassium and copper recovered low, while iron recovered high; however these analyte concentrations for the solid samples in this SDG were greater than two times their PQL. Thallium recovered high in the closing CRDL standard on the MS instrument; however this analyte was not detected above the MDL in client samples.

The CRDL standard recoveries bracketing the aqueous sample in this SDG met the advisory control limits.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 345518015 (CALA-14-57276)-ICP and CVAA, 345787001 (CASA-14-57293)-ICP and ICP-MS, 345519007 (CACV-14-74311)-ICP-MS and 345519001 (CACV-14-49242)-CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS did not meet all the recommended quality control acceptance criteria for percent recoveries for the applicable analytes. The recoveries for aluminum and manganese were not within the acceptance limits in sample 1203062361 (CASA-14-57293)-ICP. The recovery for thallium was not within the acceptance limits in sample 1203060842 (CACV-14-74311)-ICP-MS. See data exception reports (DER ID 1287040 and 1287173) in the miscellaneous data section of this data package.

Duplicate Relative Percent Difference (RPD) Statement
The relative percent difference (RPD) obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the contract required detection limit (RL), a control of +/-RL is used to evaluate the DUP results. Not all applicable analytes met these requirements. The RPD values for aluminum, barium, cobalt, copper, iron, magnesium, manganese, sodium, vanadium, and zinc were not within the acceptance limits in sample 1203062360 (CASA-14-57293)-ICP. See data exception report (DER ID 1287040) in the miscellaneous data section of this data package.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the established acceptance criteria.

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recovery for thallium and verifies the presence of matrix interferences.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG were diluted the standard two times for solids analyzed on the ICPMS..

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. Data exception reports (DER ID 1287173 and 1287040) were generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Pat Steell **Date:** 04/28/2014

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3094 GEL Work Order: 345519

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

J Value is estimated

N Metals--The Matrix spike sample recovery is not within specified control limits

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by Pat Steell 04/28/2014

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3094 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345519001 **BASIS:** Dry Weight **DATE COLLECTED** 28−MAR−14

CLIENT ID: CACV−14−49242 **LEVEL:** Low **DATE RECEIVED** 01−APR−14

MATRIX: SO **%SOLIDS:** 86

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	5070000	ug/kg		7580	22300	22300	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−36−0	Antimony	1110	ug/kg	U	368	1110	1110	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−38−2	Arsenic	2030	ug/kg		206	1030	1030	2	MS	BAJ	04/17/14 17:42	140417−3	1377587
7440−39−3	Barium	349000	ug/kg		111	557	557	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−41−7	Beryllium	572	ug/kg		20.6	103	103	2	MS	BAJ	04/17/14 17:42	140417−3	1377587
7440−43−9	Cadmium	143	ug/kg	J	111	557	557	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−70−2	Calcium	2260000	ug/kg		8910	27900	27900	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−47−3	Chromium	8150	ug/kg		167	557	557	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−48−4	Cobalt	4130	ug/kg		167	557	557	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−50−8	Copper	32500	ug/kg		334	1110	1110	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7439−89−6	Iron	10300000	ug/kg		8910	27900	27900	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7439−92−1	Lead	15400	ug/kg		368	1110	1110	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7439−95−4	Magnesium	940000	ug/kg		9470	33400	33400	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7439−96−5	Manganese	505000	ug/kg		223	1110	1110	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7439−97−6	Mercury	20.6	ug/kg		4.56	13.6	13.6	1	AV	NOR1	04/18/14 14:22	041814S1−8	1380361
7440−02−0	Nickel	83200	ug/kg		103	413	413	2	MS	BAJ	04/17/14 17:42	140417−3	1377587
7440−09−7	Potassium	797000	ug/kg		7130	27900	27900	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7782−49−2	Selenium	1030	ug/kg	U	340	1030	1030	2	MS	BAJ	04/17/14 17:42	140417−3	1377587
7440−22−4	Silver	36300	ug/kg		111	557	557	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−23−5	Sodium	63800	ug/kg		7800	27900	27900	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−28−0	Thallium	179	ug/kg	J	61.9	413	413	2	MS	BAJ	04/17/14 17:42	140417−3	1377587
7440−62−2	Vanadium	16400	ug/kg		111	557	557	1	P	HSC	04/22/14 16:29	042214A−1	1377585
7440−66−6	Zinc	36500	ug/kg		446	1110	1110	1	P	HSC	04/22/14 16:29	042214A−1	1377585

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1377585	1377584	SW846 3050B	0.523	g	50	mL	04/16/14	KXP3
1377587	1377586	SW846 3050B	0.565	g	50	mL	04/16/14	KXP3
1380361	1380360	SW846 7471A Prep	0.514	g	30	mL	04/16/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3094 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345519002 **BASIS:** Dry Weight **DATE COLLECTED** 28−MAR−14

CLIENT ID: CACV−14−49243 **LEVEL:** Low **DATE RECEIVED** 01−APR−14

MATRIX: SO **%SOLIDS:** 93.1

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2490000	ug/kg		7020	20600	20600	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−36−0	Antimony	1030	ug/kg	U	341	1030	1030	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−38−2	Arsenic	1880	ug/kg		187	937	937	2	MS	BAJ	04/17/14 17:48	140417−3	1377587
7440−39−3	Barium	139000	ug/kg		103	516	516	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−41−7	Beryllium	391	ug/kg		18.7	93.7	93.7	2	MS	BAJ	04/17/14 17:48	140417−3	1377587
7440−43−9	Cadmium	516	ug/kg	U	103	516	516	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−70−2	Calcium	751000	ug/kg		8260	25800	25800	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−47−3	Chromium	4350	ug/kg		155	516	516	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−48−4	Cobalt	2980	ug/kg		155	516	516	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−50−8	Copper	11900	ug/kg		310	1030	1030	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7439−89−6	Iron	8160000	ug/kg		8260	25800	25800	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7439−92−1	Lead	8820	ug/kg		341	1030	1030	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7439−95−4	Magnesium	467000	ug/kg		8770	31000	31000	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7439−96−5	Manganese	331000	ug/kg		206	1030	1030	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7439−97−6	Mercury	6.73	ug/kg	J	4.26	12.7	12.7	1	AV	NOR1	04/18/14 14:30	041814S1−8	1380361
7440−02−0	Nickel	46800	ug/kg		93.7	375	375	2	MS	BAJ	04/17/14 17:48	140417−3	1377587
7440−09−7	Potassium	393000	ug/kg		6610	25800	25800	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7782−49−2	Selenium	937	ug/kg	U	309	937	937	2	MS	BAJ	04/17/14 17:48	140417−3	1377587
7440−22−4	Silver	5020	ug/kg		103	516	516	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−23−5	Sodium	55700	ug/kg		7230	25800	25800	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−28−0	Thallium	82.4	ug/kg	J	56.2	375	375	2	MS	BAJ	04/17/14 17:48	140417−3	1377587
7440−62−2	Vanadium	11300	ug/kg		103	516	516	1	P	HSC	04/22/14 16:32	042214A−1	1377585
7440−66−6	Zinc	24500	ug/kg		413	1030	1030	1	P	HSC	04/22/14 16:32	042214A−1	1377585

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1377585	1377584	SW846 3050B	0.52	g	50	mL	04/16/14	KXP3
1377587	1377586	SW846 3050B	0.573	g	50	mL	04/16/14	KXP3
1380361	1380360	SW846 7471A Prep	0.507	g	30	mL	04/16/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3094 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345519003 **BASIS:** Dry Weight **DATE COLLECTED** 28−MAR−14

CLIENT ID: CACV−14−49256 **LEVEL:** Low **DATE RECEIVED** 01−APR−14

MATRIX: SO **%SOLIDS:** 84

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	4410000	ug/kg		7930	23300	23300	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−36−0	Antimony	1170	ug/kg	U	385	1170	1170	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−38−2	Arsenic	1500	ug/kg		224	1120	1120	2	MS	BAJ	04/17/14 17:55	140417−3	1377587
7440−39−3	Barium	1020000	ug/kg		117	583	583	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−41−7	Beryllium	479	ug/kg		22.4	112	112	2	MS	BAJ	04/17/14 17:55	140417−3	1377587
7440−43−9	Cadmium	143	ug/kg	J	117	583	583	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−70−2	Calcium	1920000	ug/kg		9330	29100	29100	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−47−3	Chromium	5860	ug/kg		175	583	583	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−48−4	Cobalt	3110	ug/kg		175	583	583	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−50−8	Copper	13000	ug/kg		350	1170	1170	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7439−89−6	Iron	9510000	ug/kg		9330	29100	29100	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7439−92−1	Lead	17400	ug/kg		385	1170	1170	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7439−95−4	Magnesium	817000	ug/kg		9910	35000	35000	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7439−96−5	Manganese	452000	ug/kg		233	1170	1170	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7439−97−6	Mercury	15	ug/kg		4.72	14.1	14.1	1	AV	NOR1	04/18/14 14:32	041814S1−8	1380361
7440−02−0	Nickel	10800	ug/kg		112	448	448	2	MS	BAJ	04/17/14 17:55	140417−3	1377587
7440−09−7	Potassium	794000	ug/kg		7460	29100	29100	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7782−49−2	Selenium	1120	ug/kg	U	370	1120	1120	2	MS	BAJ	04/17/14 17:55	140417−3	1377587
7440−22−4	Silver	2350	ug/kg		117	583	583	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−23−5	Sodium	62900	ug/kg		8160	29100	29100	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−28−0	Thallium	130	ug/kg	J	67.2	448	448	2	MS	BAJ	04/17/14 17:55	140417−3	1377587
7440−62−2	Vanadium	15300	ug/kg		117	583	583	1	P	HSC	04/22/14 16:35	042214A−1	1377585
7440−66−6	Zinc	38900	ug/kg		466	1170	1170	1	P	HSC	04/22/14 16:35	042214A−1	1377585

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1377585	1377584	SW846 3050B	0.513	g	50	mL	04/16/14	KXP3
1377587	1377586	SW846 3050B	0.534	g	50	mL	04/16/14	KXP3
1380361	1380360	SW846 7471A Prep	0.509	g	30	mL	04/16/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3094 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345519004 **BASIS:** Dry Weight **DATE COLLECTED** 28−MAR−14

CLIENT ID: CACV−14−49257 **LEVEL:** Low **DATE RECEIVED** 01−APR−14

MATRIX: SO **%SOLIDS:** 94.6

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2350000	ug/kg		6870	20200	20200	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−36−0	Antimony	1010	ug/kg	U	334	1010	1010	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−38−2	Arsenic	1150	ug/kg		204	1020	1020	2	MS	BAJ	04/17/14 18:01	140417−3	1377587
7440−39−3	Barium	468000	ug/kg		101	505	505	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−41−7	Beryllium	247	ug/kg		20.4	102	102	2	MS	BAJ	04/17/14 18:01	140417−3	1377587
7440−43−9	Cadmium	505	ug/kg	U	101	505	505	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−70−2	Calcium	1040000	ug/kg		8090	25300	25300	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−47−3	Chromium	3830	ug/kg		152	505	505	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−48−4	Cobalt	1960	ug/kg		152	505	505	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−50−8	Copper	5260	ug/kg		303	1010	1010	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7439−89−6	Iron	7600000	ug/kg		8090	25300	25300	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7439−92−1	Lead	9530	ug/kg		334	1010	1010	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7439−95−4	Magnesium	521000	ug/kg		8590	30300	30300	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7439−96−5	Manganese	237000	ug/kg		202	1010	1010	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7439−97−6	Mercury	5.54	ug/kg	J	3.83	11.4	11.4	1	AV	NOR1	04/18/14 14:34	041814S1−8	1380361
7440−02−0	Nickel	4260	ug/kg		102	407	407	2	MS	BAJ	04/17/14 18:01	140417−3	1377587
7440−09−7	Potassium	391000	ug/kg		6470	25300	25300	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7782−49−2	Selenium	1020	ug/kg	U	336	1020	1020	2	MS	BAJ	04/17/14 18:01	140417−3	1377587
7440−22−4	Silver	748	ug/kg		101	505	505	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−23−5	Sodium	57500	ug/kg		7070	25300	25300	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−28−0	Thallium	407	ug/kg	U	61.1	407	407	2	MS	BAJ	04/17/14 18:01	140417−3	1377587
7440−62−2	Vanadium	11200	ug/kg		101	505	505	1	P	HSC	04/22/14 16:39	042214A−1	1377585
7440−66−6	Zinc	26600	ug/kg		404	1010	1010	1	P	HSC	04/22/14 16:39	042214A−1	1377585

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1377585	1377584	SW846 3050B	0.523	g	50	mL	04/16/14	KXP3
1377587	1377586	SW846 3050B	0.519	g	50	mL	04/16/14	KXP3
1380361	1380360	SW846 7471A Prep	0.555	g	30	mL	04/16/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3094 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345519005 **BASIS:** Dry Weight **DATE COLLECTED** 28−MAR−14

CLIENT ID: CACV−14−49258 **LEVEL:** Low **DATE RECEIVED** 01−APR−14

MATRIX: SO **%SOLIDS:** 95.1

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	1880000	ug/kg		6860	20200	20200	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−36−0	Antimony	1010	ug/kg	U	333	1010	1010	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−38−2	Arsenic	798	ug/kg	J	185	924	924	2	MS	BAJ	04/17/14 18:08	140417−3	1377587
7440−39−3	Barium	327000	ug/kg		101	505	505	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−41−7	Beryllium	227	ug/kg		18.5	92.4	92.4	2	MS	BAJ	04/17/14 18:08	140417−3	1377587
7440−43−9	Cadmium	505	ug/kg	U	101	505	505	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−70−2	Calcium	510000	ug/kg		8070	25200	25200	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−47−3	Chromium	3190	ug/kg		151	505	505	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−48−4	Cobalt	1590	ug/kg		151	505	505	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−50−8	Copper	2770	ug/kg		303	1010	1010	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7439−89−6	Iron	10800000	ug/kg		8070	25200	25200	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7439−92−1	Lead	7210	ug/kg		333	1010	1010	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7439−95−4	Magnesium	377000	ug/kg		8580	30300	30300	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7439−96−5	Manganese	253000	ug/kg		202	1010	1010	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7439−97−6	Mercury	11.7	ug/kg	U	3.91	11.7	11.7	1	AV	NOR1	04/18/14 14:35	041814S1−8	1380361
7440−02−0	Nickel	2870	ug/kg		92.4	370	370	2	MS	BAJ	04/17/14 18:08	140417−3	1377587
7440−09−7	Potassium	307000	ug/kg		6460	25200	25200	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7782−49−2	Selenium	924	ug/kg	U	305	924	924	2	MS	BAJ	04/17/14 18:08	140417−3	1377587
7440−22−4	Silver	505	ug/kg	U	101	505	505	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−23−5	Sodium	48300	ug/kg		7060	25200	25200	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−28−0	Thallium	370	ug/kg	U	55.4	370	370	2	MS	BAJ	04/17/14 18:08	140417−3	1377587
7440−62−2	Vanadium	11700	ug/kg		101	505	505	1	P	HSC	04/22/14 16:42	042214A−1	1377585
7440−66−6	Zinc	44900	ug/kg		404	1010	1010	1	P	HSC	04/22/14 16:42	042214A−1	1377585

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1377585	1377584	SW846 3050B	0.521	g	50	mL	04/16/14	KXP3
1377587	1377586	SW846 3050B	0.569	g	50	mL	04/16/14	KXP3
1380361	1380360	SW846 7471A Prep	0.541	g	30	mL	04/16/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3094 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345519006 **BASIS:** Dry Weight **DATE COLLECTED** 28−MAR−14

CLIENT ID: CACV−14−49259 **LEVEL:** Low **DATE RECEIVED** 01−APR−14

MATRIX: SO **%SOLIDS:** 92.1

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	3050000	ug/kg		6370	18700	18700	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−36−0	Antimony	937	ug/kg	U	309	937	937	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−38−2	Arsenic	1060	ug/kg		205	1030	1030	2	MS	BAJ	04/17/14 18:15	140417−3	1377587
7440−39−3	Barium	534000	ug/kg		93.7	469	469	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−41−7	Beryllium	335	ug/kg		20.5	103	103	2	MS	BAJ	04/17/14 18:15	140417−3	1377587
7440−43−9	Cadmium	469	ug/kg	U	93.7	469	469	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−70−2	Calcium	823000	ug/kg		7500	23400	23400	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−47−3	Chromium	3550	ug/kg		141	469	469	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−48−4	Cobalt	1730	ug/kg		141	469	469	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−50−8	Copper	6140	ug/kg		281	937	937	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7439−89−6	Iron	9070000	ug/kg		7500	23400	23400	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7439−92−1	Lead	10100	ug/kg		309	937	937	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7439−95−4	Magnesium	569000	ug/kg		7970	28100	28100	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7439−96−5	Manganese	258000	ug/kg		187	937	937	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7439−97−6	Mercury	11.8	ug/kg	J	4.2	12.5	12.5	1	AV	NOR1	04/18/14 14:40	041814S1−8	1380361
7440−02−0	Nickel	3690	ug/kg		103	410	410	2	MS	BAJ	04/17/14 18:15	140417−3	1377587
7440−09−7	Potassium	495000	ug/kg		6000	23400	23400	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7782−49−2	Selenium	1030	ug/kg	U	339	1030	1030	2	MS	BAJ	04/17/14 18:15	140417−3	1377587
7440−22−4	Silver	584	ug/kg		93.7	469	469	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−23−5	Sodium	61900	ug/kg		6560	23400	23400	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−28−0	Thallium	94.2	ug/kg	J	61.6	410	410	2	MS	BAJ	04/17/14 18:15	140417−3	1377587
7440−62−2	Vanadium	10300	ug/kg		93.7	469	469	1	P	HSC	04/22/14 16:45	042214A−1	1377585
7440−66−6	Zinc	37500	ug/kg		375	937	937	1	P	HSC	04/22/14 16:45	042214A−1	1377585

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1377585	1377584	SW846 3050B	0.579	g	50	mL	04/16/14	KXP3
1377587	1377586	SW846 3050B	0.529	g	50	mL	04/16/14	KXP3
1380361	1380360	SW846 7471A Prep	0.519	g	30	mL	04/16/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3094 **CONTRACT:** LANL00114 **METHOD TYPE:** EPA

SAMPLE ID: 345519007 **BASIS:** As Received **DATE COLLECTED** 28−MAR−14

CLIENT ID: CACV−14−74311 **LEVEL:** Low **DATE RECEIVED** 01−APR−14

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7439−97−6	Mercury	0.20	ug/L	U	0.067	0.2	0.2	1	AV	BCD1	04/17/14 22:53	041714W2−7	1380354

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3094 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 345519007 **BASIS:** As Received **DATE COLLECTED** 28−MAR−14

CLIENT ID: CACV−14−74311 **LEVEL:** Low **DATE RECEIVED** 01−APR−14

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	200	ug/L	U	68	200	200	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7440−36−0	Antimony	3	ug/L	U	1	3	3	1	MS	PRB	04/25/14 23:32	140424−4	1376946
7440−38−2	Arsenic	5	ug/L	U	1.7	5	5	1	MS	SKJ	04/25/14 08:26	140424−6	1376946
7440−39−3	Barium	2.68	ug/L	J	1	5	5	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7440−41−7	Beryllium	5	ug/L	U	1	5	5	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7440−43−9	Cadmium	1	ug/L	U	0.11	1	1	1	MS	SKJ	04/25/14 08:26	140424−6	1376946
7440−70−2	Calcium	200	ug/L	U	50	200	200	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7440−47−3	Chromium	10	ug/L	U	2	10	10	1	MS	SKJ	04/25/14 08:26	140424−6	1376946
7440−48−4	Cobalt	5	ug/L	U	1	5	5	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7440−50−8	Copper	10	ug/L	U	3	10	10	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7439−89−6	Iron	38.6	ug/L	J	30	100	100	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7439−92−1	Lead	2	ug/L	U	0.5	2	2	1	MS	SKJ	04/25/14 08:26	140424−6	1376946
7439−95−4	Magnesium	300	ug/L	U	110	300	300	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7439−96−5	Manganese	3.01	ug/L	J	2	10	10	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7440−02−0	Nickel	2	ug/L	U	0.5	2	2	1	MS	PRB	04/28/14 12:56	140428−5	1376946
7440−09−7	Potassium	150	ug/L	U	50	150	150	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7782−49−2	Selenium	5	ug/L	U	1.5	5	5	1	MS	SKJ	04/25/14 08:26	140424−6	1376946
7440−22−4	Silver	1	ug/L	U	0.2	1	1	1	MS	SKJ	04/25/14 08:26	140424−6	1376946
7440−23−5	Sodium	325	ug/L		100	300	300	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7440−28−0	Thallium	2	ug/L	UN	0.45	2	2	1	MS	PRB	04/28/14 12:56	140428−5	1376946
7440−62−2	Vanadium	5	ug/L	U	1	5	5	1	P	HSC	04/22/14 13:50	042214A−1	1376944
7440−66−6	Zinc	10	ug/L	U	3.3	10	10	1	P	HSC	04/22/14 13:50	042214A−1	1376944

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1376944	1376943	SW846 3005A	50	mL	50	mL	04/16/14	KXP3
1376946	1376945	SW846 3005A	50	mL	50	mL	04/16/14	KXP3
1380354	1380347	EPA 245.1/245.2 Prep	20	mL	20	mL	04/16/14	AXS5

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**
AV	**EPA 245.1/245.2**

Quality Control Summary

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−3094

Contract: LANL00114

Matrix: SO

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1203060834								
	Aluminum	68	ug/L	+/−200	U	P	68	200
	Barium	1	ug/L	+/−5	U	P	1	5
	Beryllium	1	ug/L	+/−5	U	P	1	5
	Calcium	50	ug/L	+/−200	U	P	50	200
	Magnesium	110	ug/L	+/−300	U	P	110	300
	Potassium	50	ug/L	+/−150	U	P	50	150
	Vanadium	1	ug/L	+/−5	U	P	1	5
	Zinc	3.3	ug/L	+/−10	U	P	3.3	10
	Sodium	100	ug/L	+/−300	U	P	100	300
	Manganese	2	ug/L	+/−10	U	P	2	10
	Iron	30	ug/L	+/−100	U	P	30	100
	Copper	3	ug/L	+/−10	U	P	3	10
	Cobalt	1	ug/L	+/−5	U	P	1	5
1203060839								
	Thallium	0.45	ug/L	+/−2	U	MS	0.45	2
	Silver	0.2	ug/L	+/−1	U	MS	0.2	1
	Selenium	1.5	ug/L	+/−5	U	MS	1.5	5
	Nickel	0.5	ug/L	+/−2	U	MS	0.5	2
	Lead	0.5	ug/L	+/−2	U	MS	0.5	2
	Chromium	2	ug/L	+/−10	U	MS	2	10
	Cadmium	0.11	ug/L	+/−1	U	MS	0.11	1
	Arsenic	1.7	ug/L	+/−5	U	MS	1.7	5
	Antimony	1	ug/L	+/−3	U	MS	1	3
1203062358								
	Aluminum	6600	ug/kg	+/−19400	U	P	6600	19400
	Antimony	320	ug/kg	+/−971	U	P	320	971
	Barium	97.1	ug/kg	+/−485	U	P	97.1	485
	Cadmium	97.1	ug/kg	+/−485	U	P	97.1	485
	Iron	7770	ug/kg	+/−24300	U	P	7770	24300
	Magnesium	8250	ug/kg	+/−29100	U	P	8250	29100
	Potassium	6210	ug/kg	+/−24300	U	P	6210	24300
	Sodium	6800	ug/kg	+/−24300	U	P	6800	24300
	Zinc	388	ug/kg	+/−971	U	P	388	971
	Vanadium	97.1	ug/kg	+/−485	U	P	97.1	485
	Silver	97.1	ug/kg	+/−485	U	P	97.1	485
	Manganese	194	ug/kg	+/−971	U	P	194	971
	Lead	320	ug/kg	+/−971	U	P	320	971

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−3094

Contract: LANL00114

Matrix: SO

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
	Calcium	7770	ug/kg	+/−24300	U	P	7770	24300
	Chromium	146	ug/kg	+/−485	U	P	146	485
	Cobalt	146	ug/kg	+/−485	U	P	146	485
	Copper	291	ug/kg	+/−971	U	P	291	971
1203062363								
	Arsenic	197	ug/kg	+/−986	U	MS	197	986
	Beryllium	19.7	ug/kg	+/−98.6	U	MS	19.7	98.6
	Nickel	98.6	ug/kg	+/−394	U	MS	98.6	394
	Selenium	325	ug/kg	+/−986	U	MS	325	986
	Thallium	59.2	ug/kg	+/−394	U	MS	59.2	394
1203068852								
	Mercury	0.067	ug/L	+/−0.2	U	AV	0.067	0.2
1203068868								
	Mercury	4.02	ug/kg	+/−12	U	AV	4.02	12

***Analytical Methods:**

P	**SW846 3005A/6010C**
P	**SW846 3050B/6010C**
MS	**SW846 3005A/6020A**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**
AV	**EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3094 **Client ID** CALA−14−57276S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 345518015 **Spike ID:** 1203060837

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	75−125	5090		68	U	5000	101		P
Barium	ug/L	75−125	513		1	U	500	102		P
Beryllium	ug/L	75−125	512		1	U	500	102		P
Calcium	ug/L	75−125	5030		50	U	5000	99.8		P
Cobalt	ug/L	75−125	503		1	U	500	101		P
Copper	ug/L	75−125	512		3	U	500	102		P
Iron	ug/L	75−125	5310		30	U	5000	106		P
Magnesium	ug/L	75−125	5250		110	U	5000	105		P
Manganese	ug/L	75−125	499		2.29	J	500	99.3		P
Potassium	ug/L	75−125	5230		50	U	5000	105		P
Sodium	ug/L	75−125	5650		193	J	5000	109		P
Vanadium	ug/L	75−125	521		1	U	500	104		P
Zinc	ug/L	75−125	489		3.3	U	500	97.4		P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3094 **Client ID** CACV−14−74311S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 345519007 **Spike ID:** 1203060842

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Antimony	ug/L	75−125	46.7		1	U	50	93.3		MS
Arsenic	ug/L	75−125	48.5		1.7	U	50	96.3		MS
Cadmium	ug/L	75−125	50.7		0.11	U	50	101		MS
Chromium	ug/L	75−125	53		2	U	50	103		MS
Lead	ug/L	75−125	49.5		0.5	U	50	98.7		MS
Nickel	ug/L	75−125	51.2		0.5	U	50	102		MS
Selenium	ug/L	75−125	50.6		1.5	U	50	101		MS
Silver	ug/L	75−125	52.4		0.2	U	50	105		MS
Thallium	ug/L	75−125	22		0.45	U	50	44	N	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3094 **Client ID** CASA−14−57293S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 97.4

Sample ID: 345787001 **Spike ID:** 1203062361

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Vanadium	ug/kg	75−125	60300		13800		49500	93.9		P
Zinc	ug/kg	75−125	59200		13300		49500	92.7		P
Aluminum	ug/kg	75−125	3020000		1850000		495000	238	N	P
Antimony	ug/kg	75−125	44400		336	U	49500	89.6		P
Barium	ug/kg	75−125	73600		24700		49500	98.6		P
Cadmium	ug/kg	75−125	48200		102	U	49500	97.3		P
Calcium	ug/kg		3440000		2580000		495000	173	N/A	P
Chromium	ug/kg	75−125	52700		5620		49500	95		P
Cobalt	ug/kg	75−125	48800		3280		49500	91.9		P
Copper	ug/kg	75−125	54200		5240		49500	98.8		P
Iron	ug/kg		5810000		6820000		495000	−205	N/A	P
Lead	ug/kg	75−125	51200		1740		49500	99.9		P
Magnesium	ug/kg		2050000		2420000		495000	−73.8	N/A	P
Manganese	ug/kg	75−125	155000		141000		49500	28.4	N	P
Potassium	ug/kg	75−125	801000		286000		495000	104		P
Silver	ug/kg	75−125	48900		102	U	49500	98.8		P
Sodium	ug/kg	75−125	705000		118000		495000	119		P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3094 **Client ID** CASA−14−57293S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 97.4

Sample ID: 345787001 **Spike ID:** 1203062366

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Arsenic	ug/kg	75−125	5200		336	J	4900	99.4		MS
Beryllium	ug/kg	75−125	4750		185		4900	93.2		MS
Nickel	ug/kg	75−125	15900		11600		4900	87.6		MS
Selenium	ug/kg	75−125	4590		339	U	4900	92.5		MS
Thallium	ug/kg	75−125	5100		61.6	U	4900	104		MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3094 **Client ID** CALA−14−57276S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 345518015 **Spike ID:** 1203068855

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75−125	2.11		0.067	U	2	104		AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3094 **Client ID** CACV−14−49242S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 86

Sample ID: 345519001 **Spike ID:** 1203068871

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/kg	80−120	151		20.6		137	95.7		AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3094 **Client ID** CACV−14−74311PS

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 345519007 **Spike ID:** 1203075489

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Thallium	ug/L	80−120	25.1		0.45	U	50	50.2	N	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3094 **Client ID** CASA−14−57293PS

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 97.4

Sample ID: 345787001 **Spike ID:** 1203075709

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	80−120	22900		18100		5000	95.8		P
Manganese	ug/L	80−120	1860		1390		500	94.7		P

***Analytical Methods:**

P **SW846 3050B/6010C**

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3094 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CALA−14−57276D

Matrix: WATER **Level:** Low

Sample ID: 345518015 **Duplicate ID:** 1203060836 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/L		68	U	68	U			P
Barium	ug/L		1	U	1	U			P
Beryllium	ug/L		1	U	1	U			P
Calcium	ug/L		50	U	50	U			P
Cobalt	ug/L		1	U	1	U			P
Copper	ug/L		3	U	3	U			P
Iron	ug/L		30	U	30	U			P
Magnesium	ug/L		110	U	110	U			P
Manganese	ug/L		2.29	J	2	U	200		P
Potassium	ug/L		50	U	50	U			P
Sodium	ug/L	+/−300	193	J	185	J	4.46		P
Vanadium	ug/L		1	U	1	U			P
Zinc	ug/L		3.3	U	3.3	U			P

***Analytical Methods:**

P SW846 3005A/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3094 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACV−14−74311D

Matrix: WATER **Level:** Low

Sample ID: 345519007 **Duplicate ID:** 1203060841 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		1	U	1	U			MS
Arsenic	ug/L		1.7	U	1.7	U			MS
Cadmium	ug/L		0.11	U	0.11	U			MS
Chromium	ug/L		2	U	2	U			MS
Lead	ug/L		0.5	U	0.5	U			MS
Nickel	ug/L		0.5	U	0.5	U			MS
Selenium	ug/L		1.5	U	1.5	U			MS
Silver	ug/L		0.2	U	0.2	U			MS
Thallium	ug/L		0.45	U	0.45	U			MS

***Analytical Methods:**

MS SW846 3005A/6020A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3094 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CASA−14−57293D

Matrix: SOIL **Level:** Low

Sample ID: 345787001 **Duplicate ID:** 1203062360 **Percent Solids for Dup:** 97.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/kg	+/−20%	1850000		2520000		30.6	*	P
Antimony	ug/kg		336	U	331	U			P
Barium	ug/kg	+/−20%	24700		38200		42.9	*	P
Cadmium	ug/kg		102	U	100	U			P
Calcium	ug/kg	+/−20%	2580000		2800000		8.08		P
Chromium	ug/kg	+/−20%	5620		6800		18.9		P
Cobalt	ug/kg	+/−20%	3280		4100		22.3	*	P
Copper	ug/kg	+/−20%	5240		7270		32.4	*	P
Iron	ug/kg	+/−20%	6820000		8570000		22.7	*	P
Lead	ug/kg	+/−1000	1740		1210		36		P
Magnesium	ug/kg	+/−20%	2420000		3230000		28.9	*	P
Manganese	ug/kg	+/−20%	141000		178000		23.1	*	P
Potassium	ug/kg	+/−20%	286000		269000		6.06		P
Silver	ug/kg		102	U	100	U			P
Sodium	ug/kg	+/−25100	118000		150000		23.8	*	P
Vanadium	ug/kg	+/−20%	13800		18600		29.6	*	P
Zinc	ug/kg	+/−20%	13300		16900		24.2	*	P

***Analytical Methods:**

P SW846 3050B/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3094 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CASA−14−57293D

Matrix: SOIL **Level:** Low

Sample ID: 345787001 **Duplicate ID:** 1203062365 **Percent Solids for Dup:** 97.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Arsenic	ug/kg	+/−1010	336	J	393	J	15.6		MS
Beryllium	ug/kg	+/−101	185		198		6.84		MS
Nickel	ug/kg	+/−20%	11600		10500		10.2		MS
Selenium	ug/kg		339	U	333	U			MS
Thallium	ug/kg		61.6	U	60.5	U			MS

***Analytical Methods:**

MS SW846 3050B/6020A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3094 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CALA−14−57276D

Matrix: WATER **Level:** Low

Sample ID: 345518015 **Duplicate ID:** 1203068854 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.067	U	0.067	U			AV

***Analytical Methods:**

AV EPA 245.1/245.2

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3094 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACV−14−49242D

Matrix: SOIL **Level:** Low

Sample ID: 345519001 **Duplicate ID:** 1203068870 **Percent Solids for Dup:** 86

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/kg	+/−13.8	20.6		18.9		8.88		AV

***Analytical Methods:**

AV SW846 7471A

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3094

Contract: LANL00114

Aqueous LCS Source: OS2I **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203060835								
	Aluminum	ug/L	5000	4920		98.5	80−120	P
	Barium	ug/L	500	505		101	80−120	P
	Beryllium	ug/L	500	509		102	80−120	P
	Calcium	ug/L	5000	4890		97.7	80−120	P
	Cobalt	ug/L	500	498		99.6	80−120	P
	Copper	ug/L	500	510		102	80−120	P
	Iron	ug/L	5000	5230		105	80−120	P
	Magnesium	ug/L	5000	5120		102	80−120	P
	Manganese	ug/L	500	498		99.6	80−120	P
	Potassium	ug/L	5000	5080		102	80−120	P
	Sodium	ug/L	5000	5380		108	80−120	P
	Vanadium	ug/L	500	519		104	80−120	P
	Zinc	ug/L	500	498		99.6	80−120	P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3094

Contract: LANL00114

Aqueous LCS Source: O2Si **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203060840								
	Antimony	ug/L	50	47.2		94.4	80−120	MS
	Arsenic	ug/L	50	51.7		103	80−120	MS
	Cadmium	ug/L	50	52.7		105	80−120	MS
	Chromium	ug/L	50	53		106	80−120	MS
	Lead	ug/L	50	49.5		99	80−120	MS
	Nickel	ug/L	50	52.2		104	80−120	MS
	Selenium	ug/L	50	55.4		111	80−120	MS
	Silver	ug/L	50	51.8		104	80−120	MS
	Thallium	ug/L	50	41.8		83.6	80−120	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3094

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203062359								
	Aluminum	ug/kg	8680000	5910000		68.1	44.9−154.4	P
	Antimony	ug/kg	166000	148000		89.1	33.1−167.3	P
	Barium	ug/kg	290000	271000		93.3	82.8−117.6	P
	Cadmium	ug/kg	85000	79400		93.4	84−115.9	P
	Calcium	ug/kg	6120000	5660000		92.5	83.2−117	P
	Chromium	ug/kg	168000	159000		94.5	81.5−117.9	P
	Cobalt	ug/kg	87000	82900		95.2	84.8−114.9	P
	Copper	ug/kg	187000	188000		101	84−116.6	P
	Iron	ug/kg	12500000	12300000		98.6	50.5−148.8	P
	Lead	ug/kg	120000	114000		95.3	83.3−116.7	P
	Magnesium	ug/kg	2920000	2580000		88.2	75−125.3	P
	Manganese	ug/kg	310000	283000		91.3	82.6−117.4	P
	Potassium	ug/kg	2780000	2210000		79.6	69.1−130.9	P
	Silver	ug/kg	55200	55300		100	66.3−133.7	P
	Sodium	ug/kg	504000	486000		96.4	73.6−126.4	P
	Vanadium	ug/kg	138000	135000		97.8	79.7−120.3	P
	Zinc	ug/kg	206000	186000		90.4	82−118	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3094

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203062364								
	Arsenic	ug/kg	137000	141000		103	83.2−117.5	MS
	Beryllium	ug/kg	138000	138000		99.9	84.1−115.9	MS
	Nickel	ug/kg	159000	170000		107	84.3−115.7	MS
	Selenium	ug/kg	43500	46200		106	77.9−122.3	MS
	Thallium	ug/kg	146000	166000		114	81.5−119.2	MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3094

Contract: LANL00114

Aqueous LCS Source: GEL **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203068853								
	Mercury	ug/L	2	2.06		103	85−115	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3094

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203068869								
	Mercury	ug/kg	7690	7200		93.6	71.4−129	AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3094 **Client ID** CALA−14−57276L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 345518015 **Serial Dilution ID:** 1203060838

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	68	U	340	U				P
Barium	1	U	5	U				P
Beryllium	1	U	5	U				P
Calcium	50	U	250	U				P
Cobalt	1	U	5	U				P
Copper	3	U	15	U				P
Iron	30	U	150	U				P
Magnesium	110	U	550	U				P
Manganese	2.29	J	10	U	100			P
Potassium	50	U	250	U				P
Sodium	193	J	500	U	100			P
Vanadium	1	U	5	U				P
Zinc	3.3	U	16.5	U				P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3094 **Client ID** CACV−14−74311L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 345519007 **Serial Dilution ID:** 1203060843

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	1	U	5	U				MS
Arsenic	1.7	U	8.5	U				MS
Cadmium	.11	U	.55	U				MS
Chromium	2	U	10	U				MS
Lead	.5	U	2.5	U				MS
Nickel	.5	U	2.5	U				MS
Selenium	1.5	U	7.5	U				MS
Silver	.2	U	1	U				MS
Thallium	.45	U	11.4					MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3094 **Client ID** CASA−14−57293L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 345787001 **Serial Dilution ID:** 1203062362

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	18100		18300		.7		10	P
Antimony	3.3	U	16.5	U				P
Barium	243		235		3.36		10	P
Cadmium	1	U	5	U				P
Calcium	25400		25800		1.57		10	P
Chromium	55.2		53		4.03			P
Cobalt	32.2		31.7		1.65			P
Copper	51.5		35.7	J	30.6			P
Iron	67000		69300		3.36		10	P
Lead	17.1		20.5	J	20.1			P
Magnesium	23800		24100		1.64		10	P
Manganese	1390		1450		4.59		10	P
Potassium	2810		2750		2.01			P
Silver	1	U	5	U				P
Sodium	1160		1370		18.6			P
Vanadium	136		135		.406		10	P
Zinc	130		179		37.2			P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3094 **Client ID** CASA−14−57293L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 345787001 **Serial Dilution ID:** 1203062367

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Arsenic	1.64	J	5	U	100			MS
Beryllium	.899		1.15	J	27.9			MS
Nickel	56.4		61.7		9.46		10	MS
Selenium	1.65	U	8.25	U				MS
Thallium	.3	U	1.5	U				MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3094 **Client ID** CALA−14−57276L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 345518015 **Serial Dilution ID:** 1203068856

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3094 **Client ID** CACV−14−49242L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 345519001 **Serial Dilution ID:** 1203068872

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.303		.335	U	100			AV

***Analytical Methods:**

AV **SW846 7471A**

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
28-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW846 3050B/6010C	Solid	LANL
Batch ID:	**Sample Numbers:**		
1377585	See Below		

Potentially affected work order(s)(SDG): 345519(2014-3094),345787(2014-3111)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for DUP

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203062361MS 2. Failed RPD for DUP: QC 1203062360DUP	1. The matrix spike recovery failed outside of the control limits for aluminum and manganese. The post spike passed the required control limits for all analytes. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. 2. The sample and sample duplicate % RPD failed outside the control limits for aluminum,barium,cobalt,copper,iron,magnesium,manganese, sodium,vanadium and zinc. due to possible sample non-homogeneity and/or matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. Sample #345787001 consist of various color and heavy granulated substance.

Originator's Name:

Helen Camello 28-APR-14

Data Validator/Group Leader:

Louise Smith 28-APR-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
28-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP/MS	SW846 3005A/6020A	Liquid	LANL
Batch ID:	**Sample Numbers:**		
1376946	See Below		

Potentially affected work order(s)(SDG): 345518(2014-3095-1),345519(2014-3094)

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203060842MS,1203075489PS	The matrix spike recovery failed outside of the control limits for Tl. The post spike failed outside the required control limits for Tl. This verifies the presence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.

Originator's Name:

Samantha Jacobs 28-APR-14

Data Validator/Group Leader:

Paul Boyd 28-APR-14

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3096

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CACV-14-49256	Mar 28 2014	12:15	SO	1
CACV-14-49257	Mar 28 2014	12:40	SO	1
CACV-14-49258	Mar 28 2014	15:00	SO	1
CACV-14-49259	Mar 28 2014	15:20	SO	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Montoya	3/31/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49256 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1215	MEDIA:		SED
PRS ID:	Cañon de Valle	ok	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	47 SZM 3/31/14	CV-01491	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0 cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		5cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: CDV - 2E

FIELD PARAMETERS: HE spot test negative

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
α: 17 dpm
β: 1045 dpm

Gross Alpha 28 dpm

Gross Beta/Gamma 1373 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Greene (Signature)	3/28/14 4:30
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49257 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		12:40	MEDIA:		Sed
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	AB SRM 3/7/14	CV-61492	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		14cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: CDV-2E

FIELD PARAMETERS: HE Spot test negative

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
1.17 dpm
Bkg. 1045 dpm

Gross Alpha 33 dpm

Gross Beta/Gamma 1694 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Greene (Signature)	3/28/14 4130
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49258 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1500	MEDIA:		SED
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~49~~ CAV 3/7/14	CV-61493	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		15cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: PRC 3/28/14
fine ~~+ coarse~~ sediment

LOCATION COMMENTS: CDV-3

FIELD PARAMETERS: HE spot test Negative

FIELD SCREENING/MEASUREMENT RESULTS:

Bkg 2σ
α: 17 dpm
β: 1045 dpm

Gross Alpha 33 dpm

Gross Beta/Gamma 1347 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Green (Signature)	3/28/14 1630
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49259 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		03/28/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1520	MEDIA:		Sed
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	~~50 5pm~~ 3/7/14	CV-61494	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		20cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment

LOCATION COMMENTS: CDV-3

FIELD PARAMETERS: HF spot test negative

FIELD SCREENING/MEASUREMENT RESULTS:

3kg Zad

Gross Alpha 42 dpm

x: 17 dpm

Gross Beta/Gamma 1560 dpm

Rs: 1045 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Kevin Reid (Signature) Kevin Reid	3/28/14 1630	(Printed Name) K. Greene (Signature)	3/28/14 4:30
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3096

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
5945	EPA:1668A	4				

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
5945	EPA:1668A	25626	25623	4					1	1	1			1	1						

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:1668A	PCBCONGENERS	CACV-14-49256	12010164	MS	0	29	26	0
EPA:1668A	PCBCONGENERS	CACV-14-49256	12010165	MSD	0	29	25	0
EPA:1668A	PCBCONGENERS	CACV-14-49256	5945001	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CACV-14-49257	5945002	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CACV-14-49258	5945003	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CACV-14-49259	5945004	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	LCS	12010162	LCS	0	29	26	0
EPA:1668A	PCBCONGENERS	LCSD	12010163	LCSD	0	29	26	0
EPA:1668A	PCBCONGENERS	MB	12010161	MB	177	29	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

DATA VALIDATION REPORT

No.

6. Any surrogate recoveries outside the control limits?

Field Sample ID	Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Spike Recovery	Upper Limit	Lower Limit	Rejection Limit
CACV-14-49256	12010165	EPA:1668A	13C-205-OcCB	25626	04-16-2014	168	150	25	10

7. Any MS/MSD recoveries or RPDs outside the control limits?

Field Sample ID	MS Lab Sample ID	MSD Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS Spike Recovery	MSD Spike Recovery	MS Upper Limit	MS Lower Limit	MS Reject Limit	RPD	RPD Limit
CACV-14-49256	12010164	12010165	EPA:1668A	PCB-37	25623	04-16-2014	SO	44	12	150	50	10	12.8	25
CACV-14-49256	12010164	12010165	EPA:1668A	PCB-77	25623	04-16-2014	SO	61	46	150	50	10	11.6	25

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

DATA VALIDATION REPORT

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

None.

Reason Code	Description
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CACV-14-49256	CV-61491	REG	EPA:1668A	0	177
CACV-14-49257	CV-61492	REG	EPA:1668A	0	177
CACV-14-49258	CV-61493	REG	EPA:1668A	0	177
CACV-14-49259	CV-61494	REG	EPA:1668A	0	177

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

May 02, 2014

Mr. Keith Greene
Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: 2012 WQH with LOCUS EDD
Work Order: 5945
SDG: 2014-3096

Dear Mr. Greene:

Cape Fear Analytical, LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on April 01, 2014. This revised data report has been prepared and reviewed in accordance with CFAôs standard operating procedures. Refer to the fractional case narrative for revision details.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerelv.

Cynde Larkins

Valerie Davis
Project Manager

Chain of Custody: 2014-3096
Enclosures

problem solved

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Los Alamos National Laboratory
2012 WQH with LOCUS EDD
Workorder #: 5945
SDG # : 2014-3096

Case Narrative

Receipt Narrative
for
Los Alamos National Laboratory
SDG: 2014-3096
Work Order: 5945

Laboratory Identification
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, North Carolina 28405
(910) 795-0421

Summary
Sample receipt: The samples arrived at Cape Fear Analytical LLC (CFA), Wilmington, North Carolina on April 01, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. Shipping container temperatures were checked, documented, and within specifications. All sample containers arrived without any visible signs of tampering or breakage. Appropriate sample containers were received. Sample containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Sufficient sample was received for analysis. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
5945001	CACV-14-49256
5945002	CACV-14-49257
5945003	CACV-14-49258
5945004	CACV-14-49259

Case Narrative
Sample analyses were conducted using methodology as outlined in Cape Fear Analyticalôs Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist and data from the following fractions: PCB Congeners.

Sincerely,

Cynde Larkins

Cynthia Larkins
Project Manager

List of current CFA Certifications as of 04 April 2014

State	Certification
California (NELAC)	09270CA
New Jersey (NELAC)	NC013
North Carolina	NC01894
South Carolina	99063001
Utah (Primary NELAC)	CFAL

Chain of Custody and Supporting Documentation

CFA WO # 5945

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3096

Page 1 of 1

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CACV-14-49256	Mar 28 2014	12:15	SO	1
CACV-14-49257	Mar 28 2014	12:40	SO	1
CACV-14-49258	Mar 28 2014	15:00	SO	1
CACV-14-49259	Mar 28 2014	15:20	SO	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
[signature]	Melissa Montoya	3/31/14 3:07	Cynde Larkins	CYNDE LARKINS	01APR14 1030
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

temp. = 3.9°C

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: LANL	Work Order: 5945
Received By: Cynde Larkins	Date/Time Received: 01APR14 1030

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			
Samples < 2x background?			

* Notify RSO of any responses in this column immediately.

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓	✓		Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓	✓		
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags (blue ice) dry ice none other (describe) 3.9°C
4	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
5	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
6	Samples received within holding time?	✓			Sample IDs, tests affected:
7	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
8	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
9	Number of containers received match number indicated on COC?	✓			Sample IDs, containers affected:
10	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CL Date: 01APR14

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE:
ACTWGT: 27.
BAD: 001417(

BILL SENDER

RT 357

FZ 359

1

TO CHRIS CORNWELL
CAPE FEAR ANALYTICAL
3306 KITTY HAWK ROAD, SUITE 120

WILMINGTON NC 28405
(910) 795-0421
REF: WE99316W209

FedEx Express

TRK# 0201 5908 1776 8597

TUE - 01 APR 10:30A
PRIORITY OVERNIGHT

XH ILMA

28405
NC-US GSO

Part # 156148-434 RIT2 10/11

temp. = 3.9°C

WO#5945

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Los Alamos National Laboratory (LANL)
SDG 2014-3096
Work Order 5945

Revision 1
This data package has been revised to correct the client SDG number.

Method/Analysis Information

Product:	**Method 1668A PCB Congeners in Solids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3540C
Analytical Batch Number:	25626
Clean Up Batch Number:	25624
Extraction Batch Number:	25623

Sample Analysis
The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
5945001	CACV-14-49256
5945002	CACV-14-49257
5945003	CACV-14-49258
5945004	CACV-14-49259
12010161	Method Blank (MB)
12010162	Laboratory Control Sample (LCS)
12010163	Laboratory Control Sample Duplicate (LCSD)
12010164	5945001(CACV-14-49256) Matrix Spike (MS)
12010165	5945001(CACV-14-49256) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard. Any known exceptions are discussed in the narrative.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
One surrogate recovered above the acceptance limits. The associated native analytes met acceptance criteria. 12010165 (CACV-14-49256).

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 5945001 (CACV-14-49256) was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike/Duplicate (MS/MSD) Recovery Statement
The MS recoveries for this SDG were not within the acceptance limits. The failures confirm in the matrix spike duplicate and are attributed to matrix interference. 12010164 (CACV-14-49256) and 12010165 (CACV-14-49256).

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of

expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The sample was diluted due to the presence of matrix interferences which caused retention time shifting. 5945004 (CACV-14-49259).

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	High-Resolution GC/MS System	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

LANL001 Los Alamos National Laboratory

Client SDG: 2014-3096 CFA Work Order: 5945

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
C	Congener has coeluters. When Cxxx, refer to congener number xxx for data
J	Value is estimated
Q	Quantitative Interference
U	Analyte was analyzed for , but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 02 MAY 2014 **Title: Data Validator**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945001**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 18:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.11 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	J	1.41	1.19	pg/g	0.982	4.91
2051-61-8	PCB-2	U	1.60	.982	pg/g	0.982	1.96
2051-62-9	PCB-3		2.76	2.58	pg/g	0.982	1.96
13029-08-8	PCB-4		5.05	4.2	pg/g	0.982	3.93
16605-91-7	PCB-5	U	.982	.982	pg/g	0.982	3.93
25569-80-6	PCB-6		2.68	2.14	pg/g	0.982	1.96
33284-50-3	PCB-7	U	.982	.982	pg/g	0.982	3.93
34883-43-7	PCB-8	J	14.1	13.6	pg/g	0.982	19.6
34883-39-1	PCB-9	U	.982	.982	pg/g	0.982	1.96
33146-45-1	PCB-10	U	.982	.982	pg/g	0.982	3.93
2050-67-1	PCB-11	J	4.41	3.86	pg/g	1.96	49.1
PCB-12/13	PCB-13/12	CJ	7.95	7.28	pg/g	0.982	7.85
34883-41-5	PCB-14	U	.982	.982	pg/g	0.982	3.93
2050-68-2	PCB-15		20.4	19.7	pg/g	0.982	19.6
38444-78-9	PCB-16		16.6	16.3	pg/g	0.982	3.93
37680-66-3	PCB-17		27.3	27	pg/g	0.654	3.93
PCB-18/30	PCB-18/30	C	61.4	61.2	pg/g	1.31	3.93
38444-73-4	PCB-19		3.84	3.6	pg/g	0.654	1.96
PCB-20/28	PCB-20/28	C	223	223	pg/g	1.31	19.6
PCB-21/33	PCB-21/33	C	57.1	56.9	pg/g	1.31	7.85
38444-85-8	PCB-22		52.7	52.5	pg/g	0.654	3.93
55720-44-0	PCB-23	U	.654	.654	pg/g	0.654	1.96
55702-45-9	PCB-24	U	.654	.654	pg/g	0.654	1.96
55712-37-3	PCB-25		5.85	5.67	pg/g	0.654	1.96
PCB-26/29	PCB-26/29	C	16.1	16	pg/g	1.31	3.93
38444-76-7	PCB-27		6.25	6.08	pg/g	0.654	1.96
16606-02-3	PCB-31		189	189	pg/g	0.654	9.82
38444-77-8	PCB-32		28.4	28.2	pg/g	0.654	1.96
37680-68-5	PCB-34	U	.654	.654	pg/g	0.654	1.96
37680-69-6	PCB-35		5.79	5.55	pg/g	0.654	3.93
38444-87-0	PCB-36	U	.654	.654	pg/g	0.654	3.93
38444-90-5	PCB-37		112	112	pg/g	0.654	19.6

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
Q **Quantitative Interference**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945001**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 18:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.11 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38		19.4	19.2	pg/g	0.654	1.96
38444-88-1	PCB-39	J	2.96	2.67	pg/g	0.654	3.93
PCB-40/71	PCB-40/71	C	226	226	pg/g	1.31	3.93
52663-59-9	PCB-41		36.5	36.1	pg/g	1.31	1.96
36559-22-5	PCB-42		148	147	pg/g	0.982	1.96
70362-46-8	PCB-43		13.1	12.6	pg/g	1.31	3.93
PCB-44/47/65	PCB-44/65/47	C	573	572	pg/g	3.28	5.89
PCB-45/51	PCB-45/51	CU	1.31	1.31	pg/g	1.31	3.93
41464-47-5	PCB-46		14.7	14.4	pg/g	0.654	1.96
70362-47-9	PCB-48		80.0	79.5	pg/g	0.654	1.96
PCB-49/69	PCB-69/49	C	336	335	pg/g	1.31	3.93
PCB-50/53	PCB-50/53	C	48.2	47.9	pg/g	1.31	3.93
35693-99-3	PCB-52		578	578	pg/g	1.31	1.96
15968-05-5	PCB-54	U	.654	.654	pg/g	0.654	1.96
74338-24-2	PCB-55		4.65	4.38	pg/g	0.982	1.96
41464-43-1	PCB-56		338	337	pg/g	0.654	3.93
70424-67-8	PCB-57	U	.982	.982	pg/g	0.982	1.96
41464-49-7	PCB-58	U	1.15	.982	pg/g	0.982	1.96
PCB-59/62/75	PCB-59/62/75	C	29.2	29	pg/g	1.96	5.89
33025-41-1	PCB-60		141	140	pg/g	0.654	3.93
PCB-61-76	PCB-61/76/70/74	C	1080	1080	pg/g	2.61	7.85
74472-34-7	PCB-63		13.6	13.5	pg/g	0.654	4.91
52663-58-8	PCB-64		220	220	pg/g	0.982	1.96
32598-10-0	PCB-66		687	687	pg/g	0.982	4.91
73575-53-8	PCB-67		6.84	6.66	pg/g	0.982	1.96
73575-52-7	PCB-68	J	1.63	1.39	pg/g	0.654	1.96
41464-42-0	PCB-72	J	2.85	2.67	pg/g	0.654	3.93
74338-23-1	PCB-73		6.13	5.78	pg/g	0.982	1.96
32598-13-3	PCB-77		79.3	79	pg/g	0.654	1.96
70362-49-1	PCB-78	U	.654	.654	pg/g	0.654	1.96
41464-48-6	PCB-79		5.30	5.13	pg/g	0.654	3.93
33284-52-5	PCB-80	U	.654	.654	pg/g	0.654	3.93

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
Q **Quantitative Interference**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945001**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 18:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.11 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81		3.18	2.96	pg/g	0.654	1.96
52663-62-4	PCB-82		74.4	74	pg/g	0.982	4.91
60145-20-2	PCB-83		28.4	28	pg/g	0.982	1.96
52663-60-2	PCB-84		115	114	pg/g	0.982	1.96
PCB-85-117	PCB-117/116/85	C	109	108	pg/g	1.96	5.89
PCB-86-125	PCB-86/87/97/109/119/125	C	366	366	pg/g	3.93	11.8
PCB-88/91	PCB-88/91	C	66.5	66.1	pg/g	1.31	3.93
73575-57-2	PCB-89		8.21	7.87	pg/g	0.654	1.96
PCB-90-113	PCB-113/90/101	C	444	444	pg/g	1.96	5.89
52663-61-3	PCB-92		69.8	69.5	pg/g	0.982	1.96
PCB-93/100	PCB-93/100	CJ	3.38	3	pg/g	1.96	3.93
73575-55-0	PCB-94	J	2.34	1.87	pg/g	0.654	1.96
38379-99-6	PCB-95		292	292	pg/g	1.31	3.93
73575-54-9	PCB-96		3.00	2.82	pg/g	0.654	1.96
PCB-98/102	PCB-102/98	C	16.8	16.5	pg/g	1.31	3.93
38380-01-7	PCB-99		249	248	pg/g	1.31	1.96
60145-21-3	PCB-103	J	2.19	1.9	pg/g	0.654	4.91
56558-16-8	PCB-104	U	.654	.654	pg/g	0.654	1.96
32598-14-4	PCB-105		214	214	pg/g	0.982	1.96
70424-69-0	PCB-106	U	.982	.982	pg/g	0.982	1.96
70424-68-9	PCB-107		27.2	26.9	pg/g	0.654	3.93
PCB-108/124	PCB-108/124	C	16.9	16.5	pg/g	1.31	3.93
PCB-110/115	PCB-110/115	C	524	522	pg/g	2.61	3.93
39635-32-0	PCB-111	U	.654	.654	pg/g	0.654	1.96
74472-36-9	PCB-112	U	1.31	1.31	pg/g	1.31	1.96
74472-37-0	PCB-114		9.87	9.52	pg/g	0.654	1.96
31508-00-6	PCB-118		366	364	pg/g	1.31	3.93
68194-12-7	PCB-120	U	.654	.654	pg/g	0.654	1.96
56558-18-0	PCB-121	U	.654	.654	pg/g	0.654	1.96
76842-07-4	PCB-122	U	6.51	.654	pg/g	0.654	6.77
65510-44-3	PCB-123		9.77	9.46	pg/g	0.654	1.96
57465-28-8	PCB-126		2.48	2.1	pg/g	0.654	1.96

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
Q **Quantitative Interference**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945001**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 18:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.11 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.654	.654	pg/g	0.654	1.96
PCB-128/166	PCB-128/166	C	71.1	70.8	pg/g	1.31	3.93
PCB-129-163	PCB-138/163/129	C	778	778	pg/g	2.61	5.89
52663-66-8	PCB-130		28.7	28.3	pg/g	0.982	1.96
61798-70-7	PCB-131		5.60	5.21	pg/g	0.654	1.96
38380-05-1	PCB-132		211	210	pg/g	0.982	1.96
35694-04-3	PCB-133		6.68	6.35	pg/g	0.654	1.96
52704-70-8	PCB-134		23.7	23.3	pg/g	1.31	1.96
PCB-135/151	PCB-151/135	C	247	246	pg/g	1.31	3.93
38411-22-2	PCB-136		72.5	72.3	pg/g	0.654	1.96
35694-06-5	PCB-137		13.8	13.3	pg/g	1.31	1.96
PCB-139/140	PCB-139/140	C	5.10	4.74	pg/g	1.31	3.93
52712-04-6	PCB-141		171	171	pg/g	1.31	3.93
41411-61-4	PCB-142	U	.654	.654	pg/g	0.654	1.96
68194-15-0	PCB-143	U	1.31	1.31	pg/g	1.31	1.96
68194-14-9	PCB-144		30.3	30	pg/g	0.654	1.96
74472-40-5	PCB-145	U	.654	.654	pg/g	0.654	1.96
51908-16-8	PCB-146		87.6	87.1	pg/g	0.982	1.96
PCB-147/149	PCB-147/149	C	528	527	pg/g	1.96	7.85
74472-41-6	PCB-148	U	.654	.654	pg/g	0.654	1.96
68194-08-1	PCB-150	U	.982	.982	pg/g	0.982	1.96
68194-09-2	PCB-152	U	.654	.654	pg/g	0.654	1.96
PCB-153/168	PCB-153/168	C	698	698	pg/g	1.96	7.85
60145-22-4	PCB-154		2.42	2.16	pg/g	0.654	1.96
33979-03-2	PCB-155	J	1.84	1.64	pg/g	0.654	1.96
PCB-156/157	PCB-156/157	C	71.2	70.9	pg/g	1.31	3.93
74472-42-7	PCB-158		63.5	63.3	pg/g	0.654	1.96
39635-35-3	PCB-159	U	.654	.654	pg/g	0.654	1.96
41411-62-5	PCB-160	U	.654	.654	pg/g	0.654	1.96
74472-43-8	PCB-161	U	.982	.982	pg/g	0.982	1.96
39635-34-2	PCB-162	U	.982	.982	pg/g	0.982	1.96
74472-45-0	PCB-164		52.6	52.4	pg/g	0.654	1.96

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
Q **Quantitative Interference**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945001**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 18:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.11 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.654	.654	pg/g	0.654	1.96
52663-72-6	PCB-167		25.6	25.4	pg/g	0.654	1.96
32774-16-6	PCB-169	U	.982	.982	pg/g	0.982	1.96
35065-30-6	PCB-170		386	386	pg/g	0.654	1.96
PCB-171/173	PCB-173/171	C	111	111	pg/g	1.31	3.93
52663-74-8	PCB-172		69.8	69.5	pg/g	0.982	1.96
38411-25-5	PCB-174		481	481	pg/g	1.31	1.96
40186-70-7	PCB-175		13.9	13.6	pg/g	0.982	1.96
52663-65-7	PCB-176		39.0	38.8	pg/g	0.654	1.96
52663-70-4	PCB-177		251	251	pg/g	0.982	1.96
52663-67-9	PCB-178		76.8	76.6	pg/g	1.31	1.96
52663-64-6	PCB-179		148	147	pg/g	0.654	1.96
PCB-180/193	PCB-193/180	CU	1.96	1.96	pg/g	1.96	3.93
74472-47-2	PCB-181	U	1.31	.982	pg/g	0.982	1.96
60145-23-5	PCB-182	U	.654	.654	pg/g	0.654	1.96
PCB-183/185	PCB-183/185	C	297	296	pg/g	1.31	3.93
74472-48-3	PCB-184	U	.654	.654	pg/g	0.654	1.96
74472-49-4	PCB-186	U	.654	.654	pg/g	0.654	1.96
52663-68-0	PCB-187		551	550	pg/g	0.982	1.96
74487-85-7	PCB-188	U	.654	.654	pg/g	0.654	1.96
39635-31-9	PCB-189		11.1	10.8	pg/g	0.654	1.96
41411-64-7	PCB-190		80.9	80.7	pg/g	0.982	1.96
74472-50-7	PCB-191		13.8	13.6	pg/g	0.654	1.96
74472-51-8	PCB-192	U	.654	.654	pg/g	0.654	1.96
35694-08-7	PCB-194		169	169	pg/g	0.654	1.96
52663-78-2	PCB-195		85.9	85.6	pg/g	0.982	1.96
42740-50-1	PCB-196		107	107	pg/g	0.654	1.96
PCB-197/200	PCB-197/200	C	38.8	38.5	pg/g	1.31	3.93
PCB-198/199	PCB-198/199	C	251	251	pg/g	1.31	3.93
40186-71-8	PCB-201		29.1	28.9	pg/g	0.654	1.96
2136-99-4	PCB-202		41.8	41.5	pg/g	0.982	1.96
52663-76-0	PCB-203		146	145	pg/g	1.31	1.96

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
Q **Quantitative Interference**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945001**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 18:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.11 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.982	.982	pg/g	0.982	1.96
74472-53-0	PCB-205		8.13	7.9	pg/g	0.654	1.96
40186-72-9	PCB-206		42.9	42.5	pg/g	0.982	1.96
52663-79-3	PCB-207		7.35	7.06	pg/g	0.654	1.96
52663-77-1	PCB-208		11.6	11.3	pg/g	0.654	1.96
2051-24-3	PCB-209	Q	14.9	14.5	pg/g	0.654	1.96
27323-18-8	Total Mono PCBs		5.77	3.77	pg/g		
25512-42-9	Total Di PCBs		54.6	50.8	pg/g		
25323-68-6	Total Tri PCBs		828	824	pg/g		
26914-33-0	Total Tetra PCBs		4680	4670	pg/g		
25429-29-2	Total Penta PCBs		3030	3010	pg/g		
26601-64-9	Total Hexa PCBs		3200	3190	pg/g		
28655-71-2	Total Hepta PCBs		2530	2530	pg/g		
55722-26-4	Total Octa PCBs		877	874	pg/g		
53742-07-7	Total Nona PCBs		61.9	60.8	pg/g		
DECACB(Tot)	Total Deca PCB		14.9	14.5	pg/g		
1336-36-3	Total PCB Congeners		15300	15200	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		82.8	196	pg/g	42.2	(15%-150%)
13C-3-MoCB		94.3	196	pg/g	48.0	(15%-150%)
13C-4-DiCB		100	196	pg/g	51.0	(25%-150%)
13C-15-DiCB		153	196	pg/g	78.0	(25%-150%)
13C-19-TrCB		123	196	pg/g	62.8	(25%-150%)
13C-37-TrCB		179	196	pg/g	91.3	(25%-150%)
13C-54-TeCB		146	196	pg/g	74.4	(25%-150%)
13C-77-TeCB		214	196	pg/g	109	(25%-150%)
13C-81-TeCB		212	196	pg/g	108	(25%-150%)
13C-104-PeCB		160	196	pg/g	81.4	(25%-150%)
13C-105-PeCB		180	196	pg/g	91.8	(25%-150%)
13C-114-PeCB		173	196	pg/g	88.1	(25%-150%)
13C-118-PeCB		183	196	pg/g	93.2	(25%-150%)
13C-123-PeCB		189	196	pg/g	96.2	(25%-150%)
13C-126-PeCB		193	196	pg/g	98.2	(25%-150%)
13C-155-HxCB		156	196	pg/g	79.2	(25%-150%)
13C-156-HxCB	C	356	393	pg/g	90.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		170	196	pg/g	86.6	(25%-150%)
13C-169-HxCB		202	196	pg/g	103	(25%-150%)
13C-188-HpCB		120	196	pg/g	60.9	(25%-150%)
13C-189-HpCB		158	196	pg/g	80.7	(25%-150%)
13C-202-OcCB		130	196	pg/g	66.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945001**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 18:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.11 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		177	196	pg/g	90.0	(25%-150%)
13C-206-NoCB		146	196	pg/g	74.1	(25%-150%)
13C-208-NoCB		147	196	pg/g	75.0	(25%-150%)
13C-209-DeCB	Q	125	196	pg/g	63.5	(25%-150%)
13C-28-TrCB		152	196	pg/g	77.4	(30%-135%)
13C-111-PeCB		168	196	pg/g	85.8	(30%-135%)
13C-178-HpCB		151	196	pg/g	76.9	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
Q **Quantitative Interference**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945002**	**Date Collected:**	**03/28/2014 12:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**6.3**
Client ID:	**CACV-14-49257**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 05:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.972	.972	pg/g	0.972	4.86
2051-61-8	PCB-2	U	1.18	.972	pg/g	0.972	1.94
2051-62-9	PCB-3	J	1.85	1.66	pg/g	0.972	1.94
13029-08-8	PCB-4	J	4.43	3.57	pg/g	0.972	3.89
16605-91-7	PCB-5	U	.972	.972	pg/g	0.972	3.89
25569-80-6	PCB-6	J	1.79	1.25	pg/g	0.972	1.94
33284-50-3	PCB-7	U	.972	.972	pg/g	0.972	3.89
34883-43-7	PCB-8	J	8.69	8.17	pg/g	0.972	19.4
34883-39-1	PCB-9	U	.972	.972	pg/g	0.972	1.94
33146-45-1	PCB-10	U	.972	.972	pg/g	0.972	3.89
2050-67-1	PCB-11	U	2.43	1.94	pg/g	1.94	48.6
PCB-12/13	PCB-13/12	CJ	3.09	2.42	pg/g	0.972	7.78
34883-41-5	PCB-14	U	.972	.972	pg/g	0.972	3.89
2050-68-2	PCB-15	J	12.3	11.6	pg/g	0.972	19.4
38444-78-9	PCB-16		15.6	15.3	pg/g	0.972	3.89
37680-66-3	PCB-17		18.6	18.3	pg/g	0.647	3.89
PCB-18/30	PCB-18/30	C	39.4	39.2	pg/g	1.30	3.89
38444-73-4	PCB-19		7.35	7.1	pg/g	0.647	1.94
PCB-20/28	PCB-20/28	C	82.2	82.1	pg/g	1.30	19.4
PCB-21/33	PCB-21/33	C	27.5	27.3	pg/g	1.30	7.78
38444-85-8	PCB-22		23.3	23.1	pg/g	0.647	3.89
55720-44-0	PCB-23	U	.647	.647	pg/g	0.647	1.94
55702-45-9	PCB-24	U	.647	.647	pg/g	0.647	1.94
55712-37-3	PCB-25		3.43	3.26	pg/g	0.647	1.94
PCB-26/29	PCB-26/29	C	7.33	7.17	pg/g	1.30	3.89
38444-76-7	PCB-27		4.11	3.94	pg/g	0.647	1.94
16606-02-3	PCB-31		67.0	66.8	pg/g	0.647	9.72
38444-77-8	PCB-32		15.6	15.5	pg/g	0.647	1.94
37680-68-5	PCB-34	U	.647	.647	pg/g	0.647	1.94
37680-69-6	PCB-35	J	1.82	1.58	pg/g	0.647	3.89
38444-87-0	PCB-36	U	.647	.647	pg/g	0.647	3.89
38444-90-5	PCB-37		39.0	38.7	pg/g	0.647	19.4

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945002**	**Date Collected:**	**03/28/2014 12:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**6.3**
Client ID:	**CACV-14-49257**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 05:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	J	2.13	1.89	pg/g	0.647	1.94
38444-88-1	PCB-39	U	.647	.647	pg/g	0.647	3.89
PCB-40/71	PCB-40/71	C	79.4	79	pg/g	1.30	3.89
52663-59-9	PCB-41		11.7	11.3	pg/g	1.30	1.94
36559-22-5	PCB-42		51.4	51	pg/g	0.972	1.94
70362-46-8	PCB-43		5.33	4.83	pg/g	1.30	3.89
PCB-44/47/65	PCB-44/65/47	C	194	193	pg/g	3.25	5.83
PCB-45/51	PCB-45/51	C	27.3	26.9	pg/g	1.30	3.89
41464-47-5	PCB-46		8.08	7.82	pg/g	0.647	1.94
70362-47-9	PCB-48		27.6	27.1	pg/g	0.647	1.94
PCB-49/69	PCB-69/49	C	117	117	pg/g	1.30	3.89
PCB-50/53	PCB-50/53	C	22.1	21.9	pg/g	1.30	3.89
35693-99-3	PCB-52		207	206	pg/g	1.30	1.94
15968-05-5	PCB-54	U	.647	.647	pg/g	0.647	1.94
74338-24-2	PCB-55	U	.972	.972	pg/g	0.972	1.94
41464-43-1	PCB-56		114	114	pg/g	0.647	3.89
70424-67-8	PCB-57	U	.972	.972	pg/g	0.972	1.94
41464-49-7	PCB-58	U	.972	.972	pg/g	0.972	1.94
PCB-59/62/75	PCB-59/62/75	C	9.48	9.2	pg/g	1.94	5.83
33025-41-1	PCB-60		48.4	47.9	pg/g	0.647	3.89
PCB-61-76	PCB-61/76/70/74	C	312	312	pg/g	2.59	7.78
74472-34-7	PCB-63	J	4.80	4.62	pg/g	0.647	4.86
52663-58-8	PCB-64		81.4	81.1	pg/g	0.972	1.94
32598-10-0	PCB-66		217	217	pg/g	0.972	4.86
73575-53-8	PCB-67		2.52	2.34	pg/g	0.972	1.94
73575-52-7	PCB-68	U	0.651	.647	pg/g	0.647	1.94
41464-42-0	PCB-72	J	1.02	.846	pg/g	0.647	3.89
74338-23-1	PCB-73	U	.972	.972	pg/g	0.972	1.94
32598-13-3	PCB-77		26.2	25.9	pg/g	0.647	1.94
70362-49-1	PCB-78	U	.647	.647	pg/g	0.647	1.94
41464-48-6	PCB-79	J	2.55	2.39	pg/g	0.647	3.89
33284-52-5	PCB-80	U	.647	.647	pg/g	0.647	3.89

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945002**	**Date Collected:**	**03/28/2014 12:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**6.3**
Client ID:	**CACV-14-49257**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 05:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	J	0.935	.715	pg/g	0.647	1.94
52663-62-4	PCB-82		34.4	34	pg/g	0.972	4.86
60145-20-2	PCB-83		11.1	10.8	pg/g	0.972	1.94
52663-60-2	PCB-84		52.5	52.2	pg/g	0.972	1.94
PCB-85-117	PCB-117/116/85	C	52.1	51.8	pg/g	1.94	5.83
PCB-86-125	PCB-86/87/97/109/119/125	C	159	159	pg/g	3.89	11.7
PCB-88/91	PCB-88/91	C	31.9	31.5	pg/g	1.30	3.89
73575-57-2	PCB-89		3.82	3.49	pg/g	0.647	1.94
PCB-90-113	PCB-113/90/101	C	191	190	pg/g	1.94	5.83
52663-61-3	PCB-92		30.5	30.2	pg/g	0.972	1.94
PCB-93/100	PCB-93/100	CU	1.94	1.94	pg/g	1.94	3.89
73575-55-0	PCB-94	J	1.25	.778	pg/g	0.647	1.94
38379-99-6	PCB-95		132	132	pg/g	1.30	3.89
73575-54-9	PCB-96	J	1.47	1.29	pg/g	0.647	1.94
PCB-98/102	PCB-102/98	C	7.20	6.85	pg/g	1.30	3.89
38380-01-7	PCB-99		109	108	pg/g	1.30	1.94
60145-21-3	PCB-103	J	1.05	.764	pg/g	0.647	4.86
56558-16-8	PCB-104	U	.647	.647	pg/g	0.647	1.94
32598-14-4	PCB-105		98.0	97.4	pg/g	0.972	1.94
70424-69-0	PCB-106	U	.972	.972	pg/g	0.972	1.94
70424-68-9	PCB-107		11.6	11.3	pg/g	0.647	3.89
PCB-108/124	PCB-108/124	C	7.35	7.02	pg/g	1.30	3.89
PCB-110/115	PCB-110/115	C	255	252	pg/g	2.59	3.89
39635-32-0	PCB-111	U	.647	.647	pg/g	0.647	1.94
74472-36-9	PCB-112	U	1.3	1.3	pg/g	1.30	1.94
74472-37-0	PCB-114		4.06	3.7	pg/g	0.647	1.94
31508-00-6	PCB-118		152	150	pg/g	1.30	3.89
68194-12-7	PCB-120	U	.647	.647	pg/g	0.647	1.94
56558-18-0	PCB-121	U	.647	.647	pg/g	0.647	1.94
76842-07-4	PCB-122	U	3.02	.647	pg/g	0.647	6.71
65510-44-3	PCB-123		4.32	4.01	pg/g	0.647	1.94
57465-28-8	PCB-126	J	1.15	.767	pg/g	0.647	1.94

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945002**	**Date Collected:**	**03/28/2014 12:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**6.3**
Client ID:	**CACV-14-49257**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 05:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.647	.647	pg/g	0.647	1.94
PCB-128/166	PCB-128/166	C	24.8	24.4	pg/g	1.30	3.89
PCB-129-163	PCB-138/163/129	C	216	216	pg/g	2.59	5.83
52663-66-8	PCB-130		10.1	9.71	pg/g	0.972	1.94
61798-70-7	PCB-131	J	2.05	1.66	pg/g	0.647	1.94
38380-05-1	PCB-132		60.1	58.9	pg/g	0.972	1.94
35694-04-3	PCB-133	J	1.96	1.63	pg/g	0.647	1.94
52704-70-8	PCB-134		10.4	9.93	pg/g	1.30	1.94
PCB-135/151	PCB-151/135	C	68.2	67.8	pg/g	1.30	3.89
38411-22-2	PCB-136		21.8	21.6	pg/g	0.647	1.94
35694-06-5	PCB-137		7.50	7.01	pg/g	1.30	1.94
PCB-139/140	PCB-139/140	CJ	2.45	2.09	pg/g	1.30	3.89
52712-04-6	PCB-141		38.1	37.8	pg/g	1.30	3.89
41411-61-4	PCB-142	U	.647	.647	pg/g	0.647	1.94
68194-15-0	PCB-143	U	1.3	1.3	pg/g	1.30	1.94
68194-14-9	PCB-144		8.08	7.79	pg/g	0.647	1.94
74472-40-5	PCB-145	U	.647	.647	pg/g	0.647	1.94
51908-16-8	PCB-146		23.6	23.1	pg/g	0.972	1.94
PCB-147/149	PCB-147/149	C	161	159	pg/g	1.94	7.78
74472-41-6	PCB-148	U	.647	.647	pg/g	0.647	1.94
68194-08-1	PCB-150	U	.972	.972	pg/g	0.972	1.94
68194-09-2	PCB-152	U	.647	.647	pg/g	0.647	1.94
PCB-153/168	PCB-153/168	C	180	179	pg/g	1.94	7.78
60145-22-4	PCB-154	J	1.17	.904	pg/g	0.647	1.94
33979-03-2	PCB-155	J	0.992	.79	pg/g	0.647	1.94
PCB-156/157	PCB-156/157	C	20.2	19.8	pg/g	1.30	3.89
74472-42-7	PCB-158		17.6	17.4	pg/g	0.647	1.94
39635-35-3	PCB-159	U	.647	.647	pg/g	0.647	1.94
41411-62-5	PCB-160	U	.647	.647	pg/g	0.647	1.94
74472-43-8	PCB-161	U	.972	.972	pg/g	0.972	1.94
39635-34-2	PCB-162	U	.972	.972	pg/g	0.972	1.94
74472-45-0	PCB-164		13.2	12.9	pg/g	0.647	1.94

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945002**	**Date Collected:**	**03/28/2014 12:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**6.3**
Client ID:	**CACV-14-49257**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 05:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.647	.647	pg/g	0.647	1.94
52663-72-6	PCB-167		7.44	7.19	pg/g	0.647	1.94
32774-16-6	PCB-169	U	.972	.972	pg/g	0.972	1.94
35065-30-6	PCB-170		58.5	58.1	pg/g	0.647	1.94
PCB-171/173	PCB-173/171	C	17.6	17.3	pg/g	1.30	3.89
52663-74-8	PCB-172		10.6	10.3	pg/g	0.972	1.94
38411-25-5	PCB-174		76.4	76.1	pg/g	1.30	1.94
40186-70-7	PCB-175		2.58	2.33	pg/g	0.972	1.94
52663-65-7	PCB-176		7.67	7.47	pg/g	0.647	1.94
52663-70-4	PCB-177		39.8	39.5	pg/g	0.972	1.94
52663-67-9	PCB-178		14.5	14.2	pg/g	1.30	1.94
52663-64-6	PCB-179		28.3	28.1	pg/g	0.647	1.94
PCB-180/193	PCB-193/180	CU	1.94	1.94	pg/g	1.94	3.89
74472-47-2	PCB-181	U	.972	.972	pg/g	0.972	1.94
60145-23-5	PCB-182	U	.647	.647	pg/g	0.647	1.94
PCB-183/185	PCB-183/185	C	48.5	48.2	pg/g	1.30	3.89
74472-48-3	PCB-184	U	.647	.647	pg/g	0.647	1.94
74472-49-4	PCB-186	U	.647	.647	pg/g	0.647	1.94
52663-68-0	PCB-187		99.8	99.3	pg/g	0.972	1.94
74487-85-7	PCB-188	U	.647	.647	pg/g	0.647	1.94
39635-31-9	PCB-189		2.32	2.06	pg/g	0.647	1.94
41411-64-7	PCB-190		12.5	12.2	pg/g	0.972	1.94
74472-50-7	PCB-191	J	2.11	1.89	pg/g	0.647	1.94
74472-51-8	PCB-192	U	.647	.647	pg/g	0.647	1.94
35694-08-7	PCB-194		33.7	33.3	pg/g	0.647	1.94
52663-78-2	PCB-195		12.8	12.5	pg/g	0.972	1.94
42740-50-1	PCB-196		15.9	15.6	pg/g	0.647	1.94
PCB-197/200	PCB-197/200	C	6.17	5.91	pg/g	1.30	3.89
PCB-198/199	PCB-198/199	C	40.1	39.8	pg/g	1.30	3.89
40186-71-8	PCB-201		4.38	4.16	pg/g	0.647	1.94
2136-99-4	PCB-202		7.60	7.32	pg/g	0.972	1.94
52663-76-0	PCB-203		23.7	23.3	pg/g	1.30	1.94

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945002**	**Date Collected:**	**03/28/2014 12:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**6.3**
Client ID:	**CACV-14-49257**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 05:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.972	.972	pg/g	0.972	1.94
74472-53-0	PCB-205	J	1.89	1.66	pg/g	0.647	1.94
40186-72-9	PCB-206		11.7	11.3	pg/g	0.972	1.94
52663-79-3	PCB-207	J	1.68	1.4	pg/g	0.647	1.94
52663-77-1	PCB-208		3.05	2.72	pg/g	0.647	1.94
2051-24-3	PCB-209		8.04	7.68	pg/g	0.647	1.94
27323-18-8	Total Mono PCBs		3.02	1.66	pg/g		
25512-42-9	Total Di PCBs		32.7	27	pg/g		
25323-68-6	Total Tri PCBs		354	351	pg/g		
26914-33-0	Total Tetra PCBs		1570	1560	pg/g		
25429-29-2	Total Penta PCBs		1350	1340	pg/g		
26601-64-9	Total Hexa PCBs		897	888	pg/g		
28655-71-2	Total Hepta PCBs		421	417	pg/g		
55722-26-4	Total Octa PCBs		146	144	pg/g		
53742-07-7	Total Nona PCBs		16.4	15.4	pg/g		
DECACB(Tot)	Total Deca PCB		8.04	7.68	pg/g		
1336-36-3	Total PCB Congeners		4800	4750	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		64.1	194	pg/g	32.9	(15%-150%)
13C-3-MoCB		80.1	194	pg/g	41.2	(15%-150%)
13C-4-DiCB		86.4	194	pg/g	44.4	(25%-150%)
13C-15-DiCB		137	194	pg/g	70.4	(25%-150%)
13C-19-TrCB		108	194	pg/g	55.8	(25%-150%)
13C-37-TrCB		162	194	pg/g	83.3	(25%-150%)
13C-54-TeCB		124	194	pg/g	63.8	(25%-150%)
13C-77-TeCB		187	194	pg/g	96.3	(25%-150%)
13C-81-TeCB		191	194	pg/g	98.0	(25%-150%)
13C-104-PeCB		141	194	pg/g	72.7	(25%-150%)
13C-105-PeCB		157	194	pg/g	80.8	(25%-150%)
13C-114-PeCB		148	194	pg/g	76.2	(25%-150%)
13C-118-PeCB		161	194	pg/g	82.6	(25%-150%)
13C-123-PeCB		167	194	pg/g	85.8	(25%-150%)
13C-126-PeCB		176	194	pg/g	90.5	(25%-150%)
13C-155-HxCB		138	194	pg/g	70.9	(25%-150%)
13C-156-HxCB	C	309	389	pg/g	79.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		149	194	pg/g	76.7	(25%-150%)
13C-169-HxCB		175	194	pg/g	90.0	(25%-150%)
13C-188-HpCB		105	194	pg/g	53.9	(25%-150%)
13C-189-HpCB		145	194	pg/g	74.5	(25%-150%)
13C-202-OcCB		116	194	pg/g	59.5	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945002**	**Date Collected:**	**03/28/2014 12:40**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**6.3**
Client ID:	**CACV-14-49257**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 05:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10.98 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		161	194	pg/g	82.6	(25%-150%)
13C-206-NoCB		130	194	pg/g	66.7	(25%-150%)
13C-208-NoCB		129	194	pg/g	66.2	(25%-150%)
13C-209-DeCB		134	194	pg/g	68.8	(25%-150%)
13C-28-TrCB		132	194	pg/g	67.9	(30%-135%)
13C-111-PeCB		146	194	pg/g	74.9	(30%-135%)
13C-178-HpCB		136	194	pg/g	69.9	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945003**	**Date Collected:**	**03/28/2014 15:00**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**5.9**
Client ID:	**CACV-14-49258**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.07 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.96	.96	pg/g	0.960	4.80
2051-61-8	PCB-2	U	.96	.96	pg/g	0.960	1.92
2051-62-9	PCB-3	U	.96	.96	pg/g	0.960	1.92
13029-08-8	PCB-4	U	.96	.96	pg/g	0.960	3.84
16605-91-7	PCB-5	U	.96	.96	pg/g	0.960	3.84
25569-80-6	PCB-6	U	.96	.96	pg/g	0.960	1.92
33284-50-3	PCB-7	U	.96	.96	pg/g	0.960	3.84
34883-43-7	PCB-8	J	2.25	1.74	pg/g	0.960	19.2
34883-39-1	PCB-9	U	.96	.96	pg/g	0.960	1.92
33146-45-1	PCB-10	U	.96	.96	pg/g	0.960	3.84
2050-67-1	PCB-11	U	1.95	1.92	pg/g	1.92	48.0
PCB-12/13	PCB-13/12	CU	.96	.96	pg/g	0.960	7.68
34883-41-5	PCB-14	U	.96	.96	pg/g	0.960	3.84
2050-68-2	PCB-15	J	3.55	2.89	pg/g	0.960	19.2
38444-78-9	PCB-16	J	2.27	1.97	pg/g	0.960	3.84
37680-66-3	PCB-17	J	3.03	2.68	pg/g	0.639	3.84
PCB-18/30	PCB-18/30	C	5.33	5.12	pg/g	1.28	3.84
38444-73-4	PCB-19	U	0.722	.639	pg/g	0.639	1.92
PCB-20/28	PCB-20/28	CJ	17.6	17.4	pg/g	1.28	19.2
PCB-21/33	PCB-21/33	CJ	6.57	6.41	pg/g	1.28	7.68
38444-85-8	PCB-22		5.93	5.72	pg/g	0.639	3.84
55720-44-0	PCB-23	U	.639	.639	pg/g	0.639	1.92
55702-45-9	PCB-24	U	.639	.639	pg/g	0.639	1.92
55712-37-3	PCB-25	J	0.906	.735	pg/g	0.639	1.92
PCB-26/29	PCB-26/29	CJ	1.89	1.73	pg/g	1.28	3.84
38444-76-7	PCB-27	U	.639	.639	pg/g	0.639	1.92
16606-02-3	PCB-31		14.5	14.3	pg/g	0.639	9.60
38444-77-8	PCB-32	J	1.80	1.64	pg/g	0.639	1.92
37680-68-5	PCB-34	U	.639	.639	pg/g	0.639	1.92
37680-69-6	PCB-35	U	.639	.639	pg/g	0.639	3.84
38444-87-0	PCB-36	U	.639	.639	pg/g	0.639	3.84
38444-90-5	PCB-37	J	9.61	9.3	pg/g	0.639	19.2

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945003**	**Date Collected:**	**03/28/2014 15:00**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**5.9**
Client ID:	**CACV-14-49258**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.07 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.639	.639	pg/g	0.639	1.92
38444-88-1	PCB-39	U	.639	.639	pg/g	0.639	3.84
PCB-40/71	PCB-40/71	C	12.2	11.8	pg/g	1.28	3.84
52663-59-9	PCB-41	J	1.83	1.45	pg/g	1.28	1.92
36559-22-5	PCB-42		8.36	7.95	pg/g	0.960	1.92
70362-46-8	PCB-43	U	1.28	1.28	pg/g	1.28	3.84
PCB-44/47/65	PCB-44/65/47	C	33.8	33.5	pg/g	3.21	5.76
PCB-45/51	PCB-45/51	CJ	3.17	2.76	pg/g	1.28	3.84
41464-47-5	PCB-46	J	1.11	.842	pg/g	0.639	1.92
70362-47-9	PCB-48		4.24	3.76	pg/g	0.639	1.92
PCB-49/69	PCB-69/49	C	21.9	21.6	pg/g	1.28	3.84
PCB-50/53	PCB-50/53	CJ	2.94	2.7	pg/g	1.28	3.84
35693-99-3	PCB-52		37.3	37	pg/g	1.28	1.92
15968-05-5	PCB-54	U	.639	.639	pg/g	0.639	1.92
74338-24-2	PCB-55	U	.96	.96	pg/g	0.960	1.92
41464-43-1	PCB-56		23.3	22.8	pg/g	0.639	3.84
70424-67-8	PCB-57	U	.96	.96	pg/g	0.960	1.92
41464-49-7	PCB-58	U	.96	.96	pg/g	0.960	1.92
PCB-59/62/75	PCB-59/62/75	CU	1.92	1.92	pg/g	1.92	5.76
33025-41-1	PCB-60		9.88	9.43	pg/g	0.639	3.84
PCB-61-76	PCB-61/76/70/74	C	69.1	68.9	pg/g	2.55	7.68
74472-34-7	PCB-63	J	1.04	.865	pg/g	0.639	4.80
52663-58-8	PCB-64		13.0	12.6	pg/g	0.960	1.92
32598-10-0	PCB-66		44.6	44.4	pg/g	0.960	4.80
73575-53-8	PCB-67	U	.96	.96	pg/g	0.960	1.92
73575-52-7	PCB-68	U	.639	.639	pg/g	0.639	1.92
41464-42-0	PCB-72	U	.639	.639	pg/g	0.639	3.84
74338-23-1	PCB-73	U	.96	.96	pg/g	0.960	1.92
32598-13-3	PCB-77		6.51	6.28	pg/g	0.639	1.92
70362-49-1	PCB-78	U	.639	.639	pg/g	0.639	1.92
41464-48-6	PCB-79	J	0.822	.659	pg/g	0.639	3.84
33284-52-5	PCB-80	U	.639	.639	pg/g	0.639	3.84

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945003**	**Date Collected:**	**03/28/2014 15:00**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**5.9**
Client ID:	**CACV-14-49258**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.07 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.639	.639	pg/g	0.639	1.92
52663-62-4	PCB-82		11.0	10.7	pg/g	0.960	4.80
60145-20-2	PCB-83		4.60	4.26	pg/g	0.960	1.92
52663-60-2	PCB-84		20.4	20	pg/g	0.960	1.92
PCB-85-117	PCB-117/116/85	C	17.4	17.1	pg/g	1.92	5.76
PCB-86-125	PCB-86/87/97/109/119/125	C	52.2	51.9	pg/g	3.84	11.5
PCB-88/91	PCB-88/91	C	11.5	11.2	pg/g	1.28	3.84
73575-57-2	PCB-89	U	.639	.639	pg/g	0.639	1.92
PCB-90-113	PCB-113/90/101	C	76.9	76.6	pg/g	1.92	5.76
52663-61-3	PCB-92		13.4	13.1	pg/g	0.960	1.92
PCB-93/100	PCB-93/100	CU	1.92	1.92	pg/g	1.92	3.84
73575-55-0	PCB-94	U	.639	.639	pg/g	0.639	1.92
38379-99-6	PCB-95		61.2	60.9	pg/g	1.28	3.84
73575-54-9	PCB-96	U	.639	.639	pg/g	0.639	1.92
PCB-98/102	PCB-102/98	CJ	1.85	1.5	pg/g	1.28	3.84
38380-01-7	PCB-99		37.6	37	pg/g	1.28	1.92
60145-21-3	PCB-103	U	.639	.639	pg/g	0.639	4.80
56558-16-8	PCB-104	U	.639	.639	pg/g	0.639	1.92
32598-14-4	PCB-105		29.9	29.3	pg/g	0.960	1.92
70424-69-0	PCB-106	U	.96	.96	pg/g	0.960	1.92
70424-68-9	PCB-107	J	4.05	3.77	pg/g	0.639	3.84
PCB-108/124	PCB-108/124	CJ	3.18	2.85	pg/g	1.28	3.84
PCB-110/115	PCB-110/115	C	112	110	pg/g	2.55	3.84
39635-32-0	PCB-111	U	.639	.639	pg/g	0.639	1.92
74472-36-9	PCB-112	U	1.28	1.28	pg/g	1.28	1.92
74472-37-0	PCB-114	J	1.15	.795	pg/g	0.639	1.92
31508-00-6	PCB-118		54.0	52.1	pg/g	1.28	3.84
68194-12-7	PCB-120	U	.639	.639	pg/g	0.639	1.92
56558-18-0	PCB-121	U	.639	.639	pg/g	0.639	1.92
76842-07-4	PCB-122	U	.639	.639	pg/g	0.639	6.62
65510-44-3	PCB-123	J	1.58	1.27	pg/g	0.639	1.92
57465-28-8	PCB-126	U	.639	.639	pg/g	0.639	1.92

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945003**	**Date Collected:**	**03/28/2014 15:00**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**5.9**
Client ID:	**CACV-14-49258**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.07 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.639	.639	pg/g	0.639	1.92
PCB-128/166	PCB-128/166	C	18.5	18.2	pg/g	1.28	3.84
PCB-129-163	PCB-138/163/129	C	126	126	pg/g	2.55	5.76
52663-66-8	PCB-130		6.65	6.3	pg/g	0.960	1.92
61798-70-7	PCB-131	J	1.47	1.09	pg/g	0.639	1.92
38380-05-1	PCB-132		37.9	36.7	pg/g	0.960	1.92
35694-04-3	PCB-133	J	1.20	.864	pg/g	0.639	1.92
52704-70-8	PCB-134		5.95	5.52	pg/g	1.28	1.92
PCB-135/151	PCB-151/135	C	33.4	33.1	pg/g	1.28	3.84
38411-22-2	PCB-136		11.4	11.2	pg/g	0.639	1.92
35694-06-5	PCB-137		5.17	4.68	pg/g	1.28	1.92
PCB-139/140	PCB-139/140	CU	1.64	1.28	pg/g	1.28	3.84
52712-04-6	PCB-141		20.4	20	pg/g	1.28	3.84
41411-61-4	PCB-142	U	.639	.639	pg/g	0.639	1.92
68194-15-0	PCB-143	U	1.28	1.28	pg/g	1.28	1.92
68194-14-9	PCB-144		4.19	3.91	pg/g	0.639	1.92
74472-40-5	PCB-145	U	.639	.639	pg/g	0.639	1.92
51908-16-8	PCB-146		13.6	13	pg/g	0.960	1.92
PCB-147/149	PCB-147/149	C	83.7	82.2	pg/g	1.92	7.68
74472-41-6	PCB-148	U	.639	.639	pg/g	0.639	1.92
68194-08-1	PCB-150	U	.96	.96	pg/g	0.960	1.92
68194-09-2	PCB-152	U	.639	.639	pg/g	0.639	1.92
PCB-153/168	PCB-153/168	C	93.8	93.5	pg/g	1.92	7.68
60145-22-4	PCB-154	U	.639	.639	pg/g	0.639	1.92
33979-03-2	PCB-155	U	.639	.639	pg/g	0.639	1.92
PCB-156/157	PCB-156/157	C	11.5	11.2	pg/g	1.28	3.84
74472-42-7	PCB-158		10.6	10.4	pg/g	0.639	1.92
39635-35-3	PCB-159	J	1.16	.945	pg/g	0.639	1.92
41411-62-5	PCB-160	U	.639	.639	pg/g	0.639	1.92
74472-43-8	PCB-161	U	.96	.96	pg/g	0.960	1.92
39635-34-2	PCB-162	U	.96	.96	pg/g	0.960	1.92
74472-45-0	PCB-164		8.73	8.47	pg/g	0.639	1.92

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945003**	**Date Collected:**	**03/28/2014 15:00**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**5.9**
Client ID:	**CACV-14-49258**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.07 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.639	.639	pg/g	0.639	1.92
52663-72-6	PCB-167		5.02	4.77	pg/g	0.639	1.92
32774-16-6	PCB-169	U	.96	.96	pg/g	0.960	1.92
35065-30-6	PCB-170		31.7	31.3	pg/g	0.639	1.92
PCB-171/173	PCB-173/171	C	9.08	8.79	pg/g	1.28	3.84
52663-74-8	PCB-172		5.39	5.09	pg/g	0.960	1.92
38411-25-5	PCB-174		35.9	35.7	pg/g	1.28	1.92
40186-70-7	PCB-175	J	1.25	1	pg/g	0.960	1.92
52663-65-7	PCB-176		3.61	3.41	pg/g	0.639	1.92
52663-70-4	PCB-177		19.6	19.3	pg/g	0.960	1.92
52663-67-9	PCB-178		6.42	6.16	pg/g	1.28	1.92
52663-64-6	PCB-179		12.9	12.8	pg/g	0.639	1.92
PCB-180/193	PCB-193/180	CU	1.92	1.92	pg/g	1.92	3.84
74472-47-2	PCB-181	U	.96	.96	pg/g	0.960	1.92
60145-23-5	PCB-182	U	.639	.639	pg/g	0.639	1.92
PCB-183/185	PCB-183/185	C	21.5	21.2	pg/g	1.28	3.84
74472-48-3	PCB-184	U	.639	.639	pg/g	0.639	1.92
74472-49-4	PCB-186	U	.639	.639	pg/g	0.639	1.92
52663-68-0	PCB-187		41.3	40.8	pg/g	0.960	1.92
74487-85-7	PCB-188	U	.639	.639	pg/g	0.639	1.92
39635-31-9	PCB-189	J	1.38	1.11	pg/g	0.639	1.92
41411-64-7	PCB-190		6.72	6.5	pg/g	0.960	1.92
74472-50-7	PCB-191	J	1.16	.941	pg/g	0.639	1.92
74472-51-8	PCB-192	U	.639	.639	pg/g	0.639	1.92
35694-08-7	PCB-194		21.3	20.9	pg/g	0.639	1.92
52663-78-2	PCB-195		7.60	7.32	pg/g	0.960	1.92
42740-50-1	PCB-196		8.87	8.58	pg/g	0.639	1.92
PCB-197/200	PCB-197/200	CJ	3.01	2.75	pg/g	1.28	3.84
PCB-198/199	PCB-198/199	C	20.8	20.5	pg/g	1.28	3.84
40186-71-8	PCB-201	J	1.98	1.76	pg/g	0.639	1.92
2136-99-4	PCB-202		3.81	3.52	pg/g	0.960	1.92
52663-76-0	PCB-203		13.1	12.7	pg/g	1.28	1.92

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945003**	**Date Collected:**	**03/28/2014 15:00**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**5.9**
Client ID:	**CACV-14-49258**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.07 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.96	.96	pg/g	0.960	1.92
74472-53-0	PCB-205	J	1.22	.981	pg/g	0.639	1.92
40186-72-9	PCB-206		10.1	9.67	pg/g	0.960	1.92
52663-79-3	PCB-207	J	1.13	.851	pg/g	0.639	1.92
52663-77-1	PCB-208		3.03	2.7	pg/g	0.639	1.92
2051-24-3	PCB-209		9.70	9.33	pg/g	0.639	1.92
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs		7.74	4.63	pg/g		
25323-68-6	Total Tri PCBs		70.1	67.1	pg/g		
26914-33-0	Total Tetra PCBs		295	289	pg/g		
25429-29-2	Total Penta PCBs		514	504	pg/g		
26601-64-9	Total Hexa PCBs		502	492	pg/g		
28655-71-2	Total Hepta PCBs		198	194	pg/g		
55722-26-4	Total Octa PCBs		81.7	79	pg/g		
53742-07-7	Total Nona PCBs		14.3	13.2	pg/g		
DECACB(Tot)	Total Deca PCB		9.70	9.33	pg/g		
1336-36-3	Total PCB Congeners		1690	1650	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		88.9	192	pg/g	46.3	(15%-150%)
13C-3-MoCB		101	192	pg/g	52.7	(15%-150%)
13C-4-DiCB		107	192	pg/g	55.6	(25%-150%)
13C-15-DiCB		142	192	pg/g	73.9	(25%-150%)
13C-19-TrCB		117	192	pg/g	61.1	(25%-150%)
13C-37-TrCB		170	192	pg/g	88.7	(25%-150%)
13C-54-TeCB		145	192	pg/g	75.3	(25%-150%)
13C-77-TeCB		204	192	pg/g	106	(25%-150%)
13C-81-TeCB		200	192	pg/g	104	(25%-150%)
13C-104-PeCB		154	192	pg/g	80.0	(25%-150%)
13C-105-PeCB		177	192	pg/g	92.2	(25%-150%)
13C-114-PeCB		168	192	pg/g	87.3	(25%-150%)
13C-118-PeCB		176	192	pg/g	91.7	(25%-150%)
13C-123-PeCB		181	192	pg/g	94.2	(25%-150%)
13C-126-PeCB		187	192	pg/g	97.4	(25%-150%)
13C-155-HxCB		146	192	pg/g	76.2	(25%-150%)
13C-156-HxCB	C	346	384	pg/g	90.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		168	192	pg/g	87.3	(25%-150%)
13C-169-HxCB		199	192	pg/g	103	(25%-150%)
13C-188-HpCB		104	192	pg/g	54.3	(25%-150%)
13C-189-HpCB		152	192	pg/g	79.2	(25%-150%)
13C-202-OcCB		113	192	pg/g	58.9	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945003**	**Date Collected:**	**03/28/2014 15:00**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**5.9**
Client ID:	**CACV-14-49258**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/17/2014 06:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_5-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.07 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		174	192	pg/g	90.8	(25%-150%)
13C-206-NoCB		145	192	pg/g	75.5	(25%-150%)
13C-208-NoCB		139	192	pg/g	72.3	(25%-150%)
13C-209-DeCB		146	192	pg/g	76.0	(25%-150%)
13C-28-TrCB		149	192	pg/g	77.4	(30%-135%)
13C-111-PeCB		161	192	pg/g	84.0	(30%-135%)
13C-178-HpCB		139	192	pg/g	72.2	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945004**	**Date Collected:**	**03/28/2014 15:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**9.9**
Client ID:	**CACV-14-49259**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/18/2014 09:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_7-10**			**Dilution:**	**5**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.49 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	4.83	4.83	pg/g	4.83	24.2
2051-61-8	PCB-2		10.9	10	pg/g	4.83	9.66
2051-62-9	PCB-3		15.3	15.1	pg/g	4.83	9.66
13029-08-8	PCB-4	U	4.83	4.83	pg/g	4.83	19.3
16605-91-7	PCB-5	U	4.83	4.83	pg/g	4.83	19.3
25569-80-6	PCB-6	U	4.83	4.83	pg/g	4.83	9.66
33284-50-3	PCB-7	U	4.83	4.83	pg/g	4.83	19.3
34883-43-7	PCB-8	J	13.7	13.2	pg/g	4.83	96.6
34883-39-1	PCB-9	U	4.83	4.83	pg/g	4.83	9.66
33146-45-1	PCB-10	U	4.83	4.83	pg/g	4.83	19.3
2050-67-1	PCB-11	J	14.8	14.2	pg/g	9.66	242
PCB-12/13	PCB-13/12	C	57.1	56.4	pg/g	4.83	38.7
34883-41-5	PCB-14	U	4.83	4.83	pg/g	4.83	19.3
2050-68-2	PCB-15	J	48.5	47.8	pg/g	4.83	96.6
38444-78-9	PCB-16	J	8.48	8.17	pg/g	4.83	19.3
37680-66-3	PCB-17	J	12.2	11.8	pg/g	3.22	19.3
PCB-18/30	PCB-18/30	C	23.3	23.1	pg/g	6.45	19.3
38444-73-4	PCB-19	U	3.38	3.22	pg/g	3.22	9.66
PCB-20/28	PCB-20/28	CJ	76.3	76.1	pg/g	6.45	96.6
PCB-21/33	PCB-21/33	CJ	33.0	32.8	pg/g	6.45	38.7
38444-85-8	PCB-22		24.5	24.3	pg/g	3.22	19.3
55720-44-0	PCB-23	U	3.22	3.22	pg/g	3.22	9.66
55702-45-9	PCB-24	U	3.22	3.22	pg/g	3.22	9.66
55712-37-3	PCB-25	J	8.35	8.18	pg/g	3.22	9.66
PCB-26/29	PCB-26/29	CJ	15.2	15.1	pg/g	6.45	19.3
38444-76-7	PCB-27	U	3.22	3.22	pg/g	3.22	9.66
16606-02-3	PCB-31		63.7	63.5	pg/g	3.22	48.3
38444-77-8	PCB-32	J	7.23	7.07	pg/g	3.22	9.66
37680-68-5	PCB-34	U	3.22	3.22	pg/g	3.22	9.66
37680-69-6	PCB-35	J	13.7	13.5	pg/g	3.22	19.3
38444-87-0	PCB-36	U	3.22	3.22	pg/g	3.22	19.3
38444-90-5	PCB-37	J	41.0	40.7	pg/g	3.22	96.6

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945004**	**Date Collected:**	**03/28/2014 15:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**9.9**
Client ID:	**CACV-14-49259**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/18/2014 09:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_7-10**			**Dilution:**	**5**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.49 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	3.22	3.22	pg/g	3.22	9.66
38444-88-1	PCB-39	J	3.78	3.48	pg/g	3.22	19.3
PCB-40/71	PCB-40/71	C	36.7	36.3	pg/g	6.45	19.3
52663-59-9	PCB-41	U	6.45	6.45	pg/g	6.45	9.66
36559-22-5	PCB-42		25.6	25.2	pg/g	4.83	9.66
70362-46-8	PCB-43	U	6.45	6.45	pg/g	6.45	19.3
PCB-44/47/65	PCB-44/65/47	C	111	110	pg/g	16.1	29.0
PCB-45/51	PCB-45/51	CJ	13.4	13	pg/g	6.45	19.3
41464-47-5	PCB-46	J	4.52	4.26	pg/g	3.22	9.66
70362-47-9	PCB-48		14.2	13.7	pg/g	3.22	9.66
PCB-49/69	PCB-69/49	C	72.9	72.6	pg/g	6.45	19.3
PCB-50/53	PCB-50/53	CJ	15.4	15.1	pg/g	6.45	19.3
35693-99-3	PCB-52		160	159	pg/g	6.45	9.66
15968-05-5	PCB-54	U	3.22	3.22	pg/g	3.22	9.66
74338-24-2	PCB-55	U	4.83	4.83	pg/g	4.83	9.66
41464-43-1	PCB-56		69.4	68.9	pg/g	3.22	19.3
70424-67-8	PCB-57	U	4.83	4.83	pg/g	4.83	9.66
41464-49-7	PCB-58	U	4.83	4.83	pg/g	4.83	9.66
PCB-59/62/75	PCB-59/62/75	CU	9.66	9.66	pg/g	9.66	29.0
33025-41-1	PCB-60		30.0	29.5	pg/g	3.22	19.3
PCB-61-76	PCB-61/76/70/74	C	235	235	pg/g	12.9	38.7
74472-34-7	PCB-63	J	3.89	3.71	pg/g	3.22	24.2
52663-58-8	PCB-64		40.9	40.5	pg/g	4.83	9.66
32598-10-0	PCB-66		133	133	pg/g	4.83	24.2
73575-53-8	PCB-67	U	4.83	4.83	pg/g	4.83	9.66
73575-52-7	PCB-68	U	3.22	3.22	pg/g	3.22	9.66
41464-42-0	PCB-72	U	3.22	3.22	pg/g	3.22	19.3
74338-23-1	PCB-73	U	4.83	4.83	pg/g	4.83	9.66
32598-13-3	PCB-77		27.4	27.1	pg/g	3.22	9.66
70362-49-1	PCB-78	U	3.22	3.22	pg/g	3.22	9.66
41464-48-6	PCB-79	J	10.4	10.3	pg/g	3.22	19.3
33284-52-5	PCB-80	U	3.22	3.22	pg/g	3.22	19.3

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945004**	**Date Collected:**	**03/28/2014 15:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**9.9**
Client ID:	**CACV-14-49259**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/18/2014 09:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_7-10**			**Dilution:**	**5**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.49 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	3.22	3.22	pg/g	3.22	9.66
52663-62-4	PCB-82		88.4	88	pg/g	4.83	24.2
60145-20-2	PCB-83		49.9	49.6	pg/g	4.83	9.66
52663-60-2	PCB-84		303	303	pg/g	4.83	9.66
PCB-85-117	PCB-117/116/85	C	141	141	pg/g	9.66	29.0
PCB-86-125	PCB-86/87/97/109/119/125	C	475	475	pg/g	19.3	58.0
PCB-88/91	PCB-88/91	C	158	157	pg/g	6.45	19.3
73575-57-2	PCB-89	J	6.37	6.04	pg/g	3.22	9.66
PCB-90-113	PCB-113/90/101	C	769	768	pg/g	9.66	29.0
52663-61-3	PCB-92		183	182	pg/g	4.83	9.66
PCB-93/100	PCB-93/100	CU	9.66	9.66	pg/g	9.66	19.3
73575-55-0	PCB-94	J	3.93	3.45	pg/g	3.22	9.66
38379-99-6	PCB-95		970	969	pg/g	6.45	19.3
73575-54-9	PCB-96	J	4.61	4.43	pg/g	3.22	9.66
PCB-98/102	PCB-102/98	C	23.8	23.5	pg/g	6.45	19.3
38380-01-7	PCB-99		325	324	pg/g	6.45	9.66
60145-21-3	PCB-103	J	4.13	3.85	pg/g	3.22	24.2
56558-16-8	PCB-104	U	3.22	3.22	pg/g	3.22	9.66
32598-14-4	PCB-105		145	144	pg/g	4.83	9.66
70424-69-0	PCB-106	U	4.83	4.83	pg/g	4.83	9.66
70424-68-9	PCB-107		23.9	23.6	pg/g	3.22	19.3
PCB-108/124	PCB-108/124	C	22.9	22.6	pg/g	6.45	19.3
PCB-110/115	PCB-110/115	C	1440	1430	pg/g	12.9	19.3
39635-32-0	PCB-111	U	3.22	3.22	pg/g	3.22	9.66
74472-36-9	PCB-112	U	6.45	6.45	pg/g	6.45	9.66
74472-37-0	PCB-114	J	4.12	3.77	pg/g	3.22	9.66
31508-00-6	PCB-118		329	327	pg/g	6.45	19.3
68194-12-7	PCB-120	U	3.22	3.22	pg/g	3.22	9.66
56558-18-0	PCB-121	U	3.22	3.22	pg/g	3.22	9.66
76842-07-4	PCB-122	U	8.31	3.22	pg/g	3.22	33.3
65510-44-3	PCB-123		11.1	10.8	pg/g	3.22	9.66
57465-28-8	PCB-126	U	3.22	3.22	pg/g	3.22	9.66

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945004**	**Date Collected:**	**03/28/2014 15:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**9.9**
Client ID:	**CACV-14-49259**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/18/2014 09:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_7-10**			**Dilution:**	**5**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.49 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	3.22	3.22	pg/g	3.22	9.66
PCB-128/166	PCB-128/166	C	268	268	pg/g	6.45	19.3
PCB-129-163	PCB-138/163/129	C	1690	1690	pg/g	12.9	29.0
52663-66-8	PCB-130		101	100	pg/g	4.83	9.66
61798-70-7	PCB-131		21.4	21	pg/g	3.22	9.66
38380-05-1	PCB-132		554	553	pg/g	4.83	9.66
35694-04-3	PCB-133		17.3	16.9	pg/g	3.22	9.66
52704-70-8	PCB-134		82.2	81.8	pg/g	6.45	9.66
PCB-135/151	PCB-151/135	C	391	391	pg/g	6.45	19.3
38411-22-2	PCB-136		160	160	pg/g	3.22	9.66
35694-06-5	PCB-137		95.2	94.7	pg/g	6.45	9.66
PCB-139/140	PCB-139/140	C	26.0	25.7	pg/g	6.45	19.3
52712-04-6	PCB-141		255	254	pg/g	6.45	19.3
41411-61-4	PCB-142	U	3.22	3.22	pg/g	3.22	9.66
68194-15-0	PCB-143	U	6.45	6.45	pg/g	6.45	9.66
68194-14-9	PCB-144		49.5	49.2	pg/g	3.22	9.66
74472-40-5	PCB-145	U	3.22	3.22	pg/g	3.22	9.66
51908-16-8	PCB-146		186	185	pg/g	4.83	9.66
PCB-147/149	PCB-147/149	C	1020	1020	pg/g	9.66	38.7
74472-41-6	PCB-148	U	3.22	3.22	pg/g	3.22	9.66
68194-08-1	PCB-150	U	4.83	4.83	pg/g	4.83	9.66
68194-09-2	PCB-152	U	3.22	3.22	pg/g	3.22	9.66
PCB-153/168	PCB-153/168	C	1090	1090	pg/g	9.66	38.7
60145-22-4	PCB-154	J	8.20	7.93	pg/g	3.22	9.66
33979-03-2	PCB-155	U	3.22	3.22	pg/g	3.22	9.66
PCB-156/157	PCB-156/157	C	112	112	pg/g	6.45	19.3
74472-42-7	PCB-158		141	140	pg/g	3.22	9.66
39635-35-3	PCB-159	J	9.18	8.97	pg/g	3.22	9.66
41411-62-5	PCB-160	U	3.22	3.22	pg/g	3.22	9.66
74472-43-8	PCB-161	U	4.83	4.83	pg/g	4.83	9.66
39635-34-2	PCB-162	J	5.52	5.23	pg/g	4.83	9.66
74472-45-0	PCB-164		110	109	pg/g	3.22	9.66

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945004**	**Date Collected:**	**03/28/2014 15:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**9.9**
Client ID:	**CACV-14-49259**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/18/2014 09:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_7-10**			**Dilution:**	**5**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.49 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	3.22	3.22	pg/g	3.22	9.66
52663-72-6	PCB-167		67.5	67.3	pg/g	3.22	9.66
32774-16-6	PCB-169	U	4.83	4.83	pg/g	4.83	9.66
35065-30-6	PCB-170		270	269	pg/g	3.22	9.66
PCB-171/173	PCB-173/171	C	78.1	77.8	pg/g	6.45	19.3
52663-74-8	PCB-172		42.1	41.9	pg/g	4.83	9.66
38411-25-5	PCB-174		262	261	pg/g	6.45	9.66
40186-70-7	PCB-175	J	9.11	8.86	pg/g	4.83	9.66
52663-65-7	PCB-176		26.0	25.8	pg/g	3.22	9.66
52663-70-4	PCB-177		147	146	pg/g	4.83	9.66
52663-67-9	PCB-178		42.5	42.2	pg/g	6.45	9.66
52663-64-6	PCB-179		83.6	83.4	pg/g	3.22	9.66
PCB-180/193	PCB-193/180	CU	9.66	9.66	pg/g	9.66	19.3
74472-47-2	PCB-181	U	4.83	4.83	pg/g	4.83	9.66
60145-23-5	PCB-182	U	3.22	3.22	pg/g	3.22	9.66
PCB-183/185	PCB-183/185	C	159	159	pg/g	6.45	19.3
74472-48-3	PCB-184	U	3.22	3.22	pg/g	3.22	9.66
74472-49-4	PCB-186	U	3.22	3.22	pg/g	3.22	9.66
52663-68-0	PCB-187		282	281	pg/g	4.83	9.66
74487-85-7	PCB-188	U	3.22	3.22	pg/g	3.22	9.66
39635-31-9	PCB-189		11.1	10.8	pg/g	3.22	9.66
41411-64-7	PCB-190		52.4	52.2	pg/g	4.83	9.66
74472-50-7	PCB-191	J	9.47	9.25	pg/g	3.22	9.66
74472-51-8	PCB-192	U	3.22	3.22	pg/g	3.22	9.66
35694-08-7	PCB-194		96.2	95.9	pg/g	3.22	9.66
52663-78-2	PCB-195		39.5	39.2	pg/g	4.83	9.66
42740-50-1	PCB-196		42.6	42.3	pg/g	3.22	9.66
PCB-197/200	PCB-197/200	CJ	14.2	13.9	pg/g	6.45	19.3
PCB-198/199	PCB-198/199	C	102	101	pg/g	6.45	19.3
40186-71-8	PCB-201		10.2	9.97	pg/g	3.22	9.66
2136-99-4	PCB-202		20.2	19.9	pg/g	4.83	9.66
52663-76-0	PCB-203		62.7	62.3	pg/g	6.45	9.66

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945004**	**Date Collected:**	**03/28/2014 15:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**9.9**
Client ID:	**CACV-14-49259**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/18/2014 09:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_7-10**			**Dilution:**	**5**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.49 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	4.83	4.83	pg/g	4.83	9.66
74472-53-0	PCB-205	J	5.17	4.94	pg/g	3.22	9.66
40186-72-9	PCB-206		30.8	30.3	pg/g	4.83	9.66
52663-79-3	PCB-207	J	3.90	3.62	pg/g	3.22	9.66
52663-77-1	PCB-208	J	8.67	8.34	pg/g	3.22	9.66
2051-24-3	PCB-209		20.0	19.7	pg/g	3.22	9.66
27323-18-8	Total Mono PCBs		26.2	25.2	pg/g		
25512-42-9	Total Di PCBs		134	132	pg/g		
25323-68-6	Total Tri PCBs		334	328	pg/g		
26914-33-0	Total Tetra PCBs		1000	998	pg/g		
25429-29-2	Total Penta PCBs		5480	5470	pg/g		
26601-64-9	Total Hexa PCBs		6460	6450	pg/g		
28655-71-2	Total Hepta PCBs		1470	1470	pg/g		
55722-26-4	Total Octa PCBs		393	390	pg/g		
53742-07-7	Total Nona PCBs		43.3	42.3	pg/g		
DECACB(Tot)	Total Deca PCB		20.0	19.7	pg/g		
1336-36-3	Total PCB Congeners		15400	15300	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		72.9	193	pg/g	37.7	(15%-150%)
13C-3-MoCB		92.9	193	pg/g	48.1	(15%-150%)
13C-4-DiCB		92.6	193	pg/g	47.9	(25%-150%)
13C-15-DiCB		126	193	pg/g	65.0	(25%-150%)
13C-19-TrCB		96.1	193	pg/g	49.7	(25%-150%)
13C-37-TrCB		147	193	pg/g	75.9	(25%-150%)
13C-54-TeCB		110	193	pg/g	56.8	(25%-150%)
13C-77-TeCB		184	193	pg/g	95.4	(25%-150%)
13C-81-TeCB		183	193	pg/g	94.7	(25%-150%)
13C-104-PeCB		144	193	pg/g	74.3	(25%-150%)
13C-105-PeCB		160	193	pg/g	82.8	(25%-150%)
13C-114-PeCB		154	193	pg/g	79.7	(25%-150%)
13C-118-PeCB		161	193	pg/g	83.1	(25%-150%)
13C-123-PeCB		166	193	pg/g	85.9	(25%-150%)
13C-126-PeCB		165	193	pg/g	85.3	(25%-150%)
13C-155-HxCB		136	193	pg/g	70.4	(25%-150%)
13C-156-HxCB	C	333	387	pg/g	86.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		159	193	pg/g	82.5	(25%-150%)
13C-169-HxCB		186	193	pg/g	96.1	(25%-150%)
13C-188-HpCB		93.5	193	pg/g	48.4	(25%-150%)
13C-189-HpCB		144	193	pg/g	74.7	(25%-150%)
13C-202-OcCB		95.6	193	pg/g	49.5	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5945004**	**Date Collected:**	**03/28/2014 15:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**9.9**
Client ID:	**CACV-14-49259**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/18/2014 09:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_7-10**			**Dilution:**	**5**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**11.49 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		162	193	pg/g	83.6	(25%-150%)
13C-206-NoCB		124	193	pg/g	64.2	(25%-150%)
13C-208-NoCB		121	193	pg/g	62.6	(25%-150%)
13C-209-DeCB		112	193	pg/g	57.8	(25%-150%)
13C-28-TrCB		130	193	pg/g	67.5	(30%-135%)
13C-111-PeCB		144	193	pg/g	74.7	(30%-135%)
13C-178-HpCB		109	193	pg/g	56.3	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: 2014-3096

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010162	LCS for batch 25623	13C-1-MoCB		43.3	(15%-140%)
		13C-3-MoCB		44.6	(15%-140%)
		13C-4-DiCB		47.6	(30%-140%)
		13C-15-DiCB		59.5	(30%-140%)
		13C-19-TrCB		52.5	(30%-140%)
		13C-37-TrCB		77.7	(30%-140%)
		13C-54-TeCB		70.4	(30%-140%)
		13C-77-TeCB		86.3	(30%-140%)
		13C-81-TeCB		87.3	(30%-140%)
		13C-104-PeCB		73.9	(30%-140%)
		13C-105-PeCB		76.2	(30%-140%)
		13C-114-PeCB		71.6	(30%-140%)
		13C-118-PeCB		77.5	(30%-140%)
		13C-123-PeCB		80.8	(30%-140%)
		13C-126-PeCB		79.6	(30%-140%)
		13C-155-HxCB		78.8	(30%-140%)
		13C-156-HxCB	C	80.3	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		76.4	(30%-140%)
		13C-169-HxCB		88.7	(30%-140%)
		13C-188-HpCB		53.7	(30%-140%)
		13C-189-HpCB		74.2	(30%-140%)
		13C-202-OcCB		60.9	(30%-140%)
		13C-205-OcCB		85.1	(30%-140%)
		13C-206-NoCB		73.6	(30%-140%)
		13C-208-NoCB		69.4	(30%-140%)
		13C-209-DeCB		81.4	(30%-140%)
		13C-28-TrCB		67.5	(40%-125%)
		13C-111-PeCB		73.8	(40%-125%)
		13C-178-HpCB		75.3	(40%-125%)
12010163	LCSD for batch 25623	13C-1-MoCB		41.0	(15%-140%)
		13C-3-MoCB		42.1	(15%-140%)
		13C-4-DiCB		44.5	(30%-140%)
		13C-15-DiCB		57.0	(30%-140%)
		13C-19-TrCB		50.7	(30%-140%)
		13C-37-TrCB		74.1	(30%-140%)
		13C-54-TeCB		64.0	(30%-140%)
		13C-77-TeCB		80.8	(30%-140%)
		13C-81-TeCB		81.5	(30%-140%)
		13C-104-PeCB		70.0	(30%-140%)
		13C-105-PeCB		69.6	(30%-140%)
		13C-114-PeCB		66.0	(30%-140%)
		13C-118-PeCB		71.7	(30%-140%)
		13C-123-PeCB		76.0	(30%-140%)
		13C-126-PeCB		74.6	(30%-140%)
		13C-155-HxCB		72.0	(30%-140%)
		13C-156-HxCB	C	72.5	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		68.8	(30%-140%)
		13C-169-HxCB		78.4	(30%-140%)
		13C-188-HpCB		48.7	(30%-140%)
		13C-189-HpCB		64.3	(30%-140%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3096

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010163	LCSD for batch 25623	13C-202-OcCB		56.4	(30%-140%)
		13C-205-OcCB		77.4	(30%-140%)
		13C-206-NoCB		68.1	(30%-140%)
		13C-208-NoCB		64.3	(30%-140%)
		13C-209-DeCB		71.8	(30%-140%)
		13C-28-TrCB		66.0	(40%-125%)
		13C-111-PeCB		71.1	(40%-125%)
		13C-178-HpCB		69.2	(40%-125%)
12010161	MB for batch 25623	13C-1-MoCB		59.0	(15%-150%)
		13C-3-MoCB		65.8	(15%-150%)
		13C-4-DiCB		65.8	(25%-150%)
		13C-15-DiCB		77.2	(25%-150%)
		13C-19-TrCB		70.2	(25%-150%)
		13C-37-TrCB		102	(25%-150%)
		13C-54-TeCB		97.8	(25%-150%)
		13C-77-TeCB		95.7	(25%-150%)
		13C-81-TeCB		99.0	(25%-150%)
		13C-104-PeCB		103	(25%-150%)
		13C-105-PeCB		94.9	(25%-150%)
		13C-114-PeCB		91.8	(25%-150%)
		13C-118-PeCB		96.8	(25%-150%)
		13C-123-PeCB		98.8	(25%-150%)
		13C-126-PeCB		97.3	(25%-150%)
		13C-155-HxCB		100	(25%-150%)
		13C-156-HxCB	C	94.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		89.7	(25%-150%)
		13C-169-HxCB		105	(25%-150%)
		13C-188-HpCB		75.9	(25%-150%)
		13C-189-HpCB		92.0	(25%-150%)
		13C-202-OcCB		73.1	(25%-150%)
		13C-205-OcCB		105	(25%-150%)
		13C-206-NoCB		88.2	(25%-150%)
		13C-208-NoCB		85.7	(25%-150%)
		13C-209-DeCB		97.6	(25%-150%)
		13C-28-TrCB		93.2	(30%-135%)
		13C-111-PeCB		83.4	(30%-135%)
		13C-178-HpCB		86.6	(30%-135%)
5945001	CACV-14-49256	13C-1-MoCB		42.2	(15%-150%)
		13C-3-MoCB		48.0	(15%-150%)
		13C-4-DiCB		51.0	(25%-150%)
		13C-15-DiCB		78.0	(25%-150%)
		13C-19-TrCB		62.8	(25%-150%)
		13C-37-TrCB		91.3	(25%-150%)
		13C-54-TeCB		74.4	(25%-150%)
		13C-77-TeCB		109	(25%-150%)
		13C-81-TeCB		108	(25%-150%)
		13C-104-PeCB		81.4	(25%-150%)
		13C-105-PeCB		91.8	(25%-150%)
		13C-114-PeCB		88.1	(25%-150%)
		13C-118-PeCB		93.2	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3096

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5945001	CACV-14-49256	13C-123-PeCB		96.2	(25%-150%)
		13C-126-PeCB		98.2	(25%-150%)
		13C-155-HxCB		79.2	(25%-150%)
		13C-156-HxCB	C	90.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		86.6	(25%-150%)
		13C-169-HxCB		103	(25%-150%)
		13C-188-HpCB		60.9	(25%-150%)
		13C-189-HpCB		80.7	(25%-150%)
		13C-202-OcCB		66.0	(25%-150%)
		13C-205-OcCB		90.0	(25%-150%)
		13C-206-NoCB		74.1	(25%-150%)
		13C-208-NoCB		75.0	(25%-150%)
		13C-209-DeCB	Q	63.5	(25%-150%)
		13C-28-TrCB		77.4	(30%-135%)
		13C-111-PeCB		85.8	(30%-135%)
		13C-178-HpCB		76.9	(30%-135%)
12010164	CACV-14-49256(5945001MS)	13C-1-MoCB		46.1	(15%-150%)
		13C-3-MoCB		52.3	(15%-150%)
		13C-4-DiCB		54.4	(25%-150%)
		13C-15-DiCB		87.9	(25%-150%)
		13C-19-TrCB		69.4	(25%-150%)
		13C-37-TrCB		101	(25%-150%)
		13C-54-TeCB		77.1	(25%-150%)
		13C-77-TeCB		119	(25%-150%)
		13C-81-TeCB		119	(25%-150%)
		13C-104-PeCB		85.6	(25%-150%)
		13C-105-PeCB		98.0	(25%-150%)
		13C-114-PeCB		92.8	(25%-150%)
		13C-118-PeCB		97.2	(25%-150%)
		13C-123-PeCB		102	(25%-150%)
		13C-126-PeCB		109	(25%-150%)
		13C-155-HxCB		80.4	(25%-150%)
		13C-156-HxCB	C	93.9	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		90.2	(25%-150%)
		13C-169-HxCB		103	(25%-150%)
		13C-188-HpCB		64.4	(25%-150%)
		13C-189-HpCB		90.1	(25%-150%)
		13C-202-OcCB		72.0	(25%-150%)
		13C-205-OcCB		101	(25%-150%)
		13C-206-NoCB		82.1	(25%-150%)
		13C-208-NoCB		83.3	(25%-150%)
		13C-209-DeCB	Q	78.9	(25%-150%)
		13C-28-TrCB		83.1	(30%-135%)
		13C-111-PeCB		91.2	(30%-135%)
		13C-178-HpCB		82.6	(30%-135%)
12010165	CACV-14-49256(5945001MSD)	13C-1-MoCB		46.7	(15%-150%)
		13C-3-MoCB		53.4	(15%-150%)
		13C-4-DiCB		54.5	(25%-150%)
		13C-15-DiCB		78.0	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3096

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010165	CACV-14-49256(5945001MSD)	13C-19-TrCB		64.7	(25%-150%)
		13C-37-TrCB		99.2	(25%-150%)
		13C-54-TeCB		81.3	(25%-150%)
		13C-77-TeCB		117	(25%-150%)
		13C-81-TeCB		116	(25%-150%)
		13C-104-PeCB		87.4	(25%-150%)
		13C-105-PeCB		101	(25%-150%)
		13C-114-PeCB		96.2	(25%-150%)
		13C-118-PeCB		98.2	(25%-150%)
		13C-123-PeCB		102	(25%-150%)
		13C-126-PeCB		109	(25%-150%)
		13C-155-HxCB		81.0	(25%-150%)
		13C-156-HxCB	C	95.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		90.4	(25%-150%)
		13C-169-HxCB		106	(25%-150%)
		13C-188-HpCB		99.0	(25%-150%)
		13C-189-HpCB		138	(25%-150%)
		13C-202-OcCB		109	(25%-150%)
		13C-205-OcCB		168 *	(25%-150%)
		13C-206-NoCB		132	(25%-150%)
		13C-208-NoCB		127	(25%-150%)
		13C-209-DeCB	Q	116	(25%-150%)
		13C-28-TrCB		85.2	(30%-135%)
		13C-111-PeCB		91.7	(30%-135%)
		13C-178-HpCB		82.0	(30%-135%)
5945002	CACV-14-49257	13C-1-MoCB		32.9	(15%-150%)
		13C-3-MoCB		41.2	(15%-150%)
		13C-4-DiCB		44.4	(25%-150%)
		13C-15-DiCB		70.4	(25%-150%)
		13C-19-TrCB		55.8	(25%-150%)
		13C-37-TrCB		83.3	(25%-150%)
		13C-54-TeCB		63.8	(25%-150%)
		13C-77-TeCB		96.3	(25%-150%)
		13C-81-TeCB		98.0	(25%-150%)
		13C-104-PeCB		72.7	(25%-150%)
		13C-105-PeCB		80.8	(25%-150%)
		13C-114-PeCB		76.2	(25%-150%)
		13C-118-PeCB		82.6	(25%-150%)
		13C-123-PeCB		85.8	(25%-150%)
		13C-126-PeCB		90.5	(25%-150%)
		13C-155-HxCB		70.9	(25%-150%)
		13C-156-HxCB	C	79.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		76.7	(25%-150%)
		13C-169-HxCB		90.0	(25%-150%)
		13C-188-HpCB		53.9	(25%-150%)
		13C-189-HpCB		74.5	(25%-150%)
		13C-202-OcCB		59.5	(25%-150%)
		13C-205-OcCB		82.6	(25%-150%)
		13C-206-NoCB		66.7	(25%-150%)
		13C-208-NoCB		66.2	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3096

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)		Acceptance Limits
5945002	CACV-14-49257	13C-209-DeCB		68.8		(25%-150%)
		13C-28-TrCB		67.9		(30%-135%)
		13C-111-PeCB		74.9		(30%-135%)
		13C-178-HpCB		69.9		(30%-135%)
5945003	CACV-14-49258	13C-1-MoCB		46.3		(15%-150%)
		13C-3-MoCB		52.7		(15%-150%)
		13C-4-DiCB		55.6		(25%-150%)
		13C-15-DiCB		73.9		(25%-150%)
		13C-19-TrCB		61.1		(25%-150%)
		13C-37-TrCB		88.7		(25%-150%)
		13C-54-TeCB		75.3		(25%-150%)
		13C-77-TeCB		106		(25%-150%)
		13C-81-TeCB		104		(25%-150%)
		13C-104-PeCB		80.0		(25%-150%)
		13C-105-PeCB		92.2		(25%-150%)
		13C-114-PeCB		87.3		(25%-150%)
		13C-118-PeCB		91.7		(25%-150%)
		13C-123-PeCB		94.2		(25%-150%)
		13C-126-PeCB		97.4		(25%-150%)
		13C-155-HxCB		76.2		(25%-150%)
		13C-156-HxCB	C	90.2		(25%-150%)
		13C-157-HxCB	C156L			
		13C-167-HxCB		87.3		(25%-150%)
		13C-169-HxCB		103		(25%-150%)
		13C-188-HpCB		54.3		(25%-150%)
		13C-189-HpCB		79.2		(25%-150%)
		13C-202-OcCB		58.9		(25%-150%)
		13C-205-OcCB		90.8		(25%-150%)
		13C-206-NoCB		75.5		(25%-150%)
		13C-208-NoCB		72.3		(25%-150%)
		13C-209-DeCB		76.0		(25%-150%)
		13C-28-TrCB		77.4		(30%-135%)
		13C-111-PeCB		84.0		(30%-135%)
		13C-178-HpCB		72.2		(30%-135%)
5945004	CACV-14-49259	13C-1-MoCB		37.7	D	(15%-150%)
		13C-3-MoCB		48.1	D	(15%-150%)
		13C-4-DiCB		47.9	D	(25%-150%)
		13C-15-DiCB		65.0	D	(25%-150%)
		13C-19-TrCB		49.7	D	(25%-150%)
		13C-37-TrCB		75.9	D	(25%-150%)
		13C-54-TeCB		56.8	D	(25%-150%)
		13C-77-TeCB		95.4	D	(25%-150%)
		13C-81-TeCB		94.7	D	(25%-150%)
		13C-104-PeCB		74.3	D	(25%-150%)
		13C-105-PeCB		82.8	D	(25%-150%)
		13C-114-PeCB		79.7	D	(25%-150%)
		13C-118-PeCB		83.1	D	(25%-150%)
		13C-123-PeCB		85.9	D	(25%-150%)
		13C-126-PeCB		85.3	D	(25%-150%)
		13C-155-HxCB		70.4	D	(25%-150%)
		13C-156-HxCB	C	86.2	D	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 2014-3096

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)		Acceptance Limits
5945004	CACV-14-49259	13C-157-HxCB	C156L			
		13C-167-HxCB		82.5	D	(25%-150%)
		13C-169-HxCB		96.1	D	(25%-150%)
		13C-188-HpCB		48.4	D	(25%-150%)
		13C-189-HpCB		74.7	D	(25%-150%)
		13C-202-OcCB		49.5	D	(25%-150%)
		13C-205-OcCB		83.6	D	(25%-150%)
		13C-206-NoCB		64.2	D	(25%-150%)
		13C-208-NoCB		62.6	D	(25%-150%)
		13C-209-DeCB		57.8	D	(25%-150%)
		13C-28-TrCB		67.5	D	(30%-135%)
		13C-111-PeCB		74.7	D	(30%-135%)
		13C-178-HpCB		56.3	D	(30%-135%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3096**
Client ID: **LCS for batch 25623**
Lab Sample ID: **12010162**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample**
Matrix: **SOLID**
Analysis Date: **04/16/2014 11:44**
Dilution: **1**
Prep Batch ID: **25623**
Batch ID: **25626**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS	PCB-1	50.0		42.4	84.8	50-150
2051-62-9	LCS	PCB-3	50.0		46.4	92.9	50-150
13029-08-8	LCS	PCB-4	50.0		42.3	84.6	50-150
2050-68-2	LCS	PCB-15	50.0		47.1	94.2	50-150
38444-73-4	LCS	PCB-19	50.0		48.2	96.4	50-150
38444-90-5	LCS	PCB-37	50.0		46.9	93.8	50-150
15968-05-5	LCS	PCB-54	100		91.4	91.4	50-150
32598-13-3	LCS	PCB-77	100		86.7	86.7	50-150
70362-50-4	LCS	PCB-81	100		95.5	95.5	50-150
56558-16-8	LCS	PCB-104	100		98.6	98.6	50-150
32598-14-4	LCS	PCB-105	100		106	106	50-150
74472-37-0	LCS	PCB-114	100		102	102	50-150
31508-00-6	LCS	PCB-118	100		88.0	88	50-150
65510-44-3	LCS	PCB-123	100		91.5	91.5	50-150
57465-28-8	LCS	PCB-126	100		101	101	50-150
33979-03-2	LCS	PCB-155	100		97.4	97.4	50-150
38380-08-4	LCS	PCB-156/157	200	C	221	111	50-150
52663-72-6	LCS	PCB-167	100		120	120	50-150
32774-16-6	LCS	PCB-169	100		102	102	50-150
74487-85-7	LCS	PCB-188	100		102	102	50-150
39635-31-9	LCS	PCB-189	100		105	105	50-150
2136-99-4	LCS	PCB-202	150		151	101	50-150
74472-53-0	LCS	PCB-205	150		149	99.2	50-150
40186-72-9	LCS	PCB-206	150		144	96.2	50-150
52663-77-1	LCS	PCB-208	150		157	105	50-150
2051-24-3	LCS	PCB-209	150		141	93.9	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3096**
Client ID: **LCSD for batch 25623**
Lab Sample ID: **12010163**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample Duplicate**
Matrix: **SOLID**
Analysis Date: **04/16/2014 12:52**
Dilution: **1**
Prep Batch ID: **25623**
Batch ID: **25626**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	PCB-1	50.0		41.7	83.4	50-150	1.68	0-20
2051-62-9	LCSD	PCB-3	50.0		46.0	92	50-150	0.939	0-20
13029-08-8	LCSD	PCB-4	50.0		42.2	84.5	50-150	0.156	0-20
2050-68-2	LCSD	PCB-15	50.0		48.7	97.4	50-150	3.32	0-20
38444-73-4	LCSD	PCB-19	50.0		48.0	95.9	50-150	0.532	0-20
38444-90-5	LCSD	PCB-37	50.0		46.6	93.2	50-150	0.650	0-20
15968-05-5	LCSD	PCB-54	100		94.2	94.2	50-150	2.94	0-20
32598-13-3	LCSD	PCB-77	100		87.1	87.1	50-150	0.430	0-20
70362-50-4	LCSD	PCB-81	100		96.3	96.3	50-150	0.842	0-20
56558-16-8	LCSD	PCB-104	100		101	101	50-150	2.39	0-20
32598-14-4	LCSD	PCB-105	100		108	108	50-150	2.46	0-20
74472-37-0	LCSD	PCB-114	100		103	103	50-150	0.524	0-20
31508-00-6	LCSD	PCB-118	100		90.2	90.2	50-150	2.48	0-20
65510-44-3	LCSD	PCB-123	100		86.7	86.7	50-150	5.47	0-20
57465-28-8	LCSD	PCB-126	100		99.9	99.9	50-150	1.06	0-20
33979-03-2	LCSD	PCB-155	100		98.8	98.8	50-150	1.49	0-20
38380-08-4	LCSD	PCB-156/157	200	C	225	112	50-150	1.56	0-20
52663-72-6	LCSD	PCB-167	100		122	122	50-150	1.48	0-20
32774-16-6	LCSD	PCB-169	100		104	104	50-150	2.00	0-20
74487-85-7	LCSD	PCB-188	100		103	103	50-150	0.0878	0-20
39635-31-9	LCSD	PCB-189	100		106	106	50-150	0.739	0-20
2136-99-4	LCSD	PCB-202	150		151	101	50-150	0.0925	0-20
74472-53-0	LCSD	PCB-205	150		151	101	50-150	1.52	0-20
40186-72-9	LCSD	PCB-206	150		145	96.5	50-150	0.262	0-20
52663-77-1	LCSD	PCB-208	150		158	106	50-150	0.858	0-20
2051-24-3	LCSD	PCB-209	150		142	94.5	50-150	0.661	0-20

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3096**	**Sample Type:**	**Matrix Spike**	
Client ID:	**CACV-14-49256(5945001MS)**	**Matrix:**	**SOLID**	
Lab Sample ID:	**12010164**	**%Moisture:**	**15.9**	
Instrument:	**HRP791**	**Analysis Date:**	**04/16/2014 19:37**	**Dilution: 1**
Analyst:	**MJC**	**Prep Batch ID:**	**25623**	
		Batch ID:	**25626**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	MS	PCB-1	49.4	J	43.6	85.8	50-150
2051-62-9	MS	PCB-3	49.4		54.7	106	50-150
13029-08-8	MS	PCB-4	49.4		42.5	77.4	50-150
2050-68-2	MS	PCB-15	49.4		77.8	117	50-150
38444-73-4	MS	PCB-19	49.4		51.1	96.1	50-150
38444-90-5	MS	PCB-37	49.4		133	44.3 *	50-150
15968-05-5	MS	PCB-54	98.8	U	92.7	93.8	50-150
32598-13-3	MS	PCB-77	98.8		140	61.2	50-150
70362-50-4	MS	PCB-81	98.8		98.0	96.2	50-150
56558-16-8	MS	PCB-104	98.8	U	96.0	97.1	50-150
32598-14-4	MS	PCB-105	98.8		325	113	50-150
74472-37-0	MS	PCB-114	98.8		111	103	50-150
31508-00-6	MS	PCB-118	98.8		447	83.6	50-150
65510-44-3	MS	PCB-123	98.8		94.9	86.5	50-150
57465-28-8	MS	PCB-126	98.8		102	101	50-150
33979-03-2	MS	PCB-155	98.8	J	98.6	98.1	50-150
38380-08-4	MS	PCB-156/157	198	C	275	103	50-150
52663-72-6	MS	PCB-167	98.8		139	115	50-150
32774-16-6	MS	PCB-169	98.8	U	99.4	101	50-150
74487-85-7	MS	PCB-188	98.8	U	102	104	50-150
39635-31-9	MS	PCB-189	98.8		108	98.4	50-150
2136-99-4	MS	PCB-202	148		175	90	50-150
74472-53-0	MS	PCB-205	148		149	95.2	50-150
40186-72-9	MS	PCB-206	148		172	87.7	50-150
52663-77-1	MS	PCB-208	148		161	101	50-150
2051-24-3	MS	PCB-209	148	Q	162	99.6	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3096**
Client ID: **CACV-14-49256(5945001MSD)**
Lab Sample ID: **12010165**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Matrix Spike Duplicate**
Matrix: **SOLID**
%Moisture: **15.9**
Analysis Date: **04/16/2014 20:45**
Dilution: 1
Prep Batch ID: **25623**
Batch ID: **25626**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	MSD	PCB-1	49.3	J	44.1	87	50-150	1.14	0-25
2051-62-9	MSD	PCB-3	49.3		57.9	112	50-150	5.59	0-25
13029-08-8	MSD	PCB-4	49.3		44.1	80.9	50-150	3.73	0-25
2050-68-2	MSD	PCB-15	49.3		81.1	125	50-150	4.20	0-25
38444-73-4	MSD	PCB-19	49.3		51.7	97.6	50-150	1.23	0-25
38444-90-5	MSD	PCB-37	49.3		117	11.9 *	50-150	12.8	0-25
15968-05-5	MSD	PCB-54	98.6	U	90.1	91.4	50-150	2.88	0-25
32598-13-3	MSD	PCB-77	98.6		124	45.8 *	50-150	11.6	0-25
70362-50-4	MSD	PCB-81	98.6		97.8	96.2	50-150	0.280	0-25
56558-16-8	MSD	PCB-104	98.6	U	97.6	99	50-150	1.66	0-25
32598-14-4	MSD	PCB-105	98.6		265	52.4	50-150	20.3	0-25
74472-37-0	MSD	PCB-114	98.6		110	102	50-150	1.31	0-25
31508-00-6	MSD	PCB-118	98.6		350	-14.8 *	50-150	24.4	0-25
65510-44-3	MSD	PCB-123	98.6		91.1	82.8	50-150	4.10	0-25
57465-28-8	MSD	PCB-126	98.6		103	102	50-150	0.888	0-25
33979-03-2	MSD	PCB-155	98.6	J	100	100	50-150	1.62	0-25
38380-08-4	MSD	PCB-156/157	197	C	264	97.9	50-150	4.10	0-25
52663-72-6	MSD	PCB-167	98.6		136	113	50-150	1.62	0-25
32774-16-6	MSD	PCB-169	98.6	U	101	103	50-150	2.01	0-25
74487-85-7	MSD	PCB-188	98.6	U	103	105	50-150	0.694	0-25
39635-31-9	MSD	PCB-189	98.6		108	98.8	50-150	0.141	0-25
2136-99-4	MSD	PCB-202	148		171	87.9	50-150	2.01	0-25
74472-53-0	MSD	PCB-205	148		149	95.3	50-150	0.128	0-25
40186-72-9	MSD	PCB-206	148		175	89.5	50-150	1.37	0-25
52663-77-1	MSD	PCB-208	148		164	103	50-150	1.80	0-25
2051-24-3	MSD	PCB-209	148	Q	160	98.2	50-150	1.47	0-25

Method Blank Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Matrix:**	**SOLID**
Client ID:	**MB for batch 25623**	**Instrument ID:**	**HRP791**	**Data File:**	**c15apr14a_3-4**
Lab Sample ID:	**12010161**	**Prep Date:**	**14-APR-14**	**Analyzed:**	**04/16/14 13:59**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 25623	12010162	c15apr14a_3-2	04/16/14	1144
02	LCSD for batch 25623	12010163	c15apr14a_3-3	04/16/14	1252
03	CACV-14-49256	5945001	c15apr14a_3-8	04/16/14	1830
04	CACV-14-49256(5945001MS)	12010164	c15apr14a_3-9	04/16/14	1937
05	CACV-14-49256(5945001MSD)	12010165	c15apr14a_3-10	04/16/14	2045
06	CACV-14-49257	5945002	c15apr14a_5-3	04/17/14	0503
07	CACV-14-49258	5945003	c15apr14a_5-4	04/17/14	0611
08	CACV-14-49259	5945004	c15apr14a_7-10	04/18/14	0939

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010161**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**MB for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 13:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	1	1	pg/g	1.00	5.00
2051-61-8	PCB-2	U	1	1	pg/g	1.00	2.00
2051-62-9	PCB-3	U	1	1	pg/g	1.00	2.00
13029-08-8	PCB-4	U	1	1	pg/g	1.00	4.00
16605-91-7	PCB-5	U	1	1	pg/g	1.00	4.00
25569-80-6	PCB-6	U	1	1	pg/g	1.00	2.00
33284-50-3	PCB-7	U	1	1	pg/g	1.00	4.00
34883-43-7	PCB-8	U	1	1	pg/g	1.00	20.0
34883-39-1	PCB-9	U	1	1	pg/g	1.00	2.00
33146-45-1	PCB-10	U	1	1	pg/g	1.00	4.00
2050-67-1	PCB-11	U	2	2	pg/g	2.00	50.0
PCB-12/13	PCB-13/12	CU	1	1	pg/g	1.00	8.00
34883-41-5	PCB-14	U	1	1	pg/g	1.00	4.00
2050-68-2	PCB-15	U	1	1	pg/g	1.00	20.0
38444-78-9	PCB-16	U	1	1	pg/g	1.00	4.00
37680-66-3	PCB-17	U	.666	.666	pg/g	0.666	4.00
PCB-18/30	PCB-18/30	CU	1.33	1.33	pg/g	1.33	4.00
38444-73-4	PCB-19	U	.666	.666	pg/g	0.666	2.00
PCB-20/28	PCB-20/28	CU	1.33	1.33	pg/g	1.33	20.0
PCB-21/33	PCB-21/33	CU	1.33	1.33	pg/g	1.33	8.00
38444-85-8	PCB-22	U	.666	.666	pg/g	0.666	4.00
55720-44-0	PCB-23	U	.666	.666	pg/g	0.666	2.00
55702-45-9	PCB-24	U	.666	.666	pg/g	0.666	2.00
55712-37-3	PCB-25	U	.666	.666	pg/g	0.666	2.00
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	4.00
38444-76-7	PCB-27	U	.666	.666	pg/g	0.666	2.00
16606-02-3	PCB-31	U	.666	.666	pg/g	0.666	10.0
38444-77-8	PCB-32	U	.666	.666	pg/g	0.666	2.00
37680-68-5	PCB-34	U	.666	.666	pg/g	0.666	2.00
37680-69-6	PCB-35	U	.666	.666	pg/g	0.666	4.00
38444-87-0	PCB-36	U	.666	.666	pg/g	0.666	4.00
38444-90-5	PCB-37	U	.666	.666	pg/g	0.666	20.0

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010161**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**MB for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 13:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.666	.666	pg/g	0.666	2.00
38444-88-1	PCB-39	U	.666	.666	pg/g	0.666	4.00
PCB-40/71	PCB-40/71	CU	1.33	1.33	pg/g	1.33	4.00
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	2.00
36559-22-5	PCB-42	U	1	1	pg/g	1.00	2.00
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	4.00
PCB-44/47/65	PCB-44/65/47	CU	3.34	3.34	pg/g	3.34	6.00
PCB-45/51	PCB-45/51	CU	1.33	1.33	pg/g	1.33	4.00
41464-47-5	PCB-46	U	.666	.666	pg/g	0.666	2.00
70362-47-9	PCB-48	U	.666	.666	pg/g	0.666	2.00
PCB-49/69	PCB-69/49	CU	1.33	1.33	pg/g	1.33	4.00
PCB-50/53	PCB-50/53	CU	1.33	1.33	pg/g	1.33	4.00
35693-99-3	PCB-52	U	1.33	1.33	pg/g	1.33	2.00
15968-05-5	PCB-54	U	.666	.666	pg/g	0.666	2.00
74338-24-2	PCB-55	U	1	1	pg/g	1.00	2.00
41464-43-1	PCB-56	U	.666	.666	pg/g	0.666	4.00
70424-67-8	PCB-57	U	1	1	pg/g	1.00	2.00
41464-49-7	PCB-58	U	1	1	pg/g	1.00	2.00
PCB-59/62/75	PCB-59/62/75	CU	2	2	pg/g	2.00	6.00
33025-41-1	PCB-60	U	.666	.666	pg/g	0.666	4.00
PCB-61-76	PCB-61/76/70/74	CU	2.66	2.66	pg/g	2.66	8.00
74472-34-7	PCB-63	U	.666	.666	pg/g	0.666	5.00
52663-58-8	PCB-64	U	1	1	pg/g	1.00	2.00
32598-10-0	PCB-66	U	1	1	pg/g	1.00	5.00
73575-53-8	PCB-67	U	1	1	pg/g	1.00	2.00
73575-52-7	PCB-68	U	.666	.666	pg/g	0.666	2.00
41464-42-0	PCB-72	U	.666	.666	pg/g	0.666	4.00
74338-23-1	PCB-73	U	1	1	pg/g	1.00	2.00
32598-13-3	PCB-77	U	.666	.666	pg/g	0.666	2.00
70362-49-1	PCB-78	U	.666	.666	pg/g	0.666	2.00
41464-48-6	PCB-79	U	.666	.666	pg/g	0.666	4.00
33284-52-5	PCB-80	U	.666	.666	pg/g	0.666	4.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010161**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**MB for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 13:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.666	.666	pg/g	0.666	2.00
52663-62-4	PCB-82	U	1	1	pg/g	1.00	5.00
60145-20-2	PCB-83	U	1	1	pg/g	1.00	2.00
52663-60-2	PCB-84	U	1	1	pg/g	1.00	2.00
PCB-85-117	PCB-117/116/85	CU	2	2	pg/g	2.00	6.00
PCB-86-125	PCB-86/87/97/109/119/125	CU	4	4	pg/g	4.00	12.0
PCB-88/91	PCB-88/91	CU	1.33	1.33	pg/g	1.33	4.00
73575-57-2	PCB-89	U	.666	.666	pg/g	0.666	2.00
PCB-90-113	PCB-113/90/101	CU	2	2	pg/g	2.00	6.00
52663-61-3	PCB-92	U	1	1	pg/g	1.00	2.00
PCB-93/100	PCB-93/100	CU	2	2	pg/g	2.00	4.00
73575-55-0	PCB-94	U	.666	.666	pg/g	0.666	2.00
38379-99-6	PCB-95	U	1.33	1.33	pg/g	1.33	4.00
73575-54-9	PCB-96	U	.666	.666	pg/g	0.666	2.00
PCB-98/102	PCB-102/98	CU	1.33	1.33	pg/g	1.33	4.00
38380-01-7	PCB-99	U	1.33	1.33	pg/g	1.33	2.00
60145-21-3	PCB-103	U	.666	.666	pg/g	0.666	5.00
56558-16-8	PCB-104	U	.666	.666	pg/g	0.666	2.00
32598-14-4	PCB-105	U	1	1	pg/g	1.00	2.00
70424-69-0	PCB-106	U	1	1	pg/g	1.00	2.00
70424-68-9	PCB-107	U	.666	.666	pg/g	0.666	4.00
PCB-108/124	PCB-108/124	CU	1.33	1.33	pg/g	1.33	4.00
PCB-110/115	PCB-110/115	CU	2.66	2.66	pg/g	2.66	4.00
39635-32-0	PCB-111	U	.666	.666	pg/g	0.666	2.00
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	2.00
74472-37-0	PCB-114	U	.666	.666	pg/g	0.666	2.00
31508-00-6	PCB-118	U	1.33	1.33	pg/g	1.33	4.00
68194-12-7	PCB-120	U	.666	.666	pg/g	0.666	2.00
56558-18-0	PCB-121	U	.666	.666	pg/g	0.666	2.00
76842-07-4	PCB-122	U	.666	.666	pg/g	0.666	6.90
65510-44-3	PCB-123	U	.666	.666	pg/g	0.666	2.00
57465-28-8	PCB-126	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010161**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**MB for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 13:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.666	.666	pg/g	0.666	2.00
PCB-128/166	PCB-128/166	CU	1.33	1.33	pg/g	1.33	4.00
PCB-129-163	PCB-138/163/129	CU	2.66	2.66	pg/g	2.66	6.00
52663-66-8	PCB-130	U	1	1	pg/g	1.00	2.00
61798-70-7	PCB-131	U	.666	.666	pg/g	0.666	2.00
38380-05-1	PCB-132	U	1	1	pg/g	1.00	2.00
35694-04-3	PCB-133	U	.666	.666	pg/g	0.666	2.00
52704-70-8	PCB-134	U	1.33	1.33	pg/g	1.33	2.00
PCB-135/151	PCB-151/135	CU	1.33	1.33	pg/g	1.33	4.00
38411-22-2	PCB-136	U	.666	.666	pg/g	0.666	2.00
35694-06-5	PCB-137	U	1.33	1.33	pg/g	1.33	2.00
PCB-139/140	PCB-139/140	CU	1.33	1.33	pg/g	1.33	4.00
52712-04-6	PCB-141	U	1.33	1.33	pg/g	1.33	4.00
41411-61-4	PCB-142	U	.666	.666	pg/g	0.666	2.00
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	2.00
68194-14-9	PCB-144	U	.666	.666	pg/g	0.666	2.00
74472-40-5	PCB-145	U	.666	.666	pg/g	0.666	2.00
51908-16-8	PCB-146	U	1	1	pg/g	1.00	2.00
PCB-147/149	PCB-147/149	CU	2	2	pg/g	2.00	8.00
74472-41-6	PCB-148	U	.666	.666	pg/g	0.666	2.00
68194-08-1	PCB-150	U	1	1	pg/g	1.00	2.00
68194-09-2	PCB-152	U	.666	.666	pg/g	0.666	2.00
PCB-153/168	PCB-153/168	CU	2	2	pg/g	2.00	8.00
60145-22-4	PCB-154	U	.666	.666	pg/g	0.666	2.00
33979-03-2	PCB-155	U	.666	.666	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	CU	1.33	1.33	pg/g	1.33	4.00
74472-42-7	PCB-158	U	.666	.666	pg/g	0.666	2.00
39635-35-3	PCB-159	U	.666	.666	pg/g	0.666	2.00
41411-62-5	PCB-160	U	.666	.666	pg/g	0.666	2.00
74472-43-8	PCB-161	U	1	1	pg/g	1.00	2.00
39635-34-2	PCB-162	U	1	1	pg/g	1.00	2.00
74472-45-0	PCB-164	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010161**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**MB for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 13:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.666	.666	pg/g	0.666	2.00
52663-72-6	PCB-167	U	.666	.666	pg/g	0.666	2.00
32774-16-6	PCB-169	U	1	1	pg/g	1.00	2.00
35065-30-6	PCB-170	U	.666	.666	pg/g	0.666	2.00
PCB-171/173	PCB-173/171	CU	1.33	1.33	pg/g	1.33	4.00
52663-74-8	PCB-172	U	1	1	pg/g	1.00	2.00
38411-25-5	PCB-174	U	1.33	1.33	pg/g	1.33	2.00
40186-70-7	PCB-175	U	1	1	pg/g	1.00	2.00
52663-65-7	PCB-176	U	.666	.666	pg/g	0.666	2.00
52663-70-4	PCB-177	U	1	1	pg/g	1.00	2.00
52663-67-9	PCB-178	U	1.33	1.33	pg/g	1.33	2.00
52663-64-6	PCB-179	U	.666	.666	pg/g	0.666	2.00
PCB-180/193	PCB-193/180	CU	2	2	pg/g	2.00	4.00
74472-47-2	PCB-181	U	1	1	pg/g	1.00	2.00
60145-23-5	PCB-182	U	.666	.666	pg/g	0.666	2.00
PCB-183/185	PCB-183/185	CU	1.33	1.33	pg/g	1.33	4.00
74472-48-3	PCB-184	U	.666	.666	pg/g	0.666	2.00
74472-49-4	PCB-186	U	.666	.666	pg/g	0.666	2.00
52663-68-0	PCB-187	U	1	1	pg/g	1.00	2.00
74487-85-7	PCB-188	U	.666	.666	pg/g	0.666	2.00
39635-31-9	PCB-189	U	.666	.666	pg/g	0.666	2.00
41411-64-7	PCB-190	U	1	1	pg/g	1.00	2.00
74472-50-7	PCB-191	U	.666	.666	pg/g	0.666	2.00
74472-51-8	PCB-192	U	.666	.666	pg/g	0.666	2.00
35694-08-7	PCB-194	U	.666	.666	pg/g	0.666	2.00
52663-78-2	PCB-195	U	1	1	pg/g	1.00	2.00
42740-50-1	PCB-196	U	.666	.666	pg/g	0.666	2.00
PCB-197/200	PCB-197/200	CU	1.33	1.33	pg/g	1.33	4.00
PCB-198/199	PCB-198/199	CU	1.33	1.33	pg/g	1.33	4.00
40186-71-8	PCB-201	U	.666	.666	pg/g	0.666	2.00
2136-99-4	PCB-202	U	1	1	pg/g	1.00	2.00
52663-76-0	PCB-203	U	1.33	1.33	pg/g	1.33	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010161**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**MB for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 13:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	1	1	pg/g	1.00	2.00
74472-53-0	PCB-205	U	.666	.666	pg/g	0.666	2.00
40186-72-9	PCB-206	U	1	1	pg/g	1.00	2.00
52663-79-3	PCB-207	U	.666	.666	pg/g	0.666	2.00
52663-77-1	PCB-208	U	.666	.666	pg/g	0.666	2.00
2051-24-3	PCB-209	U	.666	.666	pg/g	0.666	2.00
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	0	0	pg/g		
25429-29-2	Total Penta PCBs	U	0	0	pg/g		
26601-64-9	Total Hexa PCBs	U	0	0	pg/g		
28655-71-2	Total Hepta PCBs	U	0	0	pg/g		
55722-26-4	Total Octa PCBs	U	0	0	pg/g		
53742-07-7	Total Nona PCBs	U	0	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0	0	pg/g		
1336-36-3	Total PCB Congeners	U	0	0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		118	200	pg/g	59.0	(15%-150%)
13C-3-MoCB		132	200	pg/g	65.8	(15%-150%)
13C-4-DiCB		132	200	pg/g	65.8	(25%-150%)
13C-15-DiCB		154	200	pg/g	77.2	(25%-150%)
13C-19-TrCB		140	200	pg/g	70.2	(25%-150%)
13C-37-TrCB		205	200	pg/g	102	(25%-150%)
13C-54-TeCB		196	200	pg/g	97.8	(25%-150%)
13C-77-TeCB		191	200	pg/g	95.7	(25%-150%)
13C-81-TeCB		198	200	pg/g	99.0	(25%-150%)
13C-104-PeCB		205	200	pg/g	103	(25%-150%)
13C-105-PeCB		190	200	pg/g	94.9	(25%-150%)
13C-114-PeCB		184	200	pg/g	91.8	(25%-150%)
13C-118-PeCB		194	200	pg/g	96.8	(25%-150%)
13C-123-PeCB		198	200	pg/g	98.8	(25%-150%)
13C-126-PeCB		195	200	pg/g	97.3	(25%-150%)
13C-155-HxCB		200	200	pg/g	100	(25%-150%)
13C-156-HxCB	C	377	400	pg/g	94.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		179	200	pg/g	89.7	(25%-150%)
13C-169-HxCB		211	200	pg/g	105	(25%-150%)
13C-188-HpCB		152	200	pg/g	75.9	(25%-150%)
13C-189-HpCB		184	200	pg/g	92.0	(25%-150%)
13C-202-OcCB		146	200	pg/g	73.1	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010161**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**MB for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 13:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		209	200	pg/g	105	(25%-150%)
13C-206-NoCB		176	200	pg/g	88.2	(25%-150%)
13C-208-NoCB		171	200	pg/g	85.7	(25%-150%)
13C-209-DeCB		195	200	pg/g	97.6	(25%-150%)
13C-28-TrCB		186	200	pg/g	93.2	(30%-135%)
13C-111-PeCB		167	200	pg/g	83.4	(30%-135%)
13C-178-HpCB		173	200	pg/g	86.6	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010162**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**LCS for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 11:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-2**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		42.6	42.4	pg/g	1.00	5.00
2051-62-9	PCB-3		46.6	46.4	pg/g	1.00	2.00
13029-08-8	PCB-4		43.1	42.3	pg/g	1.00	4.00
2050-68-2	PCB-15		47.8	47.1	pg/g	1.00	20.0
38444-73-4	PCB-19		48.5	48.2	pg/g	0.666	2.00
38444-90-5	PCB-37		47.2	46.9	pg/g	0.666	20.0
15968-05-5	PCB-54		91.6	91.4	pg/g	0.666	2.00
32598-13-3	PCB-77		87.0	86.7	pg/g	0.666	2.00
70362-50-4	PCB-81		95.7	95.5	pg/g	0.666	2.00
56558-16-8	PCB-104		98.8	98.6	pg/g	0.666	2.00
32598-14-4	PCB-105		106	106	pg/g	1.00	2.00
74472-37-0	PCB-114		103	102	pg/g	0.666	2.00
31508-00-6	PCB-118		89.8	88	pg/g	1.33	4.00
65510-44-3	PCB-123		91.9	91.5	pg/g	0.666	2.00
57465-28-8	PCB-126		101	101	pg/g	0.666	2.00
33979-03-2	PCB-155		97.6	97.4	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	222	221	pg/g	1.33	4.00
52663-72-6	PCB-167		120	120	pg/g	0.666	2.00
32774-16-6	PCB-169		102	102	pg/g	1.00	2.00
74487-85-7	PCB-188		103	102	pg/g	0.666	2.00
39635-31-9	PCB-189		105	105	pg/g	0.666	2.00
2136-99-4	PCB-202		152	151	pg/g	1.00	2.00
74472-53-0	PCB-205		149	149	pg/g	0.666	2.00
40186-72-9	PCB-206		145	144	pg/g	1.00	2.00
52663-77-1	PCB-208		157	157	pg/g	0.666	2.00
2051-24-3	PCB-209		141	141	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		86.7	200	pg/g	43.3	(15%-140%)
13C-3-MoCB		89.1	200	pg/g	44.6	(15%-140%)
13C-4-DiCB		95.2	200	pg/g	47.6	(30%-140%)
13C-15-DiCB		119	200	pg/g	59.5	(30%-140%)
13C-19-TrCB		105	200	pg/g	52.5	(30%-140%)
13C-37-TrCB		155	200	pg/g	77.7	(30%-140%)
13C-54-TeCB		141	200	pg/g	70.4	(30%-140%)
13C-77-TeCB		173	200	pg/g	86.3	(30%-140%)
13C-81-TeCB		175	200	pg/g	87.3	(30%-140%)
13C-104-PeCB		148	200	pg/g	73.9	(30%-140%)
13C-105-PeCB		152	200	pg/g	76.2	(30%-140%)
13C-114-PeCB		143	200	pg/g	71.6	(30%-140%)
13C-118-PeCB		155	200	pg/g	77.5	(30%-140%)
13C-123-PeCB		162	200	pg/g	80.8	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010162**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**LCS for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 11:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-2**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		159	200	pg/g	79.6	(30%-140%)
13C-155-HxCB		158	200	pg/g	78.8	(30%-140%)
13C-156-HxCB	C	321	400	pg/g	80.3	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		153	200	pg/g	76.4	(30%-140%)
13C-169-HxCB		177	200	pg/g	88.7	(30%-140%)
13C-188-HpCB		107	200	pg/g	53.7	(30%-140%)
13C-189-HpCB		148	200	pg/g	74.2	(30%-140%)
13C-202-OcCB		122	200	pg/g	60.9	(30%-140%)
13C-205-OcCB		170	200	pg/g	85.1	(30%-140%)
13C-206-NoCB		147	200	pg/g	73.6	(30%-140%)
13C-208-NoCB		139	200	pg/g	69.4	(30%-140%)
13C-209-DeCB		163	200	pg/g	81.4	(30%-140%)
13C-28-TrCB		135	200	pg/g	67.5	(40%-125%)
13C-111-PeCB		148	200	pg/g	73.8	(40%-125%)
13C-178-HpCB		151	200	pg/g	75.3	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010163**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**LCSD for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		41.9	41.7	pg/g	1.00	5.00
2051-62-9	PCB-3		46.2	46	pg/g	1.00	2.00
13029-08-8	PCB-4		43.1	42.2	pg/g	1.00	4.00
2050-68-2	PCB-15		49.4	48.7	pg/g	1.00	20.0
38444-73-4	PCB-19		48.2	48	pg/g	0.666	2.00
38444-90-5	PCB-37		46.9	46.6	pg/g	0.666	20.0
15968-05-5	PCB-54		94.3	94.2	pg/g	0.666	2.00
32598-13-3	PCB-77		87.3	87.1	pg/g	0.666	2.00
70362-50-4	PCB-81		96.5	96.3	pg/g	0.666	2.00
56558-16-8	PCB-104		101	101	pg/g	0.666	2.00
32598-14-4	PCB-105		109	108	pg/g	1.00	2.00
74472-37-0	PCB-114		103	103	pg/g	0.666	2.00
31508-00-6	PCB-118		92.1	90.2	pg/g	1.33	4.00
65510-44-3	PCB-123		87.0	86.7	pg/g	0.666	2.00
57465-28-8	PCB-126		100	99.9	pg/g	0.666	2.00
33979-03-2	PCB-155		99.0	98.8	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	225	225	pg/g	1.33	4.00
52663-72-6	PCB-167		122	122	pg/g	0.666	2.00
32774-16-6	PCB-169		104	104	pg/g	1.00	2.00
74487-85-7	PCB-188		103	103	pg/g	0.666	2.00
39635-31-9	PCB-189		106	106	pg/g	0.666	2.00
2136-99-4	PCB-202		152	151	pg/g	1.00	2.00
74472-53-0	PCB-205		151	151	pg/g	0.666	2.00
40186-72-9	PCB-206		145	145	pg/g	1.00	2.00
52663-77-1	PCB-208		159	158	pg/g	0.666	2.00
2051-24-3	PCB-209		142	142	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		82.0	200	pg/g	41.0	(15%-140%)
13C-3-MoCB		84.1	200	pg/g	42.1	(15%-140%)
13C-4-DiCB		88.9	200	pg/g	44.5	(30%-140%)
13C-15-DiCB		114	200	pg/g	57.0	(30%-140%)
13C-19-TrCB		101	200	pg/g	50.7	(30%-140%)
13C-37-TrCB		148	200	pg/g	74.1	(30%-140%)
13C-54-TeCB		128	200	pg/g	64.0	(30%-140%)
13C-77-TeCB		162	200	pg/g	80.8	(30%-140%)
13C-81-TeCB		163	200	pg/g	81.5	(30%-140%)
13C-104-PeCB		140	200	pg/g	70.0	(30%-140%)
13C-105-PeCB		139	200	pg/g	69.6	(30%-140%)
13C-114-PeCB		132	200	pg/g	66.0	(30%-140%)
13C-118-PeCB		143	200	pg/g	71.7	(30%-140%)
13C-123-PeCB		152	200	pg/g	76.0	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010163**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**				
Client ID:	**LCSD for batch 25623**			**Prep Basis:**	**As Received**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-3**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		149	200	pg/g	74.6	(30%-140%)
13C-155-HxCB		144	200	pg/g	72.0	(30%-140%)
13C-156-HxCB	C	290	400	pg/g	72.5	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		138	200	pg/g	68.8	(30%-140%)
13C-169-HxCB		157	200	pg/g	78.4	(30%-140%)
13C-188-HpCB		97.4	200	pg/g	48.7	(30%-140%)
13C-189-HpCB		129	200	pg/g	64.3	(30%-140%)
13C-202-OcCB		113	200	pg/g	56.4	(30%-140%)
13C-205-OcCB		155	200	pg/g	77.4	(30%-140%)
13C-206-NoCB		136	200	pg/g	68.1	(30%-140%)
13C-208-NoCB		129	200	pg/g	64.3	(30%-140%)
13C-209-DeCB		144	200	pg/g	71.8	(30%-140%)
13C-28-TrCB		132	200	pg/g	66.0	(40%-125%)
13C-111-PeCB		142	200	pg/g	71.1	(40%-125%)
13C-178-HpCB		138	200	pg/g	69.2	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010164**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256(5945001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 19:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-9**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.03 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		43.8	43.6	pg/g	0.988	4.94
2051-62-9	PCB-3		54.9	54.7	pg/g	0.988	1.98
13029-08-8	PCB-4		43.3	42.5	pg/g	0.988	3.95
2050-68-2	PCB-15		78.4	77.8	pg/g	0.988	19.8
38444-73-4	PCB-19		51.3	51.1	pg/g	0.658	1.98
38444-90-5	PCB-37		134	133	pg/g	0.658	19.8
15968-05-5	PCB-54		92.9	92.7	pg/g	0.658	1.98
32598-13-3	PCB-77		140	140	pg/g	0.658	1.98
70362-50-4	PCB-81		98.3	98	pg/g	0.658	1.98
56558-16-8	PCB-104		96.2	96	pg/g	0.658	1.98
32598-14-4	PCB-105		326	325	pg/g	0.988	1.98
74472-37-0	PCB-114		111	111	pg/g	0.658	1.98
31508-00-6	PCB-118		449	447	pg/g	1.32	3.95
65510-44-3	PCB-123		95.2	94.9	pg/g	0.658	1.98
57465-28-8	PCB-126		102	102	pg/g	0.658	1.98
33979-03-2	PCB-155		98.8	98.6	pg/g	0.658	1.98
PCB-156/157	PCB-156/157	C	275	275	pg/g	1.32	3.95
52663-72-6	PCB-167		139	139	pg/g	0.658	1.98
32774-16-6	PCB-169		99.7	99.4	pg/g	0.988	1.98
74487-85-7	PCB-188		103	102	pg/g	0.658	1.98
39635-31-9	PCB-189		108	108	pg/g	0.658	1.98
2136-99-4	PCB-202		175	175	pg/g	0.988	1.98
74472-53-0	PCB-205		149	149	pg/g	0.658	1.98
40186-72-9	PCB-206		173	172	pg/g	0.988	1.98
52663-77-1	PCB-208		162	161	pg/g	0.658	1.98
2051-24-3	PCB-209	Q	163	162	pg/g	0.658	1.98

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		91.0	198	pg/g	46.1	(15%-150%)
13C-3-MoCB		103	198	pg/g	52.3	(15%-150%)
13C-4-DiCB		108	198	pg/g	54.4	(25%-150%)
13C-15-DiCB		174	198	pg/g	87.9	(25%-150%)
13C-19-TrCB		137	198	pg/g	69.4	(25%-150%)
13C-37-TrCB		200	198	pg/g	101	(25%-150%)
13C-54-TeCB		152	198	pg/g	77.1	(25%-150%)
13C-77-TeCB		236	198	pg/g	119	(25%-150%)
13C-81-TeCB		236	198	pg/g	119	(25%-150%)
13C-104-PeCB		169	198	pg/g	85.6	(25%-150%)
13C-105-PeCB		194	198	pg/g	98.0	(25%-150%)
13C-114-PeCB		183	198	pg/g	92.8	(25%-150%)
13C-118-PeCB		192	198	pg/g	97.2	(25%-150%)
13C-123-PeCB		201	198	pg/g	102	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010164**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256(5945001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 19:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-9**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.03 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		216	198	pg/g	109	(25%-150%)
13C-155-HxCB		159	198	pg/g	80.4	(25%-150%)
13C-156-HxCB	C	371	395	pg/g	93.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		178	198	pg/g	90.2	(25%-150%)
13C-169-HxCB		204	198	pg/g	103	(25%-150%)
13C-188-HpCB		127	198	pg/g	64.4	(25%-150%)
13C-189-HpCB		178	198	pg/g	90.1	(25%-150%)
13C-202-OcCB		142	198	pg/g	72.0	(25%-150%)
13C-205-OcCB		200	198	pg/g	101	(25%-150%)
13C-206-NoCB		162	198	pg/g	82.1	(25%-150%)
13C-208-NoCB		165	198	pg/g	83.3	(25%-150%)
13C-209-DeCB	Q	156	198	pg/g	78.9	(25%-150%)
13C-28-TrCB		164	198	pg/g	83.1	(30%-135%)
13C-111-PeCB		180	198	pg/g	91.2	(30%-135%)
13C-178-HpCB		163	198	pg/g	82.6	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

Q **Quantitative Interference**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010165**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256(5945001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 20:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.06 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		44.3	44.1	pg/g	0.986	4.93
2051-62-9	PCB-3		58.1	57.9	pg/g	0.986	1.97
13029-08-8	PCB-4		44.9	44.1	pg/g	0.986	3.94
2050-68-2	PCB-15		81.8	81.1	pg/g	0.986	19.7
38444-73-4	PCB-19		52.0	51.7	pg/g	0.657	1.97
38444-90-5	PCB-37		118	117	pg/g	0.657	19.7
15968-05-5	PCB-54		90.3	90.1	pg/g	0.657	1.97
32598-13-3	PCB-77		124	124	pg/g	0.657	1.97
70362-50-4	PCB-81		98.0	97.8	pg/g	0.657	1.97
56558-16-8	PCB-104		97.8	97.6	pg/g	0.657	1.97
32598-14-4	PCB-105		266	265	pg/g	0.986	1.97
74472-37-0	PCB-114		110	110	pg/g	0.657	1.97
31508-00-6	PCB-118		352	350	pg/g	1.32	3.94
65510-44-3	PCB-123		91.4	91.1	pg/g	0.657	1.97
57465-28-8	PCB-126		103	103	pg/g	0.657	1.97
33979-03-2	PCB-155		100	100	pg/g	0.657	1.97
PCB-156/157	PCB-156/157	C	264	264	pg/g	1.32	3.94
52663-72-6	PCB-167		137	136	pg/g	0.657	1.97
32774-16-6	PCB-169		102	101	pg/g	0.986	1.97
74487-85-7	PCB-188		103	103	pg/g	0.657	1.97
39635-31-9	PCB-189		108	108	pg/g	0.657	1.97
2136-99-4	PCB-202		172	171	pg/g	0.986	1.97
74472-53-0	PCB-205		149	149	pg/g	0.657	1.97
40186-72-9	PCB-206		175	175	pg/g	0.986	1.97
52663-77-1	PCB-208		164	164	pg/g	0.657	1.97
2051-24-3	PCB-209	Q	160	160	pg/g	0.657	1.97

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		92.1	197	pg/g	46.7	(15%-150%)
13C-3-MoCB		105	197	pg/g	53.4	(15%-150%)
13C-4-DiCB		107	197	pg/g	54.5	(25%-150%)
13C-15-DiCB		154	197	pg/g	78.0	(25%-150%)
13C-19-TrCB		128	197	pg/g	64.7	(25%-150%)
13C-37-TrCB		196	197	pg/g	99.2	(25%-150%)
13C-54-TeCB		160	197	pg/g	81.3	(25%-150%)
13C-77-TeCB		231	197	pg/g	117	(25%-150%)
13C-81-TeCB		229	197	pg/g	116	(25%-150%)
13C-104-PeCB		172	197	pg/g	87.4	(25%-150%)
13C-105-PeCB		200	197	pg/g	101	(25%-150%)
13C-114-PeCB		190	197	pg/g	96.2	(25%-150%)
13C-118-PeCB		194	197	pg/g	98.2	(25%-150%)
13C-123-PeCB		201	197	pg/g	102	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3096**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010165**	**Date Collected:**	**03/28/2014 12:15**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25623**	**Date Received:**	**04/01/2014 10:30**	**%Moisture:**	**15.9**
Client ID:	**CACV-14-49256(5945001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25626**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/16/2014 20:45**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c15apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25623**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**14-APR-14**	**Prep Aliquot:**	**12.06 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-126-PeCB		215	197	pg/g	109		(25%-150%)
13C-155-HxCB		160	197	pg/g	81.0		(25%-150%)
13C-156-HxCB	C	375	394	pg/g	95.1		(25%-150%)
13C-157-HxCB	C156L						
13C-167-HxCB		178	197	pg/g	90.4		(25%-150%)
13C-169-HxCB		209	197	pg/g	106		(25%-150%)
13C-188-HpCB		195	197	pg/g	99.0		(25%-150%)
13C-189-HpCB		272	197	pg/g	138		(25%-150%)
13C-202-OcCB		214	197	pg/g	109		(25%-150%)
13C-205-OcCB		331	197	pg/g	168	*	(25%-150%)
13C-206-NoCB		261	197	pg/g	132		(25%-150%)
13C-208-NoCB		251	197	pg/g	127		(25%-150%)
13C-209-DeCB	Q	228	197	pg/g	116		(25%-150%)
13C-28-TrCB		168	197	pg/g	85.2		(30%-135%)
13C-111-PeCB		181	197	pg/g	91.7		(30%-135%)
13C-178-HpCB		162	197	pg/g	82.0		(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

Q **Quantitative Interference**

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

AOCP

COC/Lab Request #: 2014-3136

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Metals(W)	NMED Explosives list	Tal Metals
CAWA-14-49272	Apr 4 2014	11:20	SED	1			1
CAWA-14-49279	Apr 4 2014	11:20	SED	1		1	1
CAWA-14-49273	Apr 4 2014	11:37	SED	1			1
CAWA-14-49274	Apr 4 2014	11:50	SED	1			1
CAWA-14-49281	Apr 4 2014	12:10	W		1		

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Martin	4/7/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49272 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1120	MEDIA:		SED
PRS ID:	Water-Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	~~ST~~ SPR 3/5/14	WA-61494	FIELD PREP:	NA	↓
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	↓
TOP DEPTH:		0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:		0.131 4	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine sediment

LOCATION COMMENTS: Downstream of WA4 X-section 2

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Pkg'd Pad
α : >1 Gross Alpha 23 dpm
β/γ: 1764 Gross Beta/Gamma 1705 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Travis Naibert

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Naibert (Signature)	4/4/14 1420	(Printed Name) Sheri Sherwood (Signature)	4/4/14 1420
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49273 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1137	MEDIA:		SED
PRS ID:	Water-Canyon	ok SRM 3/27/14	SAMPLE TECH CODE:	SS	ok
LOCATION ID:		WA-614975	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0 cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.295 9 cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse sediment

LOCATION COMMENTS: Downstream of WA4 X-section 2

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
γ : 31
β/γ : 1764

Gross Alpha 23 dpm

Gross Beta/Gamma 1663 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Travis Naibert

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Naibert (Signature)	4/4/14 1420	(Printed Name) S. Sherwood (Signature)	4/4/14 1420
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49274 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1150	MEDIA:		Sed
PRS ID:	Water-Canyon	OK	SAMPLE TECH CODE:	SS	ok
LOCATION ID:		WA-614946	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.065	2cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment

LOCATION COMMENTS: WA-4

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
x: 31
2/σ: 1764

Gross Alpha 23 dpm (TJN 4/4/13)

Gross Beta/Gamma 1726 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) K. Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Nasbert (Signature)	4/4/14 1420	(Printed Name) S. Sherwood (Signature)	4/4/14 1420
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49279 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	S	SED
TIME COLLECTED (HH:MM):		1120	MEDIA:		SED
PRS ID:		TW 4/4/14 ok water canyon	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	Specified At Time Of Sampling	WA-61494	FIELD PREP:		↓
LOCATION TYPE:		BH	FIELD QC TYPE:	FD	
TOP DEPTH:		0	SAMPLE USAGE:	QC	
BOTTOM DEPTH:	0.131	4	EXCAVATED:		YES NO NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	~~NMED Explosives list~~	~~250 ML AMBER GLASS~~	~~1~~	~~ICE~~		~~FEC~~
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine sediments Field Dupe of CAWA-14-49272

LOCATION COMMENTS: WA-4

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

bkgd α 31 β/γ 1764

Gross **Alpha** 23 **dpm**

Gross **Beta/Gamma** 1705 **dpm**

PID Ambient Reading = NA **ppm**

COLLECTED BY (PRINT) Travis Naibert

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Naibert (Signature)	4/4/14 1420	(Printed Name) B. Sherwood (Signature)	4/4/14 1420
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49281 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	W	ok
TIME COLLECTED (HH:MM):		1210	MEDIA:		W
PRS ID:	Water-Canyon Specified At Time Of Sampling	ok	SAMPLE TECH CODE:	DC	ok
LOCATION ID:		WA-61496	FIELD PREP:	NA	
LOCATION TYPE:		BH	FIELD QC TYPE:	FR	
TOP DEPTH:		NA	SAMPLE USAGE:	QC	
BOTTOM DEPTH:		NA	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	Metals(W)	1 LITER POLY	1	HNO3	Y	

SAMPLE COMMENTS: FR of sampling equipment

LOCATION COMMENTS: WA-4

FIELD PARAMETERS: pH <2

COLLECTED BY (PRINT) P. Chamberlain

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Naibert (Signature)	4/4/14 1420	(Printed Name) S. Sherwood (Signature)	4/4/14 1420
RELINQUISHED BY **(Printed Name)** **(Signature)**	**Date/Time**	**RECEIVED BY** **(Printed Name)** **(Signature)**	**Date/Time**

Report Date 11/14/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3136

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
346169	EPA:245.2					
346169	SW-846:6010C	3	1			
346169	SW-846:6020	3	1			
346169	SW-846:7471A	3	1			
346169	SW-846:8082	3	1			
346169	SW-846:8321A_MOD	3	1			

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
346169	EPA:245.2	1382060	1382059						1					1				1			
346169	SW-846:6010C	1381109	1381108	3	1				1					1				1			
346169	SW-846:6010C	1384013	1384011						1					1				1			
346169	SW-846:6020	1381872	1381871	3	1				1					1				1			
346169	SW-846:6020	1384015	1384014						1					1				1			
346169	SW-846:7471A	1382560	1382559	3	1				1					1				1			
346169	SW-846:8082	1380349	1380348	3	1				1					1							
346169	SW-846:8321A_MOD	1376719	1376718	3	1				1					1							

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:245.2	INORGANIC	CAWA-14-49281	1203073225	DUP	1	0	0	0
EPA:245.2	INORGANIC	CAWA-14-49281	346169005	FR	1	0	0	0
EPA:245.2	INORGANIC	LCS	1203073224	LCS	0	0	1	0
EPA:245.2	INORGANIC	MB	1203073223	MB	1	0	0	0
SW-846:6010C	INORGANIC	CACH-14-56607	1203070770	DUP	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49272	346169001	REG	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49273	346169003	REG	17	0	0	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:6010C	INORGANIC	CAWA-14-49274	346169004	REG	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49279	346169002	FD	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49281	1203078105	DUP	13	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49281	346169005	FR	13	0	0	0
SW-846:6010C	INORGANIC	LCS	1203070769	LCS	0	0	17	0
SW-846:6010C	INORGANIC	LCS	1203078104	LCS	0	0	13	0
SW-846:6010C	INORGANIC	MB	1203070768	MB	17	0	0	0
SW-846:6010C	INORGANIC	MB	1203078103	MB	13	0	0	0
SW-846:6020	INORGANIC	CAMO-14-75317	1203072730	DUP	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49272	346169001	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49273	346169003	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49274	346169004	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49279	346169002	FD	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49281	1203078110	DUP	9	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49281	346169005	FR	9	0	0	0
SW-846:6020	INORGANIC	LCS	1203072729	LCS	0	0	5	0
SW-846:6020	INORGANIC	LCS	1203078109	LCS	0	0	9	0
SW-846:6020	INORGANIC	MB	1203072728	MB	5	0	0	0
SW-846:6020	INORGANIC	MB	1203078108	MB	9	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49272	1203074623	DUP	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49272	346169001	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49273	346169003	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49274	346169004	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49279	346169002	FD	1	0	0	0
SW-846:7471A	INORGANIC	LCS	1203074622	LCS	0	0	1	0
SW-846:7471A	INORGANIC	MB	1203074621	MB	1	0	0	0
SW-846:8082	PESTPCB	CAWA-14-49272	346169001	REG	7	2	0	0
SW-846:8082	PESTPCB	CAWA-14-49273	346169003	REG	7	2	0	0
SW-846:8082	PESTPCB	CAWA-14-49274	346169004	REG	7	2	0	0
SW-846:8082	PESTPCB	CAWA-14-49279	346169002	FD	7	2	0	0
SW-846:8082	PESTPCB	LCS	1203068847	LCS	0	2	2	0
SW-846:8082	PESTPCB	MB	1203068844	MB	7	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49272	346169001	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49273	346169003	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49274	346169004	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49279	346169002	FD	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	LCS	1203060319	LCS	0	2	20	0
SW-846:8321A_MOD	LCMS/MS HIGH	MB	1203060318	MB	20	2	0	0

DATA VALIDATION REPORT

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

Blank FS ID	Blank Lab Sample	Blank Type	Analytical Method	Sample	Parameter Name	Blank Lab Result	Lab Qualifier	Blank Lab Units	Blank Lab Detection Limit
MB	1203070768	METHOD BLANK	SW-846:6010C	SED	Iron	9360	J	ug/kg	24700
MB	1203078108	METHOD BLANK	SW-846:6020	W	Arsenic	2.61	J	ug/L	5.00
MB	1203078108	METHOD BLANK	SW-846:6020	W	Chromium	-5.3	J	ug/L	10.0

Field Sample ID	Blank Lab	Blank Type	Analytical Method	Parameter Name	Blank Lab Result	Blank Lab Units	Lab Result	Lab Qualifier	Lab Detection Limit	Detect Flag	Detect to Nondetect Factor	Detect to Estimated Factor	Use Factors
CAWA-14-49281	1203078108	METHOD BLANK	SW-846:6020	Arsenic	2.61	ug/L	1.99	J	5.00	Y	5		Y
CAWA-14-49281	1203078108	METHOD BLANK	SW-846:6020	Chromium	-5.3	ug/L	10.0	U	10.0	N	5		Y

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

DATA VALIDATION REPORT

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

LCS Lab Sample	LCSD Lab	Analytical Method	Parameter Name	Lab Lot ID	Analysis	Sample Matrix	LCS Spike Recovery	LCSD Spike Recovery	Upper Limit	Lower Limit	Upper Rejection Limit	Lower Rejection Limit	RPD	RPD Limit
1203060319		SW-846:8321A_MOD	Tetryl	1376718	04-25-2014	SD	25		131	36		10		

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

Location ID	COC Number	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Paramter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detect Flag	Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent	Analysis Lot ID	Validation Status Code	Use Flag
WA-61494	2014-3136	CAWA-14-49272	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	500	ug/kg	0.5	mg/kg			SD	04/04/2014		1376719	VAL	Y
WA-61495	2014-3136	CAWA-14-49273	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	493	ug/kg	0.493	mg/kg			SD	04/04/2014		1376719	VAL	Y

DATA VALIDATION REPORT

Location ID	COC Number	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Paramter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detect Flag	Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent	Analysis Lot ID	Validation Status Code	Use Flag
WA-61496	2014-3136	CAWA-14-49274	REG	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	498	ug/kg	0.498	mg/kg			SD	04/04/2014		1376719	VAL	Y
WA-61494	2014-3136	CAWA-14-49279	FD	INIT	LCMS/MS HIGH EXPLOSIVES	SW-846:8321A_MOD	Tetryl	U	UJ	HE12a	N	490	ug/kg	0.49	mg/kg			SD	04/04/2014		1376719	VAL	Y
WA-61496	2014-3136	CAWA-14-49281	FR	INIT	INORGANIC	SW-846:6020	Arsenic	J	U	I4	N	1.99	ug/L	1.99	ug/L			W	04/04/2014		1384015	VAL	Y

Reason Code	Description
HE12a	The LCS percent recovery was < the Lower Acceptance Limit but >10%. Follow the external laboratory limits.
I4	the sample result is =<5x the concentration of related analyte in the method blank.
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49272	WA-61494	REG	SW-846:6010C	0	17
CAWA-14-49272	WA-61494	REG	SW-846:6020	0	5
CAWA-14-49272	WA-61494	REG	SW-846:7471A	0	1
CAWA-14-49272	WA-61494	REG	SW-846:8082	0	7
CAWA-14-49272	WA-61494	REG	SW-846:8321A_MOD	0	20
CAWA-14-49273	WA-61495	REG	SW-846:6010C	0	17
CAWA-14-49273	WA-61495	REG	SW-846:6020	0	5
CAWA-14-49273	WA-61495	REG	SW-846:7471A	0	1
CAWA-14-49273	WA-61495	REG	SW-846:8082	0	7
CAWA-14-49273	WA-61495	REG	SW-846:8321A_MOD	0	20
CAWA-14-49274	WA-61496	REG	SW-846:6010C	0	17
CAWA-14-49274	WA-61496	REG	SW-846:6020	0	5
CAWA-14-49274	WA-61496	REG	SW-846:7471A	0	1
CAWA-14-49274	WA-61496	REG	SW-846:8082	0	7
CAWA-14-49274	WA-61496	REG	SW-846:8321A_MOD	0	20
CAWA-14-49279	WA-61494	FD	SW-846:6010C	0	17

DATA VALIDATION REPORT

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49279	WA-61494	FD	SW-846:6020	0	5
CAWA-14-49279	WA-61494	FD	SW-846:7471A	0	1
CAWA-14-49279	WA-61494	FD	SW-846:8082	0	7
CAWA-14-49279	WA-61494	FD	SW-846:8321A_MOD	0	20
CAWA-14-49281	WA-61496	FR	EPA:245.2	0	1
CAWA-14-49281	WA-61496	FR	SW-846:6010C	0	13
CAWA-14-49281	WA-61496	FR	SW-846:6020	0	9

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

May 01, 2014

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL ER
Work Order: 346169
SDG: 2014-3136

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on April 08, 2014, and analyzed for Explosives by LCMSMS, GC Semivolatile PCB and Metals. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Hope Taylor for
Valerie Davis
Project Manager

Chain of Custody: 2014-3136
Enclosures

ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Work Order #: 346169
SDG: 2014-3136

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Case Narrative

Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Workorder #: 346169
SDG # : 2014-3136

May 01, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 08, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
346169001	CAWA-14-49272
346169002	CAWA-14-49279
346169003	CAWA-14-49273
346169004	CAWA-14-49274
346169005	CAWA-14-49281

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, GC Semivolatile PCB and Metals.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.

Hope Taylor for
Valerie Davis
Project Manager

List of current GEL Certifications as of 01 May 2014

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122014−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−14−9
Utah NELAP	SC000122013−11
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Chain of Custody and Supporting Documentation

General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

346169 ADEP

COC/Lab Request #: 2014-3136

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Metals(W)	NMED Explosives list	Tal Metals
CAWA-14-49272	Apr 4 2014	11:20	SED	1			1
CAWA-14-49279	Apr 4 2014	11:20	SED	1		1	1
CAWA-14-49273	Apr 4 2014	11:37	SED	1			1
CAWA-14-49274	Apr 4 2014	11:50	SED	1			1
CAWA-14-49281	Apr 4 2014	12:10	W		1		

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Martin	4/7/14 3:00		H. Taylor	04/08/14 0945
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	**SDG/AR/COC/Work Order:** 3461169
Received By: H. Taylor	**Date Received:** 040814

Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts):
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓	✓		Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓	✓		Preservation Method: Ice bags Blue ice Dry ice None Other (describe) 2 *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	✓	✓		Temperature Device Serial #: 130462961 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓	✓		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	✓	✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓	✓		Sample ID's affected:
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: received 2 containers for ID CAWA-14-49279, chain indicates 3
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 5908 1776 8862-2

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JP Date 4-9-14 Page 1 of 1

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 07APR14
ACTWGT: 28.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

3

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWF0

FedEx Express

TRK# 0201 5908 1776 8862

TUE - 08 APR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 10/11

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Explosives by LCMSMS Analysis

Case Narrative

LC-MS/MS Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3136

Method/Analysis Information

Procedure:	**Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS) by SW-846 Method 8321 Modified (8321M)**
Analytical Method:	SW846 8321A Modified
Prep Method:	SW846 8330 PREP
Analytical Batch Number:	1376719
Prep Batch Number:	1376718

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8321A Modified:

Sample ID	Client ID
346169001	CAWA-14-49272
346169002	CAWA-14-49279
346169003	CAWA-14-49273
346169004	CAWA-14-49274
1203060318	Method Blank (MB)
1203060319	Laboratory Control Sample (LCS)
1203060320	345519001(CACV-14-49242) Matrix Spike (MS)
1203060321	345519001(CACV-14-49242) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP).

The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 17.

Primary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS (1203060319) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%. Both the MS (1203060320) and MSD (1203060321) had passing recoveries for Tetryl. The data are reported with the appropriate DER.

QC Sample Designation
Client sample 345519001 (CACV-14-49242) from SDG 2014-3094 was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
A final internal standard concentration of 100ug/L is employed in order to meet the minimum response factor requirement of 0.01 per EPA Method 8000C for the analysis of explosives on the API 4000.

The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Secondary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 345519001 (CACV-14-49242) from SDG 2014-3094 was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS (1203060320) did not meet acceptance criteria for the recovery of 2,4-Diamino-6-nitrotoluene at 44.4%. The limits are 61-133%. The LCS (1203060319) and MSD(1203060321) had passing recoveries for 2,4-Diamino-6-nitrotoluene. Target analytes were not detected in the parent sample, 345519001 (CACV-14-49242). The non-conforming MS recovery is attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The MS/MSD pair (1203060320/1203060321) did not meet acceptance criteria for RPD limits for 2,4-Diamino-6-nitrotoluene at 46.4% and for TATB at 54.1%. The limits are 0-30% for both analytes. TATB had passing spike recoveries in both the MS (1203060320) and MSD (1203060321). The MS (1203060320) had a low recovery of 2,4-Diamino-6-nitrotoluene. The non-conforming RPD recoveries are attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Internal Standard (ISTD) Acceptance
The internal standard was not added to the Secondary analyte extracts.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
The MS (1203060320) was re-analyzed for low spike recovery in the initial analysis. The low recovery was duplicated. The data from the original analysis are reported.

Miscellaneous Information

Data Exception (DER) Documentation
Data Exception Report 1286867 was generated for this SDG.

The LCS (1203060319) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%. Both the MS (1203060320) and MSD (1203060321) had passing recoveries for Tetryl. The data are reported with the appropriate DER.

The MS (1203060320) did not meet acceptance criteria for the recovery of 2,4-Diamino-6-nitrotoluene at 44.4%. The limits are 61-133%. The LCS (1203060319) and MSD(1203060321) had passing recoveries for 2,4-Diamino-6-nitrotoluene. Target analytes were not detected in the parent sample, 345519001 (CACV-14-49242). The non-conforming MS recovery is attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

The MS/MSD pair (1203060320/1203060321) did not meet acceptance criteria for RPD limits for 2,4-Diamino-6-nitrotoluene at 46.4% and for TATB at 54.1%. The limits are 0-30% for both analytes. TATB had passing spike recoveries in both the MS (1203060320) and MSD (1203060321). The MS (1203060320) had a low recovery of 2,4-Diamino-6-nitrotoluene. The non-conforming RPD recoveries are attributed to vagaries in the extraction process. The data are reported with the appropriate DER.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Additional Comments
Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Primary analyte analysis. It is coupled with a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for the Primary analyte analysis.

The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package.

Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the Primary Nitroaromatic and Nitramine analytes is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

The detection of the Secondary analytes is accomplished through analysis on the following reversed phase column:

YMC: J'sphere ODS-H80, 150 x 4.6mm I.D.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3136 GEL Work Order: 346169

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Michael A. Penny Jr. **Name: Michael Penny**

Date: 28 APR 2014 **Title: Group Leader**

Sample Data Summary

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49272

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169001

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424026.wiff

Date Analyzed: 25-APR-14 07:17

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49272

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169001

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	U	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49272

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169001

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140036.wiff

Date Analyzed: 14-APR-14 23:19

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	362	J	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49279

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169002

Sample Amount 2.04 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424027.wiff

Date Analyzed: 25-APR-14 07:52

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	490	U	147	490
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	490	U	147	490
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	490	U	147	490
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	490	U	147	490
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	490	U	147	490
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	490	U	147	490
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	490	U	147	490
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	490	U	147	490
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	490	U	147	490
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	490	U	147	490
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	490	U	147	490
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	490	U	147	490
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	490	U	147	490
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49279

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169002

Sample Amount 2.04 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	490	U	147	490
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	980	U	245	980
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49279

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169002

Sample Amount 2.04 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140037.wiff

Date Analyzed: 14-APR-14 23:36

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	980	U	294	980
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	980	U	294	980
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	980	U	294	980
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1960	U	647	1960
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1960	U	490	1960
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49273

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169003

Sample Amount 2.03 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424028.wiff

Date Analyzed: 25-APR-14 08:27

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	493	U	148	493
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	493	U	148	493
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	493	U	148	493
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	493	U	148	493
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	493	U	148	493
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	493	U	148	493
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	493	U	148	493
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	493	U	148	493
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	493	U	148	493
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	493	U	148	493
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	493	U	148	493
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	493	U	148	493
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	493	U	148	493
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49273

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169003

Sample Amount 2.03 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	493	U	148	493
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	985	U	246	985
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49273

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169003

Sample Amount 2.03 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140038.wiff

Date Analyzed: 14-APR-14 23:52

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	985	U	296	985
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	985	U	296	985
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	985	U	296	985
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1970	U	650	1970
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1970	U	493	1970
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49274

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169004

Sample Amount 2.01 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0424029.wiff

Date Analyzed: 25-APR-14 09:01

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	498	U	149	498
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	498	U	149	498
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	498	U	149	498
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	498	U	149	498
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	498	U	149	498
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	498	U	149	498
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	498	U	149	498
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	498	U	149	498
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	498	U	149	498
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	498	U	149	498
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	498	U	149	498
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	498	U	149	498
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	498	U	149	498
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49274

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169004

Sample Amount 2.01 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	498	U	149	498
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	995	U	249	995
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49274

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 346169004

Sample Amount 2.01 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140039.wiff

Date Analyzed: 15-APR-14 00:09

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	995	U	299	995
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	995	U	299	995
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	995	U	299	995
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1990	U	657	1990
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1990	U	498	1990
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC **GEL Job No (SDG):** 2014-3136

Lab Code: GEL **HPLC Column:** Ultracarb Phenomenex 5u ODS (20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
346169001	CAWA-14-49272	98	62 - 121	
346169002	CAWA-14-49279	97.2	62 - 121	
346169003	CAWA-14-49273	102	62 - 121	
346169004	CAWA-14-49274	75.6	62 - 121	
1203060318	MB for batch 1376718	94	62 - 121	
1203060319	LCS for batch 1376718	98.8	62 - 121	
1203060320	CACV-14-49242MS	100	62 - 121	
1203060321	CACV-14-49242MSD	98	62 - 121	

DNT = 3,4-Dinitrotoluene

Lab Code: GEL **HPLC Column:** YMC J'sphere ODS-H80

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
346169001	CAWA-14-49272	95.6	62 - 121	
346169002	CAWA-14-49279	95.6	62 - 121	
346169003	CAWA-14-49273	93.6	62 - 121	
346169004	CAWA-14-49274	95.2	62 - 121	
1203060318	MB for batch 1376718	94.8	62 - 121	
1203060319	LCS for batch 1376718	95.2	62 - 121	
1203060320	CACV-14-49242MS	98.4	62 - 121	
1203060321	CACV-14-49242MSD	98.4	62 - 121	

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Extract Batch Code: 1376718

Date Extracted: 09-APR-14

GEL LCS ID: 1203060319

GEL LCSDUP ID:

Analysis Date/Time: 25-APR-14 00:17

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
4-Amino-2,6-dinitrotoluene	5000	5250	105					62 - 135
HMX	5000	4060	81.2					58 - 123
Nitrobenzene	5000	4610	92.2					58 - 130
PETN	5000	4830	96.6					61 - 125
m-Dinitrobenzene	5000	5280	106					64 - 129
m-Nitrotoluene	5000	5070	101					60 - 126
o-Nitrotoluene	5000	4960	99.2					60 - 121
RDX	5000	4580	91.6					58 - 136
1,3,5-Trinitrobenzene	5000	4410	88.2					63 - 128
2-Amino-4,6-dinitrotoluene	5000	5230	105					67 - 126
2,6-Dinitrotoluene	5000	5030	101					65 - 119
2,4-Dinitrotoluene	5000	5170	103					69 - 122
2,4,6-Trinitrotoluene	5000	4720	94.4					67 - 126
Tetryl	5000	1260	25.2 *					36 - 131
p-Nitrotoluene	5000	5040	101					65 - 119

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Extract Batch Code: 1376718

Date Extracted: 09-APR-14

GEL LCS ID: 1203060319

GEL LCSDUP ID:

Analysis Date/Time: 14-APR-14 19:58

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4-Diamino-6-nitrotoluene	5000	4310	86.2					65 - 116
2,6-Diamino-4-nitrotoluene	5000	4590	91.8					65 - 127
3,5-Dinitroaniline	5000	3910	78.2					61 - 131
TATB	5000	3460	69.2					36 - 156
tris(o-cresyl) phosphate	5000	5220	104					70 - 120

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CACV-14-49242

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Extract Batch Code: 1376718

Date Extracted: 09-APR-14

GEL Spike ID: 1203060320

GEL SpikeDup ID: 1203060321

Analysis Date/Time: 25-APR-14 01:27

MSD Analysis Date/Time: 25-APR-14 02:02

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
m-Nitrotoluene	4926.108	0	4520	91.8	4650	93	2.79	30	59 - 126
o-Nitrotoluene	4926.108	0	4670	94.8	5000	100	6.83	30	60 - 116
p-Nitrotoluene	4926.108	0	4780	97	4880	97.6	2.11	30	61 - 120
2,4-Dinitrotoluene	4926.108	0	5290	107	4870	97.4	8.28	30	69 - 124
2,4,6-Trinitrotoluene	4926.108	0	4610	93.6	4850	97	5.06	30	60 - 129
1,3,5-Trinitrobenzene	4926.108	0	4960	101	4930	98.6	.519	30	63 - 121
2,6-Dinitrotoluene	4926.108	0	5100	104	5090	102	.264	30	65 - 119
4-Amino-2,6-dinitrotoluene	4926.108	0	5450	111	5320	106	2.38	30	62 - 135
Nitrobenzene	4926.108	0	4770	96.8	4620	92.4	3.16	30	58 - 120
m-Dinitrobenzene	4926.108	0	5760	117	5570	111	3.42	30	64 - 129
Tetryl	4926.108	0	3090	62.8	3860	77.2	22	30	36 - 130
RDX	4926.108	0	4940	100	5350	107	8.05	30	45 - 135
PETN	4926.108	0	4650	94.4	5050	101	8.24	30	58 - 125
HMX	4926.108	0	4450	90.4	4650	93	4.32	30	54 - 127
2-Amino-4,6-dinitrotoluene	4926.108	0	5210	106	5050	101	3.15	30	67 - 133

#Column to be used to flag recovery and RPD values with an asterisk

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CACV-14-49242

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Extract Batch Code: 1376718

Date Extracted: 09-APR-14

GEL Spike ID: 1203060320

GEL SpikeDup ID: 1203060321

Analysis Date/Time: 14-APR-14 20:32

MSD Analysis Date/Time: 14-APR-14 20:48

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec	#	MSD Conc	MSD Rec	#	RPD	#	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	4926.108	0	2190	44.4	*	3510	70.2		46.4	*	30	61 - 133
2,6-Diamino-4-nitrotoluene	4926.108	0	3250	66		4250	85		26.6		30	65 - 119
3,5-Dinitroaniline	4926.108	0	3820	77.6		3930	78.6		2.77		30	61 - 131
TATB	4926.108	0	5240	106		3010	60.2		54.1	*	30	20 - 164
tris(o-cresyl) phosphate	4926.108	0	5130	104		5240	105		2.06		30	70 - 123

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060318

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424013.wiff

Date Analyzed: 24-APR-14 23:42

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060318

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	U	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060318

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140023.wiff

Date Analyzed: 14-APR-14 19:41

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060319

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424014.wiff

Date Analyzed: 25-APR-14 00:17

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	1260		150	500
479-45-8	*Tetryl*				
2691-41-0	HMX	4060		150	500
2691-41-0	*HMX*				
99-35-4	1,3,5-Trinitrobenzene	4410		150	500
99-35-4	*1,3,5-Trinitrobenzene*				
121-82-4	RDX	4580		150	500
121-82-4	*RDX*				
98-95-3	Nitrobenzene	4610		150	500
98-95-3	*Nitrobenzene*				
118-96-7	2,4,6-Trinitrotoluene	4720		150	500
118-96-7	*2,4,6-Trinitrotoluene*				
78-11-5	PETN	4830		250	1000
78-11-5	*PETN*				
88-72-2	o-Nitrotoluene	4960		150	500
88-72-2	*o-Nitrotoluene*				
606-20-2	2,6-Dinitrotoluene	5030		150	500
606-20-2	*2,6-Dinitrotoluene*				
99-99-0	p-Nitrotoluene	5040		150	500
99-99-0	*p-Nitrotoluene*				
99-08-1	m-Nitrotoluene	5070		150	500
99-08-1	*m-Nitrotoluene*				
121-14-2	2,4-Dinitrotoluene	5170		150	500
121-14-2	*2,4-Dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	5230		150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060319

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
19406-51-0	4-Amino-2,6-dinitrotoluene	5250		150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
99-65-0	m-Dinitrobenzene	5280		150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1376718

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060319

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140024.wiff

Date Analyzed: 14-APR-14 19:58

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	3460		300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	3910		300	1000
618-87-1	*3,5-Dinitroaniline*				
6629-29-4	2,4-Diamino-6-nitrotoluene	4310		500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4590		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5220		300	1000
78-30-8	*tris(o-cresyl) phosphate*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060320

Sample Amount 2.03 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0424016.wiff

Date Analyzed: 25-APR-14 01:27

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	3090		148	493
479-45-8	*Tetryl*				
2691-41-0	HMX	4450		148	493
2691-41-0	*HMX*				
99-08-1	m-Nitrotoluene	4520		148	493
99-08-1	*m-Nitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4610		148	493
118-96-7	*2,4,6-Trinitrotoluene*				
78-11-5	PETN	4650		246	985
78-11-5	*PETN*				
88-72-2	o-Nitrotoluene	4670		148	493
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	4770		148	493
98-95-3	*Nitrobenzene*				
99-99-0	p-Nitrotoluene	4780		148	493
99-99-0	*p-Nitrotoluene*				
121-82-4	RDX	4940		148	493
121-82-4	*RDX*				
99-35-4	1,3,5-Trinitrobenzene	4960		148	493
99-35-4	*1,3,5-Trinitrobenzene*				
606-20-2	2,6-Dinitrotoluene	5100		148	493
606-20-2	*2,6-Dinitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	5210		148	493
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	5290		148	493
121-14-2	*2,4-Dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060320

Sample Amount 2.03 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
19406-51-0	4-Amino-2,6-dinitrotoluene	5450		148	493
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
99-65-0	m-Dinitrobenzene	5760		148	493
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060320

Sample Amount 2.03 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140026.wiff

Date Analyzed: 14-APR-14 20:32

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
6629-29-4	2,4-Diamino-6-nitrotoluene	2190		493	1970
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	3250		650	1970
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
618-87-1	3,5-Dinitroaniline	3820		296	985
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	5130		296	985
78-30-8	*tris(o-cresyl) phosphate*				
3058-38-6	TATB	5240		296	985
3058-38-6	*TATB*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060321

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0424017.wiff

Date Analyzed: 25-APR-14 02:02

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	3860		150	500
479-45-8	*Tetryl*				
98-95-3	Nitrobenzene	4620		150	500
98-95-3	*Nitrobenzene*				
2691-41-0	HMX	4650		150	500
2691-41-0	*HMX*				
99-08-1	m-Nitrotoluene	4650		150	500
99-08-1	*m-Nitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4850		150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4870		150	500
121-14-2	*2,4-Dinitrotoluene*				
99-99-0	p-Nitrotoluene	4880		150	500
99-99-0	*p-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4930		150	500
99-35-4	*1,3,5-Trinitrobenzene*				
88-72-2	o-Nitrotoluene	5000		150	500
88-72-2	*o-Nitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	5050		150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
78-11-5	PETN	5050		250	1000
78-11-5	*PETN*				
606-20-2	2,6-Dinitrotoluene	5090		150	500
606-20-2	*2,6-Dinitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5320		150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060321

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
121-82-4	RDX	5350		150	500
121-82-4	*RDX*				
99-65-0	m-Dinitrobenzene	5570		150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49242(345519001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3136

Matrix: SOIL

GEL Sample ID: 1203060321

Sample Amount 2 g

Date Received: 08-APR-14

Moisture:

Extraction Batch ID: 1376718

Extraction Type Sonication

Date Extracted: 09-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04140027.wiff

Date Analyzed: 14-APR-14 20:48

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	3010		300	1000
3058-38-6	*TATB*				
6629-29-4	2,4-Diamino-6-nitrotoluene	3510		500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
618-87-1	3,5-Dinitroaniline	3930		300	1000
618-87-1	*3,5-Dinitroaniline*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4250		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5240		300	1000
78-30-8	*tris(o-cresyl) phosphate*				

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 24-APR-14 16:40

GEL Data File: EXP0424001.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 24-APR-14 17:15

GEL Data File: EXP0424002.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 14-APR-14 13:33

GEL Data File: EXS04140001.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	3.17
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 14-APR-14 13:50

GEL Data File: EXS04140002.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 24-APR-14 21:20

GEL Data File: EXP0424009.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 24-APR-14 22:31

GEL Data File: EXP0424011.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 25-APR-14 06:07

GEL Data File: EXP0424024.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 25-APR-14 10:12

GEL Data File: EXP0424031.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 14-APR-14 16:04

GEL Data File: EXS04140010.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	7.28
TATB	0	0
3,5-Dinitroaniline	0	1.19
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 14-APR-14 16:37

GEL Data File: EXS04140012.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	2.91
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 14-APR-14 18:35

GEL Data File: EXS04140019.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 14-APR-14 19:08

GEL Data File: EXS04140021.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 14-APR-14 22:45

GEL Data File: EXS04140034.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 15-APR-14 00:26

GEL Data File: EXS04140040.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3136

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 15-APR-14 00:59

GEL Data File: EXS04140042.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	4.71
TATB	0	0
3,5-Dinitroaniline	0	.901
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
26-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LC-MS/MS	SW846 8321A Modified	Solid	LANL
Batch ID:	**Sample Numbers:**		
1376719	See Below		

Potentially affected work order(s)(SDG): 345519(2014-3094),346169(2014-3136)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for MS/MSD, or PS/PSD

Failed Recovery for LCS/LCSD

Specification and Requirements Exception Description:	DER Disposition:
1. The LCS (1203060319) did not meet acceptance criteria for the recovery of Tetryl at 25.2%. The limits are 36-131%.	1. Both the MS (1203060320) and MSD (1203060321) had passing recoveries for Tetryl. The data are reported with the appropriate DER and the discrepancy is noted in the Case Narrative.
2. The MS (1203060320) did not meet acceptance criteria for the recovery of 2,4-Diamino-6-nitrotoluene at 44.4%. The limits are 61-133%.	2. The LCS (1203060319) and MSD (1203060321) had passing recoveries for 2,4-Diamino-6-nitrotoluene. Target analytes were not detected in the parent sample, 345519001 (CACV-14-49242). The non-conforming MS spike recovery is attributed to vagaries in the extraction process. The data are reported with the appropriate DER and the discrepancy is noted in the Case Narrative.
3. The MS/MSD pair (1203060320/1203060321) did not meet RPD acceptance criteria for 2,4-Diamino-6-nitrotoluene at 46.4% and for TATB at 54.1%. The limits are 0-30% for both analytes.	3. TATB had passing spike recoveries in both the MS (1203060320) and MSD (1203060321). The MS (1203060320) had a low recovery of 2,4-Diamino-6-nitrotoluene. The non-conforming RPD recoveries are attributed to vagaries in the extraction process. The data are reported with the appropriate DER and the discrepancies are noted in the Case Narrative.

Originator's Name:

Lynne Russell 26-APR-14

Data Validator/Group Leader:

Michael Penny 28-APR-14

PCB Analysis

Case Narrative

PCB Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3136

Method/Analysis Information

Procedure:	**Analysis of Polychlorinated Biphenyls by ECD**
Analytical Method:	SW846 3541/8082
Prep Method:	SW846 3541
Analytical Batch Number:	1380349
Prep Batch Number:	1380348

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082:

Sample ID	Client ID
346169001	CAWA-14-49272
346169002	CAWA-14-49279
346169003	CAWA-14-49273
346169004	CAWA-14-49274
1203068844	Method Blank (MB)
1203068845	346169001(CAWA-14-49272) Matrix Spike (MS)
1203068846	346169001(CAWA-14-49272) Matrix Spike Duplicate (MSD)
1203068847	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 20.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standards (ICV or CCV) met the acceptance criteria. All analytes were within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
Samples 1203068846 (CAWA-14-49272MSD) and 346169001 (CAWA-14-49272) did not meet surrogate recovery acceptance criteria due to sample matrix interference as the MS/MSD and the parent sample displayed similar surrogate recovery.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 346169001 (CAWA-14-49272) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recoveries for this SDG were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries for this SDG were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns. All sample extracts were cleaned using alumina. Additionally, copper was added to all sample extracts to remove sulfur.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this batch.

Miscellaneous Information

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. DER #1284890 was generated for this SDG.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

Due to software issue, the surrogate recovery range was not indicated or possibly indicated incorrectly in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Due to rounding differences in the calculation between the forms, the data reported in Sample Summary (form 1) and Spike Recovery Report (form 3) may differ slightly from the data reported in Identification Summary (form 10).

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD9A.I_1	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 1	30m x 0.25mm, 0.25um
ECD9A.I_2	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 2	30m x 0.25mm, 0.20um

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the

requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3136 GEL Work Order: 346169

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Jimin Cao **Name: Jimin Cao**

Date: 02 MAY 2014 **Title: Data Validator**

Sample Data Summary

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3136**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SED**
Lab Sample ID:	**346169001**	**Date Received:**	**04/08/2014 09:05**	**%Moisture:**	**21.1**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA-14-49272**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380349**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 14:30**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 10:12**	**Aliquot:**	**30.38 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1846.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1846.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	4.17	ug/kg	1.39	4.17	1
11104-28-2	Aroclor-1221	U	4.17	ug/kg	1.39	4.17	1
11141-16-5	Aroclor-1232	U	4.17	ug/kg	1.39	4.17	1
53469-21-9	Aroclor-1242	U	4.17	ug/kg	1.39	4.17	1
12672-29-6	Aroclor-1248	U	4.17	ug/kg	1.39	4.17	1
11097-69-1	Aroclor-1254	J	3.51	ug/kg	1.39	4.17	1
11096-82-5	Aroclor-1260		5.83	ug/kg	1.39	4.17	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3136**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SED**
Lab Sample ID:	**346169002**	**Date Received:**	**04/08/2014 09:05**	**%Moisture:**	**18.3**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA-14-49279**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380349**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 15:13**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 10:12**	**Aliquot:**	**30.39 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1849.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1849.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	4.03	ug/kg	1.34	4.03	1
11104-28-2	Aroclor-1221	U	4.03	ug/kg	1.34	4.03	1
11141-16-5	Aroclor-1232	U	4.03	ug/kg	1.34	4.03	1
53469-21-9	Aroclor-1242	U	4.03	ug/kg	1.34	4.03	1
12672-29-6	Aroclor-1248	U	4.03	ug/kg	1.34	4.03	1
11097-69-1	Aroclor-1254	J	2.35	ug/kg	1.34	4.03	1
11096-82-5	Aroclor-1260		4.40	ug/kg	1.34	4.03	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3136**	**Date Collected:**	**04/04/2014 11:37**	**Matrix:**	**SED**
Lab Sample ID:	**346169003**	**Date Received:**	**04/08/2014 09:05**	**%Moisture:**	**.6**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA-14-49273**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380349**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 15:28**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 10:12**	**Aliquot:**	**30.13 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1850.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1850.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.34	ug/kg	1.11	3.34	1
11104-28-2	Aroclor-1221	U	3.34	ug/kg	1.11	3.34	1
11141-16-5	Aroclor-1232	U	3.34	ug/kg	1.11	3.34	1
53469-21-9	Aroclor-1242	U	3.34	ug/kg	1.11	3.34	1
12672-29-6	Aroclor-1248	U	3.34	ug/kg	1.11	3.34	1
11097-69-1	Aroclor-1254	U	3.34	ug/kg	1.11	3.34	1
11096-82-5	Aroclor-1260	U	3.34	ug/kg	1.11	3.34	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3136**	**Date Collected:**	**04/04/2014 11:50**	**Matrix:**	**SED**
Lab Sample ID:	**346169004**	**Date Received:**	**04/08/2014 09:05**	**%Moisture:**	**1.3**
		Client:	**ARSL004**	**Project:**	**LANL00114**
Client ID:	**CAWA-14-49274**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380349**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 15:42**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 10:12**	**Aliquot:**	**30.04 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1851.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1851.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.37	ug/kg	1.12	3.37	1
11104-28-2	Aroclor-1221	U	3.37	ug/kg	1.12	3.37	1
11141-16-5	Aroclor-1232	U	3.37	ug/kg	1.12	3.37	1
53469-21-9	Aroclor-1242	U	3.37	ug/kg	1.12	3.37	1
12672-29-6	Aroclor-1248	U	3.37	ug/kg	1.12	3.37	1
11097-69-1	Aroclor-1254	J	2.26	ug/kg	1.12	3.37	1
11096-82-5	Aroclor-1260		7.04	ug/kg	1.12	3.37	1

Quality Control Summary

PCB

Surrogate Recovery Report

SDG Number: 2014-3136

Matrix Type: SOLID

Sample ID	Client ID	4CMX 1 %REC #	4CMX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #
1203068844	MB for batch 1380348	71	60	79	77
1203068847	LCS for batch 1380348	68	56	77	75
346169001	CAWA-14-49272	49	42 *	57	58
1203068845	CAWA-14-49272MS	59	50	74	77
1203068846	CAWA-14-49272MSD	43 *	36 *	65	69
346169002	CAWA-14-49279	55	48	68	70
346169003	CAWA-14-49273	69	65	86	81
346169004	CAWA-14-49274	63	61	75	75

Surrogate		Acceptance Limits
4CMX	= 4cmx	(44%-106%)
DCB	= Decachlorobiphenyl	(35%-119%)

* Recovery outside Acceptance Limits
\# Column to be used to flag recovery values
D Sample Diluted

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3136**	**Sample Type:**	**Matrix Spike**	
Client ID:	**CAWA-14-49272MS**	**Matrix:**	**SED**	
Lab Sample ID	**1203068845**	**%Moisture:**	**21.1**	
Instrument:	**ECD9A.I**	**Analysis Date:**	**04/18/2014 14:45**	**Dilution: 1**
Analyst:	**YS1**	**Prep Batch ID:**	**1380348**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1380349**	

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg		Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	MS	Aroclor-1016	41.9	0.00	U	25.6	61	25-125
11096-82-5	MS	Aroclor-1260	41.9	5.83		34.5	68	28-127

PCB

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3136**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**CAWA-14-49272MSD**	**Matrix:**	**SED**	
Lab Sample ID	**1203068846**	**%Moisture:**	**21.1**	
Instrument:	**ECD9A.I**	**Analysis Date:**	**04/18/2014 14:59**	**Dilution: 1**
Analyst:	**YS1**	**Prep Batch ID:**	**1380348**	
Inj. Vol:	**1 uL**	**Batch ID:**	**1380349**	

CAS No	Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
12674-11-2	MSD Aroclor-1016	41.8	0.00 U	21.1	51	25-125	19	0-30
11096-82-5	MSD Aroclor-1260	41.8	5.83	30.7	59	28-127	12	0-30

PCB

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3136**
Client ID: **LCS for batch 1380348**
Lab Sample ID **1203068847**
Instrument: **ECD9A.I**
Analyst: **YS1**
Inj. Vol: **1 uL**

Sample Type: **Laboratory Control Sample**
Matrix: **SOIL**
Analysis Date: **04/18/2014 14:16**
Prep Batch ID: **1380348**
Batch ID: **1380349**
Dilution: 1

CAS No		Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	LCS	Aroclor-1016	33.0	0.0	22.1	67	39-120
11096-82-5	LCS	Aroclor-1260	33.0	0.0	24.8	75	50-116

Method Blank Summary

SDG Number:	**2014-3136**	**Client:**	**ARSL004**	**Matrix:**	**SOIL**
Client ID:	**MB for batch 1380348**	**Instrument ID:**	**ECD9A.I_1** **ECD9A.I_2**	**Data File:**	**041814.S\E9d1844.D** **041814.S\E9d1844.D**
Lab Sample ID:	**1203068844**				
Column:	**RTX-CLPEST 1** **RTX-CLPEST 2**	**Prep Date:**	**04/17/2014 10:12**	**Analyzed:**	**04/18/14 14:01**

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 1380348	**1203068847**	**041814.S\E9d1845.D** **041814.S\E9d1845.D**	**04/18/14**	**1416**
02 CAWA-14-49272	**346169001**	**041814.S\E9d1846.D** **041814.S\E9d1846.D**	**04/18/14**	**1430**
03 CAWA-14-49272MS	**1203068845**	**041814.S\E9d1847.D** **041814.S\E9d1847.D**	**04/18/14**	**1445**
04 CAWA-14-49272MSD	**1203068846**	**041814.S\E9d1848.D** **041814.S\E9d1848.D**	**04/18/14**	**1459**
05 CAWA-14-49279	**346169002**	**041814.S\E9d1849.D** **041814.S\E9d1849.D**	**04/18/14**	**1513**
06 CAWA-14-49273	**346169003**	**041814.S\E9d1850.D** **041814.S\E9d1850.D**	**04/18/14**	**1528**
07 CAWA-14-49274	**346169004**	**041814.S\E9d1851.D** **041814.S\E9d1851.D**	**04/18/14**	**1542**

Quality Control Data

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3136**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203068844**				
Client Sample:	**QC for batch 1380348**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**MB for batch 1380348**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380349**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 14:01**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 10:12**	**Aliquot:**	**30.05 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1844.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1844.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.33	ug/kg	1.11	3.33	1
11104-28-2	Aroclor-1221	U	3.33	ug/kg	1.11	3.33	1
11141-16-5	Aroclor-1232	U	3.33	ug/kg	1.11	3.33	1
53469-21-9	Aroclor-1242	U	3.33	ug/kg	1.11	3.33	1
12672-29-6	Aroclor-1248	U	3.33	ug/kg	1.11	3.33	1
11097-69-1	Aroclor-1254	U	3.33	ug/kg	1.11	3.33	1
11096-82-5	Aroclor-1260	U	3.33	ug/kg	1.11	3.33	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3136**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SED**
Lab Sample ID:	**1203068845**	**Date Received:**	**04/08/2014 09:05**	**%Moisture:**	**21.1**
Client Sample:	**QC for batch 1380348**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**CAWA-14-49272MS**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380349**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 14:45**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 10:12**	**Aliquot:**	**30.28 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1847.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1847.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		25.6	ug/kg	1.39	4.19	1
11104-28-2	Aroclor-1221	U	4.19	ug/kg	1.39	4.19	1
11141-16-5	Aroclor-1232	U	4.19	ug/kg	1.39	4.19	1
53469-21-9	Aroclor-1242	U	4.19	ug/kg	1.39	4.19	1
12672-29-6	Aroclor-1248	U	4.19	ug/kg	1.39	4.19	1
11097-69-1	Aroclor-1254		9.79	ug/kg	1.39	4.19	1
11096-82-5	Aroclor-1260		34.5	ug/kg	1.39	4.19	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3136**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SED**
Lab Sample ID:	**1203068846**	**Date Received:**	**04/08/2014 09:05**	**%Moisture:**	**21.1**
Client Sample:	**QC for batch 1380348**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**CAWA-14-49272MSD**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380349**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 14:59**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 10:12**	**Aliquot:**	**30.33 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1848.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1848.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		21.1	ug/kg	1.39	4.18	1
11104-28-2	Aroclor-1221	U	4.18	ug/kg	1.39	4.18	1
11141-16-5	Aroclor-1232	U	4.18	ug/kg	1.39	4.18	1
53469-21-9	Aroclor-1242	U	4.18	ug/kg	1.39	4.18	1
12672-29-6	Aroclor-1248	U	4.18	ug/kg	1.39	4.18	1
11097-69-1	Aroclor-1254	P	17.3	ug/kg	1.39	4.18	1
11096-82-5	Aroclor-1260		30.7	ug/kg	1.39	4.18	1

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3136**			**Matrix:**	**SOIL**
Lab Sample ID:	**1203068847**				
Client Sample:	**QC for batch 1380348**	**Client:**	**ARSL004**	**Project:**	**QC**
Client ID:	**LCS for batch 1380348**	**Method:**	**SW846 3541/8082**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1380349**	**Inst:**	**ECD9A.I**	**Dilution:**	**1**
Run Date:	**04/18/2014 14:16**	**Analyst:**	**YS1**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/17/2014 10:12**	**Aliquot:**	**30.34 g**	**Final Volume:**	**1 mL**
Data File:	**041814.S\E9d1845.D**	**Column:**	**1 RTX-CLPEST 1**		
	041814.S\E9d1845.D		**2 RTX-CLPEST 2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		22.1	ug/kg	1.10	3.30	2
11104-28-2	Aroclor-1221	U	3.30	ug/kg	1.10	3.30	1
11141-16-5	Aroclor-1232	U	3.30	ug/kg	1.10	3.30	1
53469-21-9	Aroclor-1242	U	3.30	ug/kg	1.10	3.30	1
12672-29-6	Aroclor-1248	U	3.30	ug/kg	1.10	3.30	1
11097-69-1	Aroclor-1254	U	3.30	ug/kg	1.10	3.30	1
11096-82-5	Aroclor-1260		24.8	ug/kg	1.10	3.30	1

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
21-APR-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
GC/ECD	SW846 3541/8082	Solid	LANL
Batch ID:	**Sample Numbers:**		
1380349	See Below		

Potentially affected work order(s)(SDG): 346169(2014-3136),346280(2014-3152),346403(2014-3161),346412(2014-3162)

Application Issues:

Failed Yield for Surrogates

Specification and Requirements Exception Description:	DER Disposition:
1. Sample 346169001 and 1203068846MSD did not meet the surrogate recovery acceptance criteria. 2. Sample 346412001 did not meet the surrogate recovery acceptance criteria. Please see the QC summary report for specific failures.	1. The MS displayed similarly low, but passing, surrogate recoveries. The relative percent difference between the MS and MSD met acceptance limits for all spiked Aroclors. As the MS and MSD displayed similar recoveries, the surrogate failures in the parent sample and MSD were attributed to sample matrix interference and the data have been reported. 2. The sample has been scheduled for re-extraction. The re-extraction met the surrogate recovery acceptance criteria. The re-extraction data was reported.

Originator's Name:

Yiping Shi 25-APR-14

Data Validator/Group Leader:

Jimin Cao 02-MAY-14

Metals Analysis

Case Narrative

Metals Fractional Narrative
ARS International, LLC (ARSL)
SDG 2014-3136

Sample Analysis

Sample ID	Client ID
346169001	CAWA-14-49272
346169002	CAWA-14-49279
346169003	CAWA-14-49273
346169004	CAWA-14-49274
346169005	CAWA-14-49281
1203070768	Method Blank (MB) **ICP**
1203078103	Method Blank (MB) **ICP**
1203070769	Laboratory Control Sample (LCS)
1203078104	Laboratory Control Sample (LCS)
1203078107	346169005(CAWA-14-49281L) Serial Dilution (SD)
1203070772	346280001(CACH-14-56607L) Serial Dilution (SD)
1203078105	346169005(CAWA-14-49281D) Sample Duplicate (DUP)
1203070770	346280001(CACH-14-56607D) Sample Duplicate (DUP)
1203078106	346169005(CAWA-14-49281S) Matrix Spike (MS)
1203070771	346280001(CACH-14-56607S) Matrix Spike (MS)
1203080104	346280001(CACH-14-56607PS) Post Spike (PS)
1203072728	Method Blank (MB) **ICP-MS**
1203078108	Method Blank (MB) **ICP-MS**
1203072729	Laboratory Control Sample (LCS)
1203078109	Laboratory Control Sample (LCS)
1203078112	346169005(CAWA-14-49281L) Serial Dilution (SD)
1203072732	346403001(CAMO-14-75317L) Serial Dilution (SD)
1203078110	346169005(CAWA-14-49281D) Sample Duplicate (DUP)
1203072730	346403001(CAMO-14-75317D) Sample Duplicate (DUP)
1203078111	346169005(CAWA-14-49281S) Matrix Spike (MS)
1203072731	346403001(CAMO-14-75317S) Matrix Spike (MS)
1203079392	346169005(CAWA-14-49281PS) Post Spike (PS)
1203073223	Method Blank (MB) **CVAA**
1203074621	Method Blank (MB) **CVAA**
1203073224	Laboratory Control Sample (LCS)
1203074622	Laboratory Control Sample (LCS)

1203074625	346169001(CAWA-14-49272L) Serial Dilution (SD)
1203073227	346169005(CAWA-14-49281L) Serial Dilution (SD)
1203074623	346169001(CAWA-14-49272D) Sample Duplicate (DUP)
1203073225	346169005(CAWA-14-49281D) Sample Duplicate (DUP)
1203074624	346169001(CAWA-14-49272S) Matrix Spike (MS)
1203073226	346169005(CAWA-14-49281S) Matrix Spike (MS)

Samples 346169 001, 002, 003 and 004 in this SDG were analyzed on a "dry weight" basis.
Samples 346169 005 in this SDG were analyzed on an "as received" basis.

Method/Analysis Information

Analytical Batch:	1381109, 1384013, 1381872, 1384015, 1382060 and 1382560
Prep Batch :	1381108, 1384011, 1381871, 1384014, 1382059 and 1382559
Standard Operating Procedures:	GL-MA-E-013 REV# 22, GL-MA-E-009 REV# 23, GL-MA-E-006 REV# 10, GL-MA-E-014 REV# 25 and GL-MA-E-010 REV# 27
Analytical Method:	SW846 3050B/6010C, SW846 3005A/6010C, SW846 3050B/6020A, SW846 3005A/6020A, EPA 245.1/245.2 and SW846 7471A
Prep Method :	SW846 3050B, SW846 3005A, EPA 245.1/245.2 Prep and SW846 7471A Prep

Preparation/Analytical Method Verification
The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL/PQL Requirements
The PQL/CRDL standard recoveries met the advisory control limits except for thallium in file 140501-5 at 19:45. Thallium recovered high in the closing CRDL standard; however the analyte concentration in the client aqueous sample associated with this standard was less than the MDL.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blanks (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 346280001 (CACH-14-56607)-ICP, 346169005 (CAWA-14-49281)-ICP, ICP-MS and CVAA, 346403001 (CAMO-14-75317)-ICP-MS and 346169001 (CAWA-14-49272)-CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS did not meet all the recommended quality control acceptance criteria for percent recoveries for the applicable analytes. The recoveries for barium, calcium, magnesium, and potassium were not within the acceptance limits in sample 1203070771 (CACH-14-56607)-ICP. The thallium recovery was not within the acceptance limits in sample 1203078111 (CAWA-14-49281)-ICP-MS. See data exception reports (DER ID 1289020 and 1288690) in the miscellaneous data section of this data package.

Duplicate Relative Percent Difference (RPD) Statement
The relative percent difference (RPD) obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the contract required detection limit (RL), a control of +/-RL is used to evaluate the DUP results. Not all applicable analytes met these requirements. The RPD values for magnesium and vanadium were not within the acceptance limits in sample 1203070770 (CACH-14-56607)-ICP. See data exception report (DER ID 1289020) in the miscellaneous data section of this data package.

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recovery for thallium and verifies the presence of matrix interferences.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the established acceptance percent difference criteria.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the

environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG were diluted the standard two times for solids analyzed on the ICP-MS.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. Data exception reports are included in the Miscellaneous Data section of the package. Data exception reports (DER ID 1288690 and 1289020) were generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Pat Steele **Date:** 05/05/2014

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3136 GEL Work Order: 346169

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

J Value is estimated

N Metals--The Matrix spike sample recovery is not within specified control limits

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by Pat Steele 05/05/2014

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3136 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346169001 **BASIS:** Dry Weight **DATE COLLECTED** 04−APR−14

CLIENT ID: CAWA−14−49272 **LEVEL:** Low **DATE RECEIVED** 08−APR−14

MATRIX: SED **%SOLIDS:** 79

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	6020000	ug/kg		8470	24900	24900	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−36−0	Antimony	1240	ug/kg	U	411	1240	1240	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−38−2	Arsenic	1070	ug/kg	J	223	1110	1110	2	MS	PRB	05/01/14 03:21	140430−3	1381872
7440−39−3	Barium	457000	ug/kg		124	622	622	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−41−7	Beryllium	776	ug/kg		22.3	111	111	2	MS	PRB	05/01/14 03:21	140430−3	1381872
7440−43−9	Cadmium	622	ug/kg	U	124	622	622	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−70−2	Calcium	4890000	ug/kg		9960	31100	31100	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−47−3	Chromium	5260	ug/kg		187	622	622	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−48−4	Cobalt	3440	ug/kg		187	622	622	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−50−8	Copper	9560	ug/kg		373	1240	1240	1	P	HSC	05/02/14 11:25	050214−2	1381109
7439−89−6	Iron	9990000	ug/kg		9960	31100	31100	1	P	HSC	05/02/14 11:25	050214−2	1381109
7439−92−1	Lead	15100	ug/kg		411	1240	1240	1	P	HSC	05/02/14 11:25	050214−2	1381109
7439−95−4	Magnesium	1370000	ug/kg		10600	37300	37300	1	P	HSC	05/02/14 11:25	050214−2	1381109
7439−96−5	Manganese	571000	ug/kg		249	1240	1240	1	P	HSC	05/02/14 11:25	050214−2	1381109
7439−97−6	Mercury	26.8	ug/kg		5.07	15.1	15.1	1	AV	NOR1	04/25/14 12:19	042514S1−7	1382560
7440−02−0	Nickel	4220	ug/kg		111	445	445	2	MS	PRB	05/01/14 03:21	140430−3	1381872
7440−09−7	Potassium	1510000	ug/kg		7970	31100	31100	1	P	HSC	05/02/14 11:25	050214−2	1381109
7782−49−2	Selenium	1110	ug/kg	U	368	1110	1110	2	MS	PRB	05/01/14 03:21	140430−3	1381872
7440−22−4	Silver	941	ug/kg		124	622	622	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−23−5	Sodium	96200	ug/kg		8710	31100	31100	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−28−0	Thallium	109	ug/kg	J	66.8	445	445	2	MS	PRB	05/01/14 03:21	140430−3	1381872
7440−62−2	Vanadium	14200	ug/kg		124	622	622	1	P	HSC	05/02/14 11:25	050214−2	1381109
7440−66−6	Zinc	46100	ug/kg		498	1240	1240	1	P	HSC	05/02/14 11:25	050214−2	1381109

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381109	1381108	SW846 3050B	0.509	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.569	g	50	mL	04/29/14	MTM1
1382560	1382559	SW846 7471A Prep	0.502	g	30	mL	04/24/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3136 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346169002 **BASIS:** Dry Weight **DATE COLLECTED** 04−APR−14

CLIENT ID: CAWA−14−49279 **LEVEL:** Low **DATE RECEIVED** 08−APR−14

MATRIX: SED **%SOLIDS:** 82

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	5340000	ug/kg		8020	23600	23600	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−36−0	Antimony	1180	ug/kg	U	389	1180	1180	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−38−2	Arsenic	859	ug/kg	J	219	1090	1090	2	MS	PRB	05/01/14 03:50	140430−3	1381872
7440−39−3	Barium	379000	ug/kg		118	590	590	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−41−7	Beryllium	642	ug/kg		21.9	109	109	2	MS	PRB	05/01/14 03:50	140430−3	1381872
7440−43−9	Cadmium	590	ug/kg	U	118	590	590	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−70−2	Calcium	3920000	ug/kg		9440	29500	29500	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−47−3	Chromium	5070	ug/kg		177	590	590	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−48−4	Cobalt	3030	ug/kg		177	590	590	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−50−8	Copper	8100	ug/kg		354	1180	1180	1	P	HSC	05/02/14 11:29	050214−2	1381109
7439−89−6	Iron	9440000	ug/kg		9440	29500	29500	1	P	HSC	05/02/14 11:29	050214−2	1381109
7439−92−1	Lead	12800	ug/kg		389	1180	1180	1	P	HSC	05/02/14 11:29	050214−2	1381109
7439−95−4	Magnesium	1190000	ug/kg		10000	35400	35400	1	P	HSC	05/02/14 11:29	050214−2	1381109
7439−96−5	Manganese	492000	ug/kg		236	1180	1180	1	P	HSC	05/02/14 11:29	050214−2	1381109
7439−97−6	Mercury	20.4	ug/kg		4.58	13.7	13.7	1	AV	NOR1	04/25/14 12:31	042514S1−7	1382560
7440−02−0	Nickel	3300	ug/kg		109	437	437	2	MS	PRB	05/01/14 03:50	140430−3	1381872
7440−09−7	Potassium	1350000	ug/kg		7550	29500	29500	1	P	HSC	05/02/14 11:29	050214−2	1381109
7782−49−2	Selenium	1090	ug/kg	U	361	1090	1090	2	MS	PRB	05/01/14 03:50	140430−3	1381872
7440−22−4	Silver	806	ug/kg		118	590	590	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−23−5	Sodium	87300	ug/kg		8260	29500	29500	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−28−0	Thallium	85.5	ug/kg	J	65.6	437	437	2	MS	PRB	05/01/14 03:50	140430−3	1381872
7440−62−2	Vanadium	13200	ug/kg		118	590	590	1	P	HSC	05/02/14 11:29	050214−2	1381109
7440−66−6	Zinc	41300	ug/kg		472	1180	1180	1	P	HSC	05/02/14 11:29	050214−2	1381109

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381109	1381108	SW846 3050B	0.519	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.56	g	50	mL	04/29/14	MTM1
1382560	1382559	SW846 7471A Prep	0.537	g	30	mL	04/24/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3136 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346169003 **BASIS:** Dry Weight **DATE COLLECTED** 04−APR−14

CLIENT ID: CAWA−14−49273 **LEVEL:** Low **DATE RECEIVED** 08−APR−14

MATRIX: SED **%SOLIDS:** 99.44

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	1040000	ug/kg		6320	18600	18600	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−36−0	Antimony	929	ug/kg	U	307	929	929	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−38−2	Arsenic	239	ug/kg	J	193	967	967	2	MS	PRB	05/01/14 03:57	140430−3	1381872
7440−39−3	Barium	52100	ug/kg		92.9	465	465	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−41−7	Beryllium	175	ug/kg		19.3	96.7	96.7	2	MS	PRB	05/01/14 03:57	140430−3	1381872
7440−43−9	Cadmium	465	ug/kg	U	92.9	465	465	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−70−2	Calcium	284000	ug/kg		7440	23200	23200	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−47−3	Chromium	1280	ug/kg		139	465	465	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−48−4	Cobalt	2500	ug/kg		139	465	465	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−50−8	Copper	919	ug/kg	J	279	929	929	1	P	HSC	05/02/14 11:32	050214−2	1381109
7439−89−6	Iron	3860000	ug/kg		7440	23200	23200	1	P	HSC	05/02/14 11:32	050214−2	1381109
7439−92−1	Lead	4280	ug/kg		307	929	929	1	P	HSC	05/02/14 11:32	050214−2	1381109
7439−95−4	Magnesium	231000	ug/kg		7900	27900	27900	1	P	HSC	05/02/14 11:32	050214−2	1381109
7439−96−5	Manganese	250000	ug/kg		186	929	929	1	P	HSC	05/02/14 11:32	050214−2	1381109
7439−97−6	Mercury	11	ug/kg	U	3.69	11	11	1	AV	NOR1	04/25/14 12:33	042514S1−7	1382560
7440−02−0	Nickel	844	ug/kg		96.7	387	387	2	MS	PRB	05/01/14 03:57	140430−3	1381872
7440−09−7	Potassium	222000	ug/kg		5950	23200	23200	1	P	HSC	05/02/14 11:32	050214−2	1381109
7782−49−2	Selenium	967	ug/kg	U	319	967	967	2	MS	PRB	05/01/14 03:57	140430−3	1381872
7440−22−4	Silver	206	ug/kg	J	92.9	465	465	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−23−5	Sodium	25200	ug/kg		6510	23200	23200	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−28−0	Thallium	387	ug/kg	U	58	387	387	2	MS	PRB	05/01/14 03:57	140430−3	1381872
7440−62−2	Vanadium	3950	ug/kg		92.9	465	465	1	P	HSC	05/02/14 11:32	050214−2	1381109
7440−66−6	Zinc	17000	ug/kg		372	929	929	1	P	HSC	05/02/14 11:32	050214−2	1381109

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381109	1381108	SW846 3050B	0.541	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.52	g	50	mL	04/29/14	MTM1
1382560	1382559	SW846 7471A Prep	0.548	g	30	mL	04/24/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3136 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346169004 **BASIS:** Dry Weight **DATE COLLECTED** 04−APR−14

CLIENT ID: CAWA−14−49274 **LEVEL:** Low **DATE RECEIVED** 08−APR−14

MATRIX: SED **%SOLIDS:** 98.7

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	6110000	ug/kg		6840	20100	20100	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−36−0	Antimony	1010	ug/kg	U	332	1010	1010	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−38−2	Arsenic	1050	ug/kg		185	926	926	2	MS	PRB	05/01/14 04:05	140430−3	1381872
7440−39−3	Barium	528000	ug/kg		101	503	503	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−41−7	Beryllium	765	ug/kg		18.5	92.6	92.6	2	MS	PRB	05/01/14 04:05	140430−3	1381872
7440−43−9	Cadmium	503	ug/kg	U	101	503	503	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−70−2	Calcium	3710000	ug/kg		8040	25100	25100	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−47−3	Chromium	5790	ug/kg		151	503	503	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−48−4	Cobalt	3630	ug/kg		151	503	503	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−50−8	Copper	10000	ug/kg		302	1010	1010	1	P	HSC	05/02/14 11:35	050214−2	1381109
7439−89−6	Iron	9490000	ug/kg		8040	25100	25100	1	P	HSC	05/02/14 11:35	050214−2	1381109
7439−92−1	Lead	15100	ug/kg		332	1010	1010	1	P	HSC	05/02/14 11:35	050214−2	1381109
7439−95−4	Magnesium	1280000	ug/kg		8550	30200	30200	1	P	HSC	05/02/14 11:35	050214−2	1381109
7439−96−5	Manganese	523000	ug/kg		201	1010	1010	1	P	HSC	05/02/14 11:35	050214−2	1381109
7439−97−6	Mercury	23.8	ug/kg		4.01	12	12	1	AV	NOR1	04/25/14 12:34	042514S1−7	1382560
7440−02−0	Nickel	4230	ug/kg		92.6	371	371	2	MS	PRB	05/01/14 04:05	140430−3	1381872
7440−09−7	Potassium	1080000	ug/kg		6440	25100	25100	1	P	HSC	05/02/14 11:35	050214−2	1381109
7782−49−2	Selenium	926	ug/kg	U	306	926	926	2	MS	PRB	05/01/14 04:05	140430−3	1381872
7440−22−4	Silver	1220	ug/kg		101	503	503	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−23−5	Sodium	98400	ug/kg		7040	25100	25100	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−28−0	Thallium	114	ug/kg	J	55.6	371	371	2	MS	PRB	05/01/14 04:05	140430−3	1381872
7440−62−2	Vanadium	14800	ug/kg		101	503	503	1	P	HSC	05/02/14 11:35	050214−2	1381109
7440−66−6	Zinc	39600	ug/kg		402	1010	1010	1	P	HSC	05/02/14 11:35	050214−2	1381109

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381109	1381108	SW846 3050B	0.504	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.547	g	50	mL	04/29/14	MTM1
1382560	1382559	SW846 7471A Prep	0.508	g	30	mL	04/24/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3136 **CONTRACT:** LANL00114 **METHOD TYPE:** EPA

SAMPLE ID: 346169005 **BASIS:** As Received **DATE COLLECTED** 04−APR−14

CLIENT ID: CAWA−14−49281 **LEVEL:** Low **DATE RECEIVED** 08−APR−14

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7439−97−6	Mercury	0.20	ug/L	U	0.067	0.2	0.2	1	AV	NOR1	04/23/14 11:53	042314W3−8	1382060

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3136 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346169005 **BASIS:** As Received **DATE COLLECTED** 04−APR−14

CLIENT ID: CAWA−14−49281 **LEVEL:** Low **DATE RECEIVED** 08−APR−14

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	200	ug/L	U	68	200	200	1	P	HSC	05/01/14 17:02	050114−1	1384013
7440−36−0	Antimony	3	ug/L	U	1	3	3	1	MS	PRB	05/02/14 08:59	140501−6	1384015
7440−38−2	Arsenic	1.99	ug/L	J	1.7	5	5	1	MS	PRB	05/01/14 19:01	140501−5	1384015
7440−39−3	Barium	5	ug/L	U	1	5	5	1	P	HSC	05/01/14 17:02	050114−1	1384013
7440−41−7	Beryllium	5	ug/L	U	1	5	5	1	P	HSC	05/01/14 17:02	050114−1	1384013
7440−43−9	Cadmium	1	ug/L	U	0.11	1	1	1	MS	PRB	05/01/14 19:01	140501−5	1384015
7440−70−2	Calcium	63.9	ug/L	J	50	200	200	1	P	HSC	05/01/14 17:02	050114−1	1384013
7440−47−3	Chromium	10	ug/L	U	2	10	10	1	MS	PRB	05/01/14 19:01	140501−5	1384015
7440−48−4	Cobalt	5	ug/L	U	1	5	5	1	P	HSC	05/01/14 17:02	050114−1	1384013
7440−50−8	Copper	10	ug/L	U	3	10	10	1	P	HSC	05/01/14 17:02	050114−1	1384013
7439−89−6	Iron	36.4	ug/L	J	30	100	100	1	P	HSC	05/01/14 17:02	050114−1	1384013
7439−92−1	Lead	2	ug/L	U	0.5	2	2	1	MS	PRB	05/01/14 19:01	140501−5	1384015
7439−95−4	Magnesium	300	ug/L	U	110	300	300	1	P	HSC	05/01/14 17:02	050114−1	1384013
7439−96−5	Manganese	10	ug/L	U	2	10	10	1	P	HSC	05/01/14 17:02	050114−1	1384013
7440−02−0	Nickel	2	ug/L	U	0.5	2	2	1	MS	PRB	05/01/14 19:01	140501−5	1384015
7440−09−7	Potassium	150	ug/L	U	50	150	150	1	P	HSC	05/01/14 17:02	050114−1	1384013
7782−49−2	Selenium	5	ug/L	U	1.5	5	5	1	MS	PRB	05/01/14 19:01	140501−5	1384015
7440−22−4	Silver	1	ug/L	U	0.2	1	1	1	MS	PRB	05/01/14 19:01	140501−5	1384015
7440−23−5	Sodium	191	ug/L	J	100	300	300	1	P	HSC	05/01/14 17:02	050114−1	1384013
7440−28−0	Thallium	2	ug/L	UN	0.45	2	2	1	MS	PRB	05/01/14 19:01	140501−5	1384015
7440−62−2	Vanadium	5	ug/L	U	1	5	5	1	P	HSC	05/01/14 17:02	050114−1	1384013
7440−66−6	Zinc	10	ug/L	U	3.3	10	10	1	P	HSC	05/01/14 17:02	050114−1	1384013

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1382060	1382059	EPA 245.1/245.2 Prep	20	mL	20	mL	04/22/14	AXS5
1384013	1384011	SW846 3005A	50	mL	50	mL	04/30/14	MTM1
1384015	1384014	SW846 3005A	50	mL	50	mL	04/30/14	MTM1

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**
AV	**EPA 245.1/245.2**

Quality Control Summary

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−3136

Contract: LANL00114

Matrix: SED

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1203070768								
	Aluminum	6710	ug/kg	+/−19700	U	P	6710	19700
	Antimony	325	ug/kg	+/−986	U	P	325	986
	Cadmium	98.6	ug/kg	+/−493	U	P	98.6	493
	Barium	98.6	ug/kg	+/−493	U	P	98.6	493
	Cobalt	148	ug/kg	+/−493	U	P	148	493
	Iron	9360	ug/kg	+/−24700	J	P	7890	24700
	Magnesium	8380	ug/kg	+/−29600	U	P	8380	29600
	Potassium	6310	ug/kg	+/−24700	U	P	6310	24700
	Sodium	6900	ug/kg	+/−24700	U	P	6900	24700
	Zinc	394	ug/kg	+/−986	U	P	394	986
	Vanadium	98.6	ug/kg	+/−493	U	P	98.6	493
	Silver	98.6	ug/kg	+/−493	U	P	98.6	493
	Manganese	197	ug/kg	+/−986	U	P	197	986
	Lead	325	ug/kg	+/−986	U	P	325	986
	Copper	296	ug/kg	+/−986	U	P	296	986
	Chromium	148	ug/kg	+/−493	U	P	148	493
	Calcium	7890	ug/kg	+/−24700	U	P	7890	24700
1203072728								
	Arsenic	194	ug/kg	+/−969	U	MS	194	969
	Nickel	96.9	ug/kg	+/−388	U	MS	96.9	388
	Selenium	320	ug/kg	+/−969	U	MS	320	969
	Thallium	58.1	ug/kg	+/−388	U	MS	58.1	388
	Beryllium	19.4	ug/kg	+/−96.9	U	MS	19.4	96.9
1203073223								
	Mercury	0.067	ug/L	+/−0.2	U	AV	0.067	0.2
1203074621								
	Mercury	4.02	ug/kg	+/−12	U	AV	4.02	12
1203078103								
	Copper	3	ug/L	+/−10	U	P	3	10
	Iron	30	ug/L	+/−100	U	P	30	100
	Calcium	50	ug/L	+/−200	U	P	50	200
	Beryllium	1	ug/L	+/−5	U	P	1	5
	Barium	1	ug/L	+/−5	U	P	1	5
	Aluminum	68	ug/L	+/−200	U	P	68	200
	Magnesium	110	ug/L	+/−300	U	P	110	300
	Manganese	2	ug/L	+/−10	U	P	2	10
	Potassium	54.6	ug/L	+/−150	J	P	50	150

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−3136

Contract: LANL00114

Matrix: SED

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
	Cobalt	1	ug/L	+/−5	U	P	1	5
	Sodium	100	ug/L	+/−300	U	P	100	300
	Vanadium	1	ug/L	+/−5	U	P	1	5
	Zinc	3.3	ug/L	+/−10	U	P	3.3	10
1203078108								
	Antimony	1	ug/L	+/−3	U	MS	1	3
	Arsenic	2.61	ug/L	+/−5	J	MS	1.7	5
	Cadmium	0.11	ug/L	+/−1	U	MS	0.11	1
	Chromium	−5.3	ug/L	+/−10	J	MS	2	10
	Lead	0.5	ug/L	+/−2	U	MS	0.5	2
	Nickel	0.5	ug/L	+/−2	U	MS	0.5	2
	Selenium	1.5	ug/L	+/−5	U	MS	1.5	5
	Silver	0.2	ug/L	+/−1	U	MS	0.2	1
	Thallium	0.45	ug/L	+/−2	U	MS	0.45	2

***Analytical Methods:**

P	**SW846 3005A/6010C**
P	**SW846 3050B/6010C**
MS	**SW846 3005A/6020A**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**
AV	**EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3136 **Client ID** CACH−14−56607S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 90.3

Sample ID: 346280001 **Spike ID:** 1203070771

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/kg		5920000		2290000		473000	767	N/A	P
Antimony	ug/kg	75−125	44500		345	U	47300	94		P
Barium	ug/kg	75−125	88900		23200		47300	139	N	P
Cadmium	ug/kg	75−125	46700		105	U	47300	98.6		P
Calcium	ug/kg	75−125	1980000		606000		473000	290	N	P
Chromium	ug/kg	75−125	50200		3150		47300	99.3		P
Cobalt	ug/kg	75−125	48200		1400		47300	99		P
Copper	ug/kg	75−125	54400		2350		47300	110		P
Iron	ug/kg		9140000		6840000		473000	486	N/A	P
Lead	ug/kg	75−125	55800		7270		47300	102		P
Magnesium	ug/kg	75−125	1630000		497000		473000	238	N	P
Manganese	ug/kg		324000		194000		47300	275	N/A	P
Potassium	ug/kg	75−125	1280000		486000		473000	167	N	P
Silver	ug/kg	75−125	49100		141	J	47300	103		P
Sodium	ug/kg	75−125	579000		49000		473000	112		P
Vanadium	ug/kg	75−125	57500		8690		47300	103		P
Zinc	ug/kg	75−125	81600		32900		47300	103		P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3136 **Client ID** CAMO−14−75317S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 88

Sample ID: 346403001 **Spike ID:** 1203072731

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Arsenic	ug/kg	75−125	5540		1080	J	5420	82.4		MS
Beryllium	ug/kg	75−125	5140		395		5420	87.6		MS
Nickel	ug/kg	75−125	6930		1960		5420	91.7		MS
Selenium	ug/kg	75−125	4650		368	U	5420	82.2		MS
Thallium	ug/kg	75−125	4420		104	J	5420	79.6		MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3136 **Client ID** CAWA−14−49281S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346169005 **Spike ID:** 1203073226

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75−125	1.96		0.067	U	2	98.2		AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3136 **Client ID** CAWA−14−49272S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 79

Sample ID: 346169001 **Spike ID:** 1203074624

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/kg	80−120	160		26.8		147	91.2		AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3136 **Client ID** CAWA−14−49281S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346169005 **Spike ID:** 1203078106

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Beryllium	ug/L	75−125	529		1	U	500	106		P
Calcium	ug/L	75−125	5290		63.9	J	5000	104		P
Cobalt	ug/L	75−125	522		1	U	500	104		P
Copper	ug/L	75−125	512		3	U	500	102		P
Iron	ug/L	75−125	5370		36.4	J	5000	107		P
Magnesium	ug/L	75−125	5460		110	U	5000	108		P
Manganese	ug/L	75−125	518		2	U	500	103		P
Potassium	ug/L	75−125	5250		50	U	5000	104		P
Sodium	ug/L	75−125	5420		191	J	5000	105		P
Vanadium	ug/L	75−125	545		1	U	500	109		P
Zinc	ug/L	75−125	500		3.3	U	500	99.7		P
Aluminum	ug/L	75−125	5200		68	U	5000	103		P
Barium	ug/L	75−125	529		1	U	500	106		P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3136 **Client ID** CAWA−14−49281S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346169005 **Spike ID:** 1203078111

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Antimony	ug/L	75−125	50.3		1	U	50	101		MS
Arsenic	ug/L	75−125	47.8		1.99	J	50	91.6		MS
Cadmium	ug/L	75−125	51.1		0.11	U	50	102		MS
Chromium	ug/L	75−125	45.4		2	U	50	90.8		MS
Lead	ug/L	75−125	48.9		0.5	U	50	97.7		MS
Nickel	ug/L	75−125	52.7		0.5	U	50	105		MS
Selenium	ug/L	75−125	46.8		1.5	U	50	93.6		MS
Silver	ug/L	75−125	51.5		0.2	U	50	103		MS
Thallium	ug/L	75−125	19.5		0.45	U	50	39.1	N	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3136 **Client ID:** CAWA−14−49281PS

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346169005 **Spike ID:** 1203079392

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Thallium	ug/L	80−120	38.9		0.45	U	50	77.8	N	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3136 **Client ID** CACH−14−56607PS

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 90.3

Sample ID: 346280001 **Spike ID:** 1203080104

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Barium	ug/L	80−120	714		222		500	98.4		P
Calcium	ug/L	80−120	10700		5800		5000	98.3		P
Magnesium	ug/L	80−120	9790		4750		5000	101		P
Potassium	ug/L	80−120	9510		4650		5000	97.1		P

***Analytical Methods:**

P **SW846 3050B/6010C**

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3136 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACH−14−56607D

Matrix: SOIL **Level:** Low

Sample ID: 346280001 **Duplicate ID:** 1203070770 **Percent Solids for Dup:** 90.3

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/kg	+/−20%	2290000		2200000		4.31		P
Antimony	ug/kg		345	U	366	U			P
Barium	ug/kg	+/−20%	23200		23400		.912		P
Cadmium	ug/kg		105	U	111	U			P
Calcium	ug/kg	+/−20%	606000		626000		3.28		P
Chromium	ug/kg	+/−20%	3150		3150		.0614		P
Cobalt	ug/kg	+/−554	1400		1670		18		P
Copper	ug/kg	+/−1110	2350		2430		3.28		P
Iron	ug/kg	+/−20%	6840000		8080000		16.7		P
Lead	ug/kg	+/−20%	7270		6050		18.5		P
Magnesium	ug/kg	+/−20%	497000		651000		26.9	*	P
Manganese	ug/kg	+/−20%	194000		210000		8.23		P
Potassium	ug/kg	+/−20%	486000		485000		.221		P
Silver	ug/kg	+/−554	141	J	188	J	28.6		P
Sodium	ug/kg	+/−27700	49000		46500		5.19		P
Vanadium	ug/kg	+/−20%	8690		11100		24.7	*	P
Zinc	ug/kg	+/−20%	32900		32100		2.38		P

***Analytical Methods:**

P SW846 3050B/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3136 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAMO−14−75317D

Matrix: SOIL **Level:** Low

Sample ID: 346403001 **Duplicate ID:** 1203072730 **Percent Solids for Dup:** 88

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Arsenic	ug/kg	+/−1080	1080	J	989	J	8.77		MS
Beryllium	ug/kg	+/−108	395		354		10.9		MS
Nickel	ug/kg	+/−434	1960		1800		8.61		MS
Selenium	ug/kg		368	U	358	U			MS
Thallium	ug/kg	+/−434	104	J	67	J	43.3		MS

***Analytical Methods:**

MS SW846 3050B/6020A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3136 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAWA−14−49281D

Matrix: WATER **Level:** Low

Sample ID: 346169005 **Duplicate ID:** 1203073225 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.067	U	0.067	U			AV

***Analytical Methods:**

AV EPA 245.1/245.2

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3136 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAWA−14−49272D

Matrix: SOIL **Level:** Low

Sample ID: 346169001 **Duplicate ID:** 1203074623 **Percent Solids for Dup:** 79

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/kg	+/−15.2	26.8		30.9		14.1		AV

***Analytical Methods:**

AV SW846 7471A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3136 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAWA−14−49281D

Matrix: WATER **Level:** Low

Sample ID: 346169005 **Duplicate ID:** 1203078105 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/L		68	U	68	U			P
Barium	ug/L		1	U	1.07	J	200		P
Beryllium	ug/L		1	U	1	U			P
Calcium	ug/L	+/−200	63.9	J	59.9	J	6.47		P
Cobalt	ug/L		1	U	1	U			P
Copper	ug/L		3	U	3	U			P
Iron	ug/L		36.4	J	30	U	200		P
Magnesium	ug/L		110	U	110	U			P
Manganese	ug/L		2	U	2	U			P
Potassium	ug/L		50	U	50	U			P
Sodium	ug/L	+/−300	191	J	209	J	8.57		P
Vanadium	ug/L		1	U	1	U			P
Zinc	ug/L		3.3	U	3.3	U			P

***Analytical Methods:**

P SW846 3005A/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3136 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAWA−14−49281D

Matrix: WATER **Level:** Low

Sample ID: 346169005 **Duplicate ID:** 1203078110 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		1	U	1	U			MS
Arsenic	ug/L		1.99	J	1.7	U	200		MS
Cadmium	ug/L		0.11	U	0.11	U			MS
Chromium	ug/L		2	U	2	U			MS
Lead	ug/L		0.5	U	0.5	U			MS
Nickel	ug/L		0.5	U	0.5	U			MS
Selenium	ug/L		1.5	U	1.5	U			MS
Silver	ug/L		0.2	U	0.2	U			MS
Thallium	ug/L		0.45	U	0.45	U			MS

***Analytical Methods:**

MS SW846 3005A/6020A

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3136

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203070769								
	Aluminum	ug/kg	8680000	6510000		75	44.9−154.4	P
	Antimony	ug/kg	166000	183000		110	33.1−167.3	P
	Barium	ug/kg	290000	265000		91.4	82.8−117.6	P
	Cadmium	ug/kg	85000	76900		90.4	84−115.9	P
	Calcium	ug/kg	6120000	5810000		94.9	83.2−117	P
	Chromium	ug/kg	168000	161000		95.6	81.5−117.9	P
	Cobalt	ug/kg	87000	83000		95.3	84.8−114.9	P
	Copper	ug/kg	187000	190000		101	84−116.6	P
	Iron	ug/kg	12500000	12600000		101	50.5−148.8	P
	Lead	ug/kg	120000	112000		93.4	83.3−116.7	P
	Magnesium	ug/kg	2920000	2610000		89.5	75−125.3	P
	Manganese	ug/kg	310000	290000		93.6	82.6−117.4	P
	Potassium	ug/kg	2780000	2260000		81.4	69.1−130.9	P
	Silver	ug/kg	55200	57200		104	66.3−133.7	P
	Sodium	ug/kg	504000	455000		90.4	73.6−126.4	P
	Vanadium	ug/kg	138000	140000		101	79.7−120.3	P
	Zinc	ug/kg	206000	191000		92.8	82−118	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3136

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203072729								
	Thallium	ug/kg	146000	148000		101	81.5−119.2	MS
	Arsenic	ug/kg	137000	135000		98.4	83.2−117.5	MS
	Beryllium	ug/kg	138000	142000		103	84.1−115.9	MS
	Nickel	ug/kg	159000	164000		103	84.3−115.7	MS
	Selenium	ug/kg	43500	43200		99.3	77.9−122.3	MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3136

Contract: LANL00114

Aqueous LCS Source: GEL **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203073224								
	Mercury	ug/L	2	1.97		98.6	85−115	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3136

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203074622								
	Mercury	ug/kg	7690	6600		85.9	71.4−129	AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3136

Contract: LANL00114

Aqueous LCS Source: OS2I **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203078104								
	Aluminum	ug/L	5000	5140		103	80−120	P
	Barium	ug/L	500	525		105	80−120	P
	Beryllium	ug/L	500	526		105	80−120	P
	Calcium	ug/L	5000	5330		107	80−120	P
	Cobalt	ug/L	500	519		104	80−120	P
	Copper	ug/L	500	506		101	80−120	P
	Iron	ug/L	5000	5400		108	80−120	P
	Magnesium	ug/L	5000	5450		109	80−120	P
	Manganese	ug/L	500	510		102	80−120	P
	Potassium	ug/L	5000	5180		104	80−120	P
	Sodium	ug/L	5000	5160		103	80−120	P
	Vanadium	ug/L	500	541		108	80−120	P
	Zinc	ug/L	500	499		99.8	80−120	P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3136

Contract: LANL00114

Aqueous LCS Source: O2Si **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203078109								
	Antimony	ug/L	50	51.1		102	80−120	MS
	Arsenic	ug/L	50	47.4		94.7	80−120	MS
	Cadmium	ug/L	50	50.5		101	80−120	MS
	Chromium	ug/L	50	44.2		88.3	80−120	MS
	Lead	ug/L	50	49.3		98.6	80−120	MS
	Nickel	ug/L	50	51.9		104	80−120	MS
	Selenium	ug/L	50	46.7		93.5	80−120	MS
	Silver	ug/L	50	51.1		102	80−120	MS
	Thallium	ug/L	50	44.1		88.3	80−120	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3136 **Client ID** CACH−14−56607L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 346280001 **Serial Dilution ID:** 1203070772

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	21900		21900		.344		10	P
Antimony	3.3	U	16.5	U				P
Barium	222		213		4.07		10	P
Cadmium	1	U	5	U				P
Calcium	5800		5860		1.08		10	P
Chromium	30.1		32.1		6.48			P
Cobalt	13.4		14.9	J	11.2			P
Copper	22.5		20.2	J	10.4			P
Iron	65400		66900		2.16		10	P
Lead	69.6		69.3		.463			P
Magnesium	4750		4900		3.02		10	P
Manganese	1850		1900		2.24		10	P
Potassium	4650		4650		.063		10	P
Silver	1.35	J	5	U	100			P
Sodium	469		421	J	10.1			P
Vanadium	83.2		84.6		1.67		10	P
Zinc	315		299		4.95		10	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3136 **Client ID** CAMO−14−75317L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 346403001 **Serial Dilution ID:** 1203072732

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Arsenic	4.83	J	5.19	J	7.28			MS
Beryllium	1.77		1.54	J	13.2			MS
Nickel	8.78		8.64	J	1.58			MS
Selenium	1.65	U	8.25	U				MS
Thallium	.466	J	1.5	U	100			MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3136 **Client ID** CAWA−14−49281L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 346169005 **Serial Dilution ID:** 1203073227

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3136 **Client ID** CAWA−14−49272L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 346169001 **Serial Dilution ID:** 1203074625

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.354		.335	U	100			AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3136 **Client ID** CAWA−14−49281L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 346169005 **Serial Dilution ID:** 1203078107

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	68	U	340	U				P
Barium	1	U	5	U				P
Beryllium	1	U	5	U				P
Calcium	63.9	J	250	U	100			P
Cobalt	1	U	5	U				P
Copper	3	U	15	U				P
Iron	36.4	J	150	U	100			P
Magnesium	110	U	550	U				P
Manganese	2	U	10	U				P
Potassium	50	U	250	U				P
Sodium	191	J	500	U	100			P
Vanadium	1	U	5	U				P
Zinc	3.3	U	16.5	U				P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3136 **Client ID** CAWA−14−49281L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 346169005 **Serial Dilution ID:** 1203078112

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	1	U	5	U				MS
Arsenic	1.99	J	8.5	U	100			MS
Cadmium	.11	U	.55	U				MS
Chromium	2	U	10	U				MS
Lead	.5	U	2.5	U				MS
Nickel	.5	U	2.5	U				MS
Selenium	1.5	U	7.5	U				MS
Silver	.2	U	1	U				MS
Thallium	.45	U	10.2					MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
02-MAY-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP/MS	SW846 3005A/6020A	Liquid	LANL
Batch ID:	**Sample Numbers:**		
1384015	See Below		

Potentially affected work order(s)(SDG): 345895(2014-3123-1),346169(2014-3136)

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203078111MS,1203079392PS	The matrix spike recovery failed outside of the control limits for Thallium. The post spike failed outside the required control limits for Thallium. This verifies the presence of a matrix interference for Thallium. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.

Originator's Name:

Paul Boyd 02-MAY-14

Data Validator/Group Leader:

Samantha Jacobs 02-MAY-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
02-MAY-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW846 3050B/6010C	Solid	LANL
Batch ID:	**Sample Numbers:**		
1381109	See Below		

Potentially affected work order(s)(SDG): 346169(2014-3136),346280(2014-3152),346986(201-3232)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for DUP

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203070771MS 2. Failed RPD for DUP: QC 1203070770DUP	1. The matrix spike recovery failed outside the control limits for barium, calcium, magnesium and potassium. The post spike passed the required control limits for all analytes. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. 2. The sample and sample duplicate % RPD failed outside the control limits for magnesium and vanadium due to possible sample non-homogeneity and/or matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. Sample #346280001 is a dark brown granular textured solid with small rocks.

Originator's Name:

Helen Camello 02-MAY-14

Data Validator/Group Leader:

Jerry Wigfall 05-MAY-14

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3140

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A
CAWA-14-49272	Apr 4 2014	11:20	SED	1
CAWA-14-49279	Apr 4 2014	11:20	SED	1
CAWA-14-49273	Apr 4 2014	11:37	SED	1
CAWA-14-49274	Apr 4 2014	11:50	SED	1

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
	Melissa Moody	4/7/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49272 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1120	MEDIA:		SED
PRS ID:	Water-Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	~~GT~~ SPW 3/17/14	WA-61494	FIELD PREP:	NA	↓
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	↓
TOP DEPTH:		0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:		4	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine sediment

LOCATION COMMENTS: Downstream of WA4 X-section 2

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Pkg Rad
α : >1
β/γ: 1764

Gross Alpha 23 dpm

Gross Beta/Gamma 1705 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Travis Naibert

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Naibert (Signature)	4/4/14 1420	(Printed Name) Sher Norwood (Signature) Sher Norwood	4/4/14 1420
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49273 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1137	MEDIA:		SED
PRS ID: Water-Canyon		ok sm 3/27/14	SAMPLE TECH CODE:	SS	ok
LOCATION ID:		WA-614975	FIELD PREP:	NA	
LOCATION TYPE: BH		OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0 cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		9 cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse sediment

LOCATION COMMENTS: Downstream of WA4 X-section 2

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
γ : 31
β/γ : 1764

Gross Alpha 23 dpm

Gross Beta/Gamma 1663 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) Travis Naibert

RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time
Travis Naibert	4/4/14 1420	S. Sherwood	4/4/14 1420
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY (Printed Name) (Signature)**	**Date/Time**

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49274 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1150	MEDIA:		Sed
PRS ID:	Water-Canyon	ok 3/7/14	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	83 3/7/14	WA-614946	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		2cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine sediment

LOCATION COMMENTS: WA-4

FIELD PARAMETERS: N/A

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad
x: 31
y/z: 1764

Gross Alpha TJN 4/4/13 23 dpm

Gross Beta/Gamma 1726 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) K. Reid

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Naibert (Signature)	4/4/14 1420	(Printed Name) S. Sherwood (Signature) S. Sherwood	4/4/14 1420
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time**

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49279 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/04/2014	FIELD MATRIX:	S	SED
TIME COLLECTED (HH:MM):		1120	MEDIA:		SED
PRS ID:		TW 4/4/14 ok water canyon	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	Specified At Time Of Sampling	WA-61494	FIELD PREP:		
LOCATION TYPE:		BH	FIELD QC TYPE:	FD	
TOP DEPTH:		0	SAMPLE USAGE:	QC	
BOTTOM DEPTH:		4	EXCAVATED:		YES / NO NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	Y	
	8082+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	
	~~NMED Explosives list~~	~~250 ML AMBER GLASS~~	~~1~~	~~ICE~~		~~FEC~~
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine sediments Field Dupe of CAWA-14-49272

LOCATION COMMENTS: WA-4

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

bkgrd α 31 β/γ 1764

Gross **Alpha** 23 **dpm**

Gross **Beta/Gamma** 1705 **dpm**

PID Ambient Reading = NA **ppm**

COLLECTED BY (PRINT) Travis Naibert

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Naibert (Signature)	4/4/14 1420	(Printed Name) S. Sherwood (Signature)	4/4/14 1420
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3140

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
5963	EPA:1668A	3	1			

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
5963	EPA:1668A	25702	25700	3	1				1	1	1			1	1						

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:1668A	PCBCONGENERS	CAWA-14-49272	12010218	MS	0	29	26	0
EPA:1668A	PCBCONGENERS	CAWA-14-49272	12010219	MSD	0	29	26	0
EPA:1668A	PCBCONGENERS	CAWA-14-49272	5963001	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWA-14-49273	5963003	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWA-14-49274	5963004	REG	177	29	0	0
EPA:1668A	PCBCONGENERS	CAWA-14-49279	5963002	FD	177	29	0	0
EPA:1668A	PCBCONGENERS	LCS	12010216	LCS	0	29	26	0
EPA:1668A	PCBCONGENERS	LCSD	12010217	LCSD	0	29	26	0
EPA:1668A	PCBCONGENERS	MB	12010215	MB	177	29	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

DATA VALIDATION REPORT

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

Field Sample ID	MS Lab Sample ID	MSD Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS Spike Recovery	MSD Spike Recovery	MS Upper Limit	MS Lower Limit	MS Reject Limit	RPD	RPD Limit
CAWA-14-49272	12010218	12010219	EPA:1668A	PCB-37	25700	04-26-2014	SED	89	119	150	50	10	25.3	25

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

DATA VALIDATION REPORT

13. Display Flagged Data.

None.

Reason Code	Description
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAWA-14-49272	WA-61494	REG	EPA:1668A	0	177
CAWA-14-49273	WA-61495	REG	EPA:1668A	0	177
CAWA-14-49274	WA-61496	REG	EPA:1668A	0	177
CAWA-14-49279	WA-61494	FD	EPA:1668A	0	177

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

May 02, 2014

Mr. Keith Greene
Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: 2012 WQH with LOCUS EDD
Work Order: 5963
SDG: 2014-3140

Dear Mr. Greene:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on April 08, 2014. This original data report has been prepared and reviewed in accordance with CFAôs standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynthia Larkins
Project Manager

Chain of Custody: 2014-3140
Enclosures

problem solved

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Los Alamos National Laboratory
2012 WQH with LOCUS EDD
Workorder #: 5963
SDG # : 2014-3140

Case Narrative

Receipt Narrative
for
Los Alamos National Laboratory
SDG: 2014-3140
Work Order: 5963

Laboratory Identification
Cape Fear Analytical, LLC
3306 Kitty Hawk Road, Suite 120
Wilmington, North Carolina 28405
(910) 795-0421

Summary
Sample receipt: The samples arrived at Cape Fear Analytical LLC (CFA), Wilmington, North Carolina on April 08, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. Shipping container temperatures were checked, documented, and within specifications. All sample containers arrived without any visible signs of tampering or breakage. Appropriate sample containers were received. Sample containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Sufficient sample was received for analysis. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
5963001	CAWA-14-49272
5963002	CAWA-14-49279
5963003	CAWA-14-49273
5963004	CAWA-14-49274

Case Narrative
Sample analyses were conducted using methodology as outlined in Cape Fear Analyticalôs Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package
The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist and data from the following fractions: PCB Congeners.

Sincerely,

Cynde Larkins

Cynthia Larkins
Project Manager

List of current CFA Certifications as of 15 April 2014

State	Certification
California (NELAC)	09270CA
New Jersey (NELAC)	NC013
North Carolina	NC01894
South Carolina	99063001
Utah (Primary NELAC)	CFAL

Chain of Custody and Supporting Documentation

CFA WO # 5963

Cape Fear Analytical
3306 Kitty Hawk Road, Suite 120
Wilmington NC 28405

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3140

Page 1 of 1

Client Contact:

Lab Agreement # : 63641-001-10

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Field Sample ID	Sample Date	Sample Time	Sample Matrix	1668A	Special Instructions:
CAWA-14-49272	Apr 4 2014	11:20	SED	1	temp. = 2.3°
CAWA-14-49279	Apr 4 2014	11:20	SED	1	↓
CAWA-14-49273	Apr 4 2014	11:37	SED	1	
CAWA-14-49274	Apr 4 2014	11:50	SED	1	temp. = 3.8°C

Special Instructions:

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
[signature]	[signature]	4/7/14 3:00	Cynde Larkins	CYNDE LARKINS	08APR14 1015
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

temp. = 2.3° + 3.8°C

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: LANL	Work Order: 5963
Received By: Cynde Larkins	Date/Time Received: 08APR14 1015

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	✓		
Samples < 2x background?	✓		

* Notify RSO of any responses in this column immediately.

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags (blue ice) dry ice none other (describe) 2.3° & 3.8°C
4	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
5	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
6	Samples received within holding time?	✓			Sample IDs, tests affected:
7	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
8	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
9	Number of containers received match number indicated on COC?	✓			Sample IDs, containers affected:
10	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CJ Date: 08 APR 14

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 07APR14
ACTWGT: 53.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO CHRIS CORNWELL
CAPE FEAR ANALYTICAL
3306 KITTY HAWK ROAD, SUITE 120

WILMINGTON NC 28405
(910) 796-0421
REF: MR1A01EC2AFO

FedEx Express

TUE - 08 APR 1 RT 3!
PRIORITY OVERN FZ 3!

TRK# 0201 5908 1776 8873

XH ILMA

28405
NC-US GSO

temp. = 2.3°C
WO#5963

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
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CAPE FEAR ANALYTICAL
3306 KITTY HAWK ROAD, SUITE 120

WILMINGTON NC 28405
(910) 796-0421
REF: XU4001020100

FedEx Express

TRK# 0201 5908 1776 8884

TUE - PRIO RT 357 FZ 359 1

8884
04.08

XH ILMA

NC-US GSO

temp. = 3.8°C

WO # 5963

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Los Alamos National Laboratory (LANL)
SDG 2014-3140
Work Order 5963

Method/Analysis Information

Product:	**Method 1668A PCB Congeners in Solids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3540C
Analytical Batch Number:	25702
Clean Up Batch Number:	25701
Extraction Batch Number:	25700

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
5963001	CAWA-14-49272
5963002	CAWA-14-49279
5963003	CAWA-14-49273
5963004	CAWA-14-49274
12010215	Method Blank (MB)
12010216	Laboratory Control Sample (LCS)
12010217	Laboratory Control Sample Duplicate (LCSD)
12010218	5963001(CAWA-14-49272) Matrix Spike (MS)
12010219	5963001(CAWA-14-49272) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2003 NELAC Standard. Any known exceptions are discussed in the narrative.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 5963001 (CAWA-14-49272) was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement
The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
One RPD was outside the acceptance limits. 12010218 (CAWA-14-49272) and 12010219 (CAWA-14-49272).

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of

expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
The following NCR was generated for this SDG: 644463 12010219 (CAWA-14-49272).

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	High-Resolution GC/MS System	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

LANL001 Los Alamos National Laboratory

Client SDG: 2014-3140 CFA Work Order: 5963

The Qualifiers in this report are defined as follows:

*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
B	The target analyte was detected in the associated blank.
C	Congener has coeluters. When Cxxx, refer to congener number xxx for data
J	Value is estimated
U	Analyte was analyzed for , but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: Heather Patterson **Name: Heather Patterson**

Date: 02 MAY 2014 **Title: Data Validator**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963001**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 13:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.89 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.951	.951	pg/g	0.951	4.76
2051-61-8	PCB-2	U	1.34	.951	pg/g	0.951	1.90
2051-62-9	PCB-3	J	2.00	1.81	pg/g	0.951	1.90
13029-08-8	PCB-4	U	.951	.951	pg/g	0.951	3.81
16605-91-7	PCB-5	U	.951	.951	pg/g	0.951	3.81
25569-80-6	PCB-6	U	.951	.951	pg/g	0.951	1.90
33284-50-3	PCB-7	U	.951	.951	pg/g	0.951	3.81
34883-43-7	PCB-8	J	1.75	1.24	pg/g	0.951	19.0
34883-39-1	PCB-9	U	.951	.951	pg/g	0.951	1.90
33146-45-1	PCB-10	U	.951	.951	pg/g	0.951	3.81
2050-67-1	PCB-11	BJ	2.99	2.44	pg/g	1.90	47.6
PCB-12/13	PCB-13/12	CJ	3.52	2.85	pg/g	0.951	7.61
34883-41-5	PCB-14	U	.951	.951	pg/g	0.951	3.81
2050-68-2	PCB-15	J	3.46	2.8	pg/g	0.951	19.0
38444-78-9	PCB-16	J	2.20	1.89	pg/g	0.951	3.81
37680-66-3	PCB-17	J	2.81	2.47	pg/g	0.634	3.81
PCB-18/30	PCB-18/30	C	6.55	6.34	pg/g	1.27	3.81
38444-73-4	PCB-19	U	.634	.634	pg/g	0.634	1.90
PCB-20/28	PCB-20/28	CJ	14.6	14.4	pg/g	1.27	19.0
PCB-21/33	PCB-21/33	CJ	5.06	4.89	pg/g	1.27	7.61
38444-85-8	PCB-22		4.99	4.78	pg/g	0.634	3.81
55720-44-0	PCB-23	U	.634	.634	pg/g	0.634	1.90
55702-45-9	PCB-24	U	.634	.634	pg/g	0.634	1.90
55712-37-3	PCB-25	U	.634	.634	pg/g	0.634	1.90
PCB-26/29	PCB-26/29	CJ	1.56	1.4	pg/g	1.27	3.81
38444-76-7	PCB-27	U	.634	.634	pg/g	0.634	1.90
16606-02-3	PCB-31		14.3	14.1	pg/g	0.634	9.51
38444-77-8	PCB-32	J	1.90	1.75	pg/g	0.634	1.90
37680-68-5	PCB-34	U	.634	.634	pg/g	0.634	1.90
37680-69-6	PCB-35	U	.634	.634	pg/g	0.634	3.81
38444-87-0	PCB-36	U	.634	.634	pg/g	0.634	3.81
38444-90-5	PCB-37	J	6.83	6.52	pg/g	0.634	19.0

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963001**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 13:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.89 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38		11.3	11	pg/g	0.634	1.90
38444-88-1	PCB-39	U	.634	.634	pg/g	0.634	3.81
PCB-40/71	PCB-40/71	C	13.0	12.6	pg/g	1.27	3.81
52663-59-9	PCB-41	J	2.25	1.87	pg/g	1.27	1.90
36559-22-5	PCB-42		10.3	9.91	pg/g	0.951	1.90
70362-46-8	PCB-43	U	1.27	1.27	pg/g	1.27	3.81
PCB-44/47/65	PCB-44/65/47	C	41.8	41.4	pg/g	3.18	5.71
PCB-45/51	PCB-45/51	CJ	3.91	3.51	pg/g	1.27	3.81
41464-47-5	PCB-46	J	1.11	.846	pg/g	0.634	1.90
70362-47-9	PCB-48		5.01	4.53	pg/g	0.634	1.90
PCB-49/69	PCB-69/49	C	27.2	26.9	pg/g	1.27	3.81
PCB-50/53	PCB-50/53	CJ	4.02	3.78	pg/g	1.27	3.81
35693-99-3	PCB-52		51.3	50.9	pg/g	1.27	1.90
15968-05-5	PCB-54	U	.634	.634	pg/g	0.634	1.90
74338-24-2	PCB-55	U	.951	.951	pg/g	0.951	1.90
41464-43-1	PCB-56		23.7	23.2	pg/g	0.634	3.81
70424-67-8	PCB-57	U	.951	.951	pg/g	0.951	1.90
41464-49-7	PCB-58	U	.951	.951	pg/g	0.951	1.90
PCB-59/62/75	PCB-59/62/75	CU	2.04	1.9	pg/g	1.90	5.71
33025-41-1	PCB-60		10.0	9.56	pg/g	0.634	3.81
PCB-61-76	PCB-61/76/70/74	C	79.2	79	pg/g	2.53	7.61
74472-34-7	PCB-63	J	0.995	.816	pg/g	0.634	4.76
52663-58-8	PCB-64		14.8	14.4	pg/g	0.951	1.90
32598-10-0	PCB-66		42.8	42.6	pg/g	0.951	4.76
73575-53-8	PCB-67	U	.951	.951	pg/g	0.951	1.90
73575-52-7	PCB-68	U	.634	.634	pg/g	0.634	1.90
41464-42-0	PCB-72	U	.634	.634	pg/g	0.634	3.81
74338-23-1	PCB-73	U	1.04	.951	pg/g	0.951	1.90
32598-13-3	PCB-77		8.28	8.05	pg/g	0.634	1.90
70362-49-1	PCB-78	U	.634	.634	pg/g	0.634	1.90
41464-48-6	PCB-79	J	1.61	1.44	pg/g	0.634	3.81
33284-52-5	PCB-80	U	.634	.634	pg/g	0.634	3.81

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963001**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 13:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.89 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.634	.634	pg/g	0.634	1.90
52663-62-4	PCB-82		17.3	16.9	pg/g	0.951	4.76
60145-20-2	PCB-83		9.04	8.69	pg/g	0.951	1.90
52663-60-2	PCB-84		37.8	37.4	pg/g	0.951	1.90
PCB-85-117	PCB-117/116/85	C	29.8	29.5	pg/g	1.90	5.71
PCB-86-125	PCB-86/87/97/109/119/125	C	113	113	pg/g	3.81	11.4
PCB-88/91	PCB-88/91	C	22.1	21.8	pg/g	1.27	3.81
73575-57-2	PCB-89	J	1.20	.864	pg/g	0.634	1.90
PCB-90-113	PCB-113/90/101	C	259	259	pg/g	1.90	5.71
52663-61-3	PCB-92		42.3	42	pg/g	0.951	1.90
PCB-93/100	PCB-93/100	CU	1.9	1.9	pg/g	1.90	3.81
73575-55-0	PCB-94	U	.634	.634	pg/g	0.634	1.90
38379-99-6	PCB-95		198	197	pg/g	1.27	3.81
73575-54-9	PCB-96	U	0.641	.634	pg/g	0.634	1.90
PCB-98/102	PCB-102/98	CJ	3.47	3.13	pg/g	1.27	3.81
38380-01-7	PCB-99		76.5	75.9	pg/g	1.27	1.90
60145-21-3	PCB-103	J	0.963	.678	pg/g	0.634	4.76
56558-16-8	PCB-104	U	.634	.634	pg/g	0.634	1.90
32598-14-4	PCB-105		56.6	56	pg/g	0.951	1.90
70424-69-0	PCB-106	U	.951	.951	pg/g	0.951	1.90
70424-68-9	PCB-107		9.08	8.8	pg/g	0.634	3.81
PCB-108/124	PCB-108/124	C	7.02	6.69	pg/g	1.27	3.81
PCB-110/115	PCB-110/115	C	288	286	pg/g	2.53	3.81
39635-32-0	PCB-111	U	.634	.634	pg/g	0.634	1.90
74472-36-9	PCB-112	U	1.27	1.27	pg/g	1.27	1.90
74472-37-0	PCB-114		2.27	1.92	pg/g	0.634	1.90
31508-00-6	PCB-118		140	138	pg/g	1.27	3.81
68194-12-7	PCB-120	U	.634	.634	pg/g	0.634	1.90
56558-18-0	PCB-121	U	.634	.634	pg/g	0.634	1.90
76842-07-4	PCB-122	U	1.85	.634	pg/g	0.634	6.56
65510-44-3	PCB-123		2.89	2.58	pg/g	0.634	1.90
57465-28-8	PCB-126		2.41	2.03	pg/g	0.634	1.90

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963001**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 13:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.89 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.634	.634	pg/g	0.634	1.90
PCB-128/166	PCB-128/166	C	63.7	63.4	pg/g	1.27	3.81
PCB-129-163	PCB-138/163/129	C	747	747	pg/g	2.53	5.71
52663-66-8	PCB-130		30.1	29.8	pg/g	0.951	1.90
61798-70-7	PCB-131		4.76	4.37	pg/g	0.634	1.90
38380-05-1	PCB-132		217	215	pg/g	0.951	1.90
35694-04-3	PCB-133		8.40	8.06	pg/g	0.634	1.90
52704-70-8	PCB-134		26.1	25.7	pg/g	1.27	1.90
PCB-135/151	PCB-151/135	C	304	304	pg/g	1.27	3.81
38411-22-2	PCB-136		75.4	75.2	pg/g	0.634	1.90
35694-06-5	PCB-137		13.1	12.6	pg/g	1.27	1.90
PCB-139/140	PCB-139/140	C	4.41	4.04	pg/g	1.27	3.81
52712-04-6	PCB-141		168	168	pg/g	1.27	3.81
41411-61-4	PCB-142	U	.634	.634	pg/g	0.634	1.90
68194-15-0	PCB-143	U	1.27	1.27	pg/g	1.27	1.90
68194-14-9	PCB-144		29.5	29.2	pg/g	0.634	1.90
74472-40-5	PCB-145	U	.634	.634	pg/g	0.634	1.90
51908-16-8	PCB-146		101	100	pg/g	0.951	1.90
PCB-147/149	PCB-147/149	C	635	634	pg/g	1.90	7.61
74472-41-6	PCB-148	U	.634	.634	pg/g	0.634	1.90
68194-08-1	PCB-150	U	.951	.951	pg/g	0.951	1.90
68194-09-2	PCB-152	U	.634	.634	pg/g	0.634	1.90
PCB-153/168	PCB-153/168	C	732	731	pg/g	1.90	7.61
60145-22-4	PCB-154	J	2.09	1.82	pg/g	0.634	1.90
33979-03-2	PCB-155	U	0.780	.634	pg/g	0.634	1.90
PCB-156/157	PCB-156/157	C	60.6	60.3	pg/g	1.27	3.81
74472-42-7	PCB-158		51.4	51.1	pg/g	0.634	1.90
39635-35-3	PCB-159	U	.634	.634	pg/g	0.634	1.90
41411-62-5	PCB-160	U	.634	.634	pg/g	0.634	1.90
74472-43-8	PCB-161	U	.951	.951	pg/g	0.951	1.90
39635-34-2	PCB-162	U	.951	.951	pg/g	0.951	1.90
74472-45-0	PCB-164		54.7	54.4	pg/g	0.634	1.90

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963001**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 13:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.89 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.634	.634	pg/g	0.634	1.90
52663-72-6	PCB-167		29.9	29.7	pg/g	0.634	1.90
32774-16-6	PCB-169	U	.951	.951	pg/g	0.951	1.90
35065-30-6	PCB-170		351	350	pg/g	0.634	1.90
PCB-171/173	PCB-173/171	C	74.7	74.4	pg/g	1.27	3.81
52663-74-8	PCB-172		55.3	55	pg/g	0.951	1.90
38411-25-5	PCB-174		309	309	pg/g	1.27	1.90
40186-70-7	PCB-175		7.80	7.55	pg/g	0.951	1.90
52663-65-7	PCB-176		27.3	27.1	pg/g	0.634	1.90
52663-70-4	PCB-177		177	177	pg/g	0.951	1.90
52663-67-9	PCB-178		56.5	56.3	pg/g	1.27	1.90
52663-64-6	PCB-179		116	115	pg/g	0.634	1.90
PCB-180/193	PCB-193/180	C	793	793	pg/g	1.90	3.81
74472-47-2	PCB-181	U	1.06	.951	pg/g	0.951	1.90
60145-23-5	PCB-182	U	.634	.634	pg/g	0.634	1.90
PCB-183/185	PCB-183/185	C	162	162	pg/g	1.27	3.81
74472-48-3	PCB-184	U	.634	.634	pg/g	0.634	1.90
74472-49-4	PCB-186	U	.634	.634	pg/g	0.634	1.90
52663-68-0	PCB-187		371	370	pg/g	0.951	1.90
74487-85-7	PCB-188	U	.634	.634	pg/g	0.634	1.90
39635-31-9	PCB-189		12.2	12	pg/g	0.634	1.90
41411-64-7	PCB-190		77.0	76.8	pg/g	0.951	1.90
74472-50-7	PCB-191		10.3	10.1	pg/g	0.634	1.90
74472-51-8	PCB-192	U	.634	.634	pg/g	0.634	1.90
35694-08-7	PCB-194		183	183	pg/g	0.634	1.90
52663-78-2	PCB-195		75.3	75.1	pg/g	0.951	1.90
42740-50-1	PCB-196		70.7	70.4	pg/g	0.634	1.90
PCB-197/200	PCB-197/200	C	20.4	20.1	pg/g	1.27	3.81
PCB-198/199	PCB-198/199	C	172	172	pg/g	1.27	3.81
40186-71-8	PCB-201		11.9	11.7	pg/g	0.634	1.90
2136-99-4	PCB-202		31.1	30.8	pg/g	0.951	1.90
52663-76-0	PCB-203		102	102	pg/g	1.27	1.90

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963001**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 13:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.89 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.951	.951	pg/g	0.951	1.90
74472-53-0	PCB-205		8.44	8.2	pg/g	0.634	1.90
40186-72-9	PCB-206		36.5	36.1	pg/g	0.951	1.90
52663-79-3	PCB-207		3.85	3.56	pg/g	0.634	1.90
52663-77-1	PCB-208		8.00	7.68	pg/g	0.634	1.90
2051-24-3	PCB-209		15.6	15.2	pg/g	0.634	1.90
27323-18-8	Total Mono PCBs		3.33	1.81	pg/g		
25512-42-9	Total Di PCBs		8.73	6.89	pg/g		
25323-68-6	Total Tri PCBs		72.1	69.6	pg/g		
26914-33-0	Total Tetra PCBs		344	335	pg/g		
25429-29-2	Total Penta PCBs		1320	1310	pg/g		
26601-64-9	Total Hexa PCBs		3360	3350	pg/g		
28655-71-2	Total Hepta PCBs		2600	2600	pg/g		
55722-26-4	Total Octa PCBs		675	673	pg/g		
53742-07-7	Total Nona PCBs		48.3	47.3	pg/g		
DECACB(Tot)	Total Deca PCB		15.6	15.2	pg/g		
1336-36-3	Total PCB Congeners		8450	8400	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		94.3	190	pg/g	49.5	(15%-150%)
13C-3-MoCB		108	190	pg/g	57.0	(15%-150%)
13C-4-DiCB		116	190	pg/g	61.1	(25%-150%)
13C-15-DiCB		138	190	pg/g	72.6	(25%-150%)
13C-19-TrCB		124	190	pg/g	65.2	(25%-150%)
13C-37-TrCB		142	190	pg/g	74.4	(25%-150%)
13C-54-TeCB		107	190	pg/g	56.1	(25%-150%)
13C-77-TeCB		194	190	pg/g	102	(25%-150%)
13C-81-TeCB		198	190	pg/g	104	(25%-150%)
13C-104-PeCB		119	190	pg/g	62.5	(25%-150%)
13C-105-PeCB		159	190	pg/g	83.4	(25%-150%)
13C-114-PeCB		152	190	pg/g	80.1	(25%-150%)
13C-118-PeCB		158	190	pg/g	83.0	(25%-150%)
13C-123-PeCB		166	190	pg/g	87.1	(25%-150%)
13C-126-PeCB		173	190	pg/g	90.7	(25%-150%)
13C-155-HxCB		118	190	pg/g	62.1	(25%-150%)
13C-156-HxCB	C	328	381	pg/g	86.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		157	190	pg/g	82.6	(25%-150%)
13C-169-HxCB		200	190	pg/g	105	(25%-150%)
13C-188-HpCB		93.6	190	pg/g	49.2	(25%-150%)
13C-189-HpCB		148	190	pg/g	77.7	(25%-150%)
13C-202-OcCB		104	190	pg/g	54.8	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963001**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 13:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.89 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		161	190	pg/g	84.4	(25%-150%)
13C-206-NoCB		146	190	pg/g	76.6	(25%-150%)
13C-208-NoCB		147	190	pg/g	77.4	(25%-150%)
13C-209-DeCB		144	190	pg/g	75.8	(25%-150%)
13C-28-TrCB		143	190	pg/g	75.4	(30%-135%)
13C-111-PeCB		160	190	pg/g	84.1	(30%-135%)
13C-178-HpCB		144	190	pg/g	75.7	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963002**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**19.6**
Client ID:	**CAWA-14-49279**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	1.04	.994	pg/g	0.994	4.97
2051-61-8	PCB-2	U	1.66	.994	pg/g	0.994	1.99
2051-62-9	PCB-3	J	1.97	1.79	pg/g	0.994	1.99
13029-08-8	PCB-4	U	.994	.994	pg/g	0.994	3.97
16605-91-7	PCB-5	U	.994	.994	pg/g	0.994	3.97
25569-80-6	PCB-6	U	.994	.994	pg/g	0.994	1.99
33284-50-3	PCB-7	U	.994	.994	pg/g	0.994	3.97
34883-43-7	PCB-8	J	2.03	1.52	pg/g	0.994	19.9
34883-39-1	PCB-9	U	.994	.994	pg/g	0.994	1.99
33146-45-1	PCB-10	U	.994	.994	pg/g	0.994	3.97
2050-67-1	PCB-11	BJ	4.60	4.05	pg/g	1.99	49.7
PCB-12/13	PCB-13/12	CJ	6.22	5.56	pg/g	0.994	7.95
34883-41-5	PCB-14	U	.994	.994	pg/g	0.994	3.97
2050-68-2	PCB-15	J	4.43	3.77	pg/g	0.994	19.9
38444-78-9	PCB-16	J	1.87	1.56	pg/g	0.994	3.97
37680-66-3	PCB-17	J	2.44	2.1	pg/g	0.662	3.97
PCB-18/30	PCB-18/30	C	4.61	4.41	pg/g	1.33	3.97
38444-73-4	PCB-19	U	.662	.662	pg/g	0.662	1.99
PCB-20/28	PCB-20/28	CJ	14.4	14.2	pg/g	1.33	19.9
PCB-21/33	PCB-21/33	CJ	4.93	4.77	pg/g	1.33	7.95
38444-85-8	PCB-22		4.79	4.58	pg/g	0.662	3.97
55720-44-0	PCB-23	U	.662	.662	pg/g	0.662	1.99
55702-45-9	PCB-24	U	.662	.662	pg/g	0.662	1.99
55712-37-3	PCB-25	J	0.863	.691	pg/g	0.662	1.99
PCB-26/29	PCB-26/29	CJ	2.04	1.88	pg/g	1.33	3.97
38444-76-7	PCB-27	U	.662	.662	pg/g	0.662	1.99
16606-02-3	PCB-31		12.5	12.4	pg/g	0.662	9.94
38444-77-8	PCB-32	J	1.62	1.47	pg/g	0.662	1.99
37680-68-5	PCB-34	U	.662	.662	pg/g	0.662	1.99
37680-69-6	PCB-35	J	1.92	1.68	pg/g	0.662	3.97
38444-87-0	PCB-36	U	.662	.662	pg/g	0.662	3.97
38444-90-5	PCB-37	J	8.49	8.18	pg/g	0.662	19.9

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963002**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**19.6**
Client ID:	**CAWA-14-49279**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38		10.8	10.5	pg/g	0.662	1.99
38444-88-1	PCB-39	U	.662	.662	pg/g	0.662	3.97
PCB-40/71	PCB-40/71	C	10.0	9.65	pg/g	1.33	3.97
52663-59-9	PCB-41	U	1.57	1.33	pg/g	1.33	1.99
36559-22-5	PCB-42		8.33	7.92	pg/g	0.994	1.99
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	3.97
PCB-44/47/65	PCB-44/65/47	C	34.3	33.9	pg/g	3.32	5.96
PCB-45/51	PCB-45/51	CJ	2.88	2.48	pg/g	1.33	3.97
41464-47-5	PCB-46	U	0.878	.662	pg/g	0.662	1.99
70362-47-9	PCB-48		3.77	3.29	pg/g	0.662	1.99
PCB-49/69	PCB-69/49	C	22.6	22.2	pg/g	1.33	3.97
PCB-50/53	PCB-50/53	CJ	2.89	2.65	pg/g	1.33	3.97
35693-99-3	PCB-52		43.4	43.1	pg/g	1.33	1.99
15968-05-5	PCB-54	U	.662	.662	pg/g	0.662	1.99
74338-24-2	PCB-55	U	.994	.994	pg/g	0.994	1.99
41464-43-1	PCB-56		19.6	19.1	pg/g	0.662	3.97
70424-67-8	PCB-57	U	.994	.994	pg/g	0.994	1.99
41464-49-7	PCB-58	U	.994	.994	pg/g	0.994	1.99
PCB-59/62/75	PCB-59/62/75	CU	1.99	1.99	pg/g	1.99	5.96
33025-41-1	PCB-60		8.29	7.84	pg/g	0.662	3.97
PCB-61-76	PCB-61/76/70/74	C	68.4	68.2	pg/g	2.64	7.95
74472-34-7	PCB-63	J	0.865	.686	pg/g	0.662	4.97
52663-58-8	PCB-64		11.7	11.3	pg/g	0.994	1.99
32598-10-0	PCB-66		37.0	36.8	pg/g	0.994	4.97
73575-53-8	PCB-67	U	.994	.994	pg/g	0.994	1.99
73575-52-7	PCB-68	U	.662	.662	pg/g	0.662	1.99
41464-42-0	PCB-72	U	.662	.662	pg/g	0.662	3.97
74338-23-1	PCB-73	U	.994	.994	pg/g	0.994	1.99
32598-13-3	PCB-77		7.79	7.56	pg/g	0.662	1.99
70362-49-1	PCB-78	U	.662	.662	pg/g	0.662	1.99
41464-48-6	PCB-79	J	1.79	1.63	pg/g	0.662	3.97
33284-52-5	PCB-80	U	.662	.662	pg/g	0.662	3.97

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963002**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**19.6**
Client ID:	**CAWA-14-49279**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.662	.662	pg/g	0.662	1.99
52663-62-4	PCB-82		14.5	14.2	pg/g	0.994	4.97
60145-20-2	PCB-83		8.27	7.92	pg/g	0.994	1.99
52663-60-2	PCB-84		32.3	31.9	pg/g	0.994	1.99
PCB-85-117	PCB-117/116/85	C	26.4	26.2	pg/g	1.99	5.96
PCB-86-125	PCB-86/87/97/109/119/125	C	98.7	98.4	pg/g	3.97	11.9
PCB-88/91	PCB-88/91	C	19.7	19.3	pg/g	1.33	3.97
73575-57-2	PCB-89	J	1.01	.679	pg/g	0.662	1.99
PCB-90-113	PCB-113/90/101	C	221	221	pg/g	1.99	5.96
52663-61-3	PCB-92		35.8	35.5	pg/g	0.994	1.99
PCB-93/100	PCB-93/100	CU	1.99	1.99	pg/g	1.99	3.97
73575-55-0	PCB-94	U	.662	.662	pg/g	0.662	1.99
38379-99-6	PCB-95		166	166	pg/g	1.33	3.97
73575-54-9	PCB-96	U	.662	.662	pg/g	0.662	1.99
PCB-98/102	PCB-102/98	CJ	2.35	2	pg/g	1.33	3.97
38380-01-7	PCB-99		65.1	64.5	pg/g	1.33	1.99
60145-21-3	PCB-103	U	0.721	.662	pg/g	0.662	4.97
56558-16-8	PCB-104	U	.662	.662	pg/g	0.662	1.99
32598-14-4	PCB-105		49.3	48.6	pg/g	0.994	1.99
70424-69-0	PCB-106	U	.994	.994	pg/g	0.994	1.99
70424-68-9	PCB-107		8.23	7.95	pg/g	0.662	3.97
PCB-108/124	PCB-108/124	C	6.25	5.93	pg/g	1.33	3.97
PCB-110/115	PCB-110/115	C	247	245	pg/g	2.64	3.97
39635-32-0	PCB-111	U	.662	.662	pg/g	0.662	1.99
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	1.99
74472-37-0	PCB-114	J	1.78	1.43	pg/g	0.662	1.99
31508-00-6	PCB-118		121	119	pg/g	1.33	3.97
68194-12-7	PCB-120	U	.662	.662	pg/g	0.662	1.99
56558-18-0	PCB-121	U	.662	.662	pg/g	0.662	1.99
76842-07-4	PCB-122	U	1.57	.662	pg/g	0.662	6.86
65510-44-3	PCB-123		2.70	2.39	pg/g	0.662	1.99
57465-28-8	PCB-126	J	2.19	1.81	pg/g	0.662	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963002**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**19.6**
Client ID:	**CAWA-14-49279**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.662	.662	pg/g	0.662	1.99
PCB-128/166	PCB-128/166	C	55.9	55.6	pg/g	1.33	3.97
PCB-129-163	PCB-138/163/129	C	627	627	pg/g	2.64	5.96
52663-66-8	PCB-130		25.2	24.8	pg/g	0.994	1.99
61798-70-7	PCB-131		4.30	3.91	pg/g	0.662	1.99
38380-05-1	PCB-132		189	187	pg/g	0.994	1.99
35694-04-3	PCB-133		6.59	6.26	pg/g	0.662	1.99
52704-70-8	PCB-134		23.6	23.2	pg/g	1.33	1.99
PCB-135/151	PCB-151/135	C	247	247	pg/g	1.33	3.97
38411-22-2	PCB-136		61.7	61.5	pg/g	0.662	1.99
35694-06-5	PCB-137		11.3	10.8	pg/g	1.33	1.99
PCB-139/140	PCB-139/140	CJ	4.07	3.7	pg/g	1.33	3.97
52712-04-6	PCB-141		142	141	pg/g	1.33	3.97
41411-61-4	PCB-142	U	.662	.662	pg/g	0.662	1.99
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	1.99
68194-14-9	PCB-144		24.4	24.1	pg/g	0.662	1.99
74472-40-5	PCB-145	U	.662	.662	pg/g	0.662	1.99
51908-16-8	PCB-146		83.1	82.6	pg/g	0.994	1.99
PCB-147/149	PCB-147/149	C	543	542	pg/g	1.99	7.95
74472-41-6	PCB-148	U	.662	.662	pg/g	0.662	1.99
68194-08-1	PCB-150	U	.994	.994	pg/g	0.994	1.99
68194-09-2	PCB-152	U	.662	.662	pg/g	0.662	1.99
PCB-153/168	PCB-153/168	C	611	611	pg/g	1.99	7.95
60145-22-4	PCB-154	J	1.82	1.55	pg/g	0.662	1.99
33979-03-2	PCB-155	U	.662	.662	pg/g	0.662	1.99
PCB-156/157	PCB-156/157	C	52.0	51.7	pg/g	1.33	3.97
74472-42-7	PCB-158		44.3	44	pg/g	0.662	1.99
39635-35-3	PCB-159	U	.662	.662	pg/g	0.662	1.99
41411-62-5	PCB-160	U	.662	.662	pg/g	0.662	1.99
74472-43-8	PCB-161	U	.994	.994	pg/g	0.994	1.99
39635-34-2	PCB-162	U	.994	.994	pg/g	0.994	1.99
74472-45-0	PCB-164		45.8	45.5	pg/g	0.662	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963002**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**19.6**
Client ID:	**CAWA-14-49279**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.662	.662	pg/g	0.662	1.99
52663-72-6	PCB-167		25.4	25.2	pg/g	0.662	1.99
32774-16-6	PCB-169	U	.994	.994	pg/g	0.994	1.99
35065-30-6	PCB-170		299	299	pg/g	0.662	1.99
PCB-171/173	PCB-173/171	C	74.6	74.4	pg/g	1.33	3.97
52663-74-8	PCB-172		48.6	48.3	pg/g	0.994	1.99
38411-25-5	PCB-174		298	298	pg/g	1.33	1.99
40186-70-7	PCB-175		6.94	6.69	pg/g	0.994	1.99
52663-65-7	PCB-176		23.3	23.1	pg/g	0.662	1.99
52663-70-4	PCB-177		175	175	pg/g	0.994	1.99
52663-67-9	PCB-178		48.8	48.6	pg/g	1.33	1.99
52663-64-6	PCB-179		98.9	98.7	pg/g	0.662	1.99
PCB-180/193	PCB-193/180	C	691	691	pg/g	1.99	3.97
74472-47-2	PCB-181	U	.994	.994	pg/g	0.994	1.99
60145-23-5	PCB-182	U	.662	.662	pg/g	0.662	1.99
PCB-183/185	PCB-183/185	C	158	158	pg/g	1.33	3.97
74472-48-3	PCB-184	U	.662	.662	pg/g	0.662	1.99
74472-49-4	PCB-186	U	.662	.662	pg/g	0.662	1.99
52663-68-0	PCB-187		335	334	pg/g	0.994	1.99
74487-85-7	PCB-188	U	.662	.662	pg/g	0.662	1.99
39635-31-9	PCB-189		10.2	9.89	pg/g	0.662	1.99
41411-64-7	PCB-190		65.4	65.2	pg/g	0.994	1.99
74472-50-7	PCB-191		8.94	8.72	pg/g	0.662	1.99
74472-51-8	PCB-192	U	.662	.662	pg/g	0.662	1.99
35694-08-7	PCB-194		169	169	pg/g	0.662	1.99
52663-78-2	PCB-195		71.8	71.5	pg/g	0.994	1.99
42740-50-1	PCB-196		68.6	68.3	pg/g	0.662	1.99
PCB-197/200	PCB-197/200	C	20.5	20.3	pg/g	1.33	3.97
PCB-198/199	PCB-198/199	C	172	172	pg/g	1.33	3.97
40186-71-8	PCB-201		13.4	13.2	pg/g	0.662	1.99
2136-99-4	PCB-202		26.8	26.5	pg/g	0.994	1.99
52663-76-0	PCB-203		103	103	pg/g	1.33	1.99

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963002**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**19.6**
Client ID:	**CAWA-14-49279**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.994	.994	pg/g	0.994	1.99
74472-53-0	PCB-205		6.74	6.5	pg/g	0.662	1.99
40186-72-9	PCB-206		31.7	31.3	pg/g	0.994	1.99
52663-79-3	PCB-207		3.38	3.1	pg/g	0.662	1.99
52663-77-1	PCB-208		7.29	6.96	pg/g	0.662	1.99
2051-24-3	PCB-209		14.2	13.8	pg/g	0.662	1.99
27323-18-8	Total Mono PCBs		4.66	1.79	pg/g		
25512-42-9	Total Di PCBs		12.7	10.8	pg/g		
25323-68-6	Total Tri PCBs		71.3	68.5	pg/g		
26914-33-0	Total Tetra PCBs		286	278	pg/g		
25429-29-2	Total Penta PCBs		1130	1120	pg/g		
26601-64-9	Total Hexa PCBs		2830	2820	pg/g		
28655-71-2	Total Hepta PCBs		2340	2340	pg/g		
55722-26-4	Total Octa PCBs		652	649	pg/g		
53742-07-7	Total Nona PCBs		42.4	41.4	pg/g		
DECACB(Tot)	Total Deca PCB		14.2	13.8	pg/g		
1336-36-3	Total PCB Congeners		7380	7340	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		74.3	199	pg/g	37.4	(15%-150%)
13C-3-MoCB		93.4	199	pg/g	47.0	(15%-150%)
13C-4-DiCB		97.8	199	pg/g	49.2	(25%-150%)
13C-15-DiCB		137	199	pg/g	68.9	(25%-150%)
13C-19-TrCB		107	199	pg/g	53.9	(25%-150%)
13C-37-TrCB		126	199	pg/g	63.2	(25%-150%)
13C-54-TeCB		83.1	199	pg/g	41.8	(25%-150%)
13C-77-TeCB		171	199	pg/g	86.2	(25%-150%)
13C-81-TeCB		173	199	pg/g	87.2	(25%-150%)
13C-104-PeCB		108	199	pg/g	54.2	(25%-150%)
13C-105-PeCB		132	199	pg/g	66.4	(25%-150%)
13C-114-PeCB		136	199	pg/g	68.4	(25%-150%)
13C-118-PeCB		149	199	pg/g	75.1	(25%-150%)
13C-123-PeCB		155	199	pg/g	78.1	(25%-150%)
13C-126-PeCB		162	199	pg/g	81.3	(25%-150%)
13C-155-HxCB		107	199	pg/g	53.8	(25%-150%)
13C-156-HxCB	C	317	397	pg/g	79.8	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		159	199	pg/g	79.9	(25%-150%)
13C-169-HxCB		170	199	pg/g	85.4	(25%-150%)
13C-188-HpCB		94.8	199	pg/g	47.7	(25%-150%)
13C-189-HpCB		141	199	pg/g	70.8	(25%-150%)
13C-202-OcCB		113	199	pg/g	56.7	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963002**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**19.6**
Client ID:	**CAWA-14-49279**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 16:59**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-8**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.51 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		111	199	pg/g	56.1	(25%-150%)
13C-206-NoCB		140	199	pg/g	70.5	(25%-150%)
13C-208-NoCB		143	199	pg/g	72.0	(25%-150%)
13C-209-DeCB		137	199	pg/g	69.0	(25%-150%)
13C-28-TrCB		135	199	pg/g	67.9	(30%-135%)
13C-111-PeCB		150	199	pg/g	75.6	(30%-135%)
13C-178-HpCB		134	199	pg/g	67.5	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963003**	**Date Collected:**	**04/04/2014 11:37**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**.7**
Client ID:	**CAWA-14-49273**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/30/2014 16:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c30apr14a-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.54 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.956	.956	pg/g	0.956	4.78
2051-61-8	PCB-2	U	.956	.956	pg/g	0.956	1.91
2051-62-9	PCB-3	U	.956	.956	pg/g	0.956	1.91
13029-08-8	PCB-4	U	.956	.956	pg/g	0.956	3.82
16605-91-7	PCB-5	U	.956	.956	pg/g	0.956	3.82
25569-80-6	PCB-6	U	.956	.956	pg/g	0.956	1.91
33284-50-3	PCB-7	U	.956	.956	pg/g	0.956	3.82
34883-43-7	PCB-8	U	.956	.956	pg/g	0.956	19.1
34883-39-1	PCB-9	U	.956	.956	pg/g	0.956	1.91
33146-45-1	PCB-10	U	.956	.956	pg/g	0.956	3.82
2050-67-1	PCB-11	U	1.91	1.91	pg/g	1.91	47.8
PCB-12/13	PCB-13/12	CU	.956	.956	pg/g	0.956	7.64
34883-41-5	PCB-14	U	.956	.956	pg/g	0.956	3.82
2050-68-2	PCB-15	U	.956	.956	pg/g	0.956	19.1
38444-78-9	PCB-16	U	.956	.956	pg/g	0.956	3.82
37680-66-3	PCB-17	U	.636	.636	pg/g	0.636	3.82
PCB-18/30	PCB-18/30	CU	1.27	1.27	pg/g	1.27	3.82
38444-73-4	PCB-19	U	.636	.636	pg/g	0.636	1.91
PCB-20/28	PCB-20/28	CU	1.27	1.27	pg/g	1.27	19.1
PCB-21/33	PCB-21/33	CU	1.27	1.27	pg/g	1.27	7.64
38444-85-8	PCB-22	U	.636	.636	pg/g	0.636	3.82
55720-44-0	PCB-23	U	.636	.636	pg/g	0.636	1.91
55702-45-9	PCB-24	U	.636	.636	pg/g	0.636	1.91
55712-37-3	PCB-25	U	.636	.636	pg/g	0.636	1.91
PCB-26/29	PCB-26/29	CU	1.27	1.27	pg/g	1.27	3.82
38444-76-7	PCB-27	U	.636	.636	pg/g	0.636	1.91
16606-02-3	PCB-31	U	.636	.636	pg/g	0.636	9.56
38444-77-8	PCB-32	U	.636	.636	pg/g	0.636	1.91
37680-68-5	PCB-34	U	.636	.636	pg/g	0.636	1.91
37680-69-6	PCB-35	U	.636	.636	pg/g	0.636	3.82
38444-87-0	PCB-36	U	.636	.636	pg/g	0.636	3.82
38444-90-5	PCB-37	U	.636	.636	pg/g	0.636	19.1

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963003**	**Date Collected:**	**04/04/2014 11:37**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**.7**
Client ID:	**CAWA-14-49273**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/30/2014 16:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c30apr14a-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.54 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.636	.636	pg/g	0.636	1.91
38444-88-1	PCB-39	U	.636	.636	pg/g	0.636	3.82
PCB-40/71	PCB-40/71	CU	1.27	1.27	pg/g	1.27	3.82
52663-59-9	PCB-41	U	1.27	1.27	pg/g	1.27	1.91
36559-22-5	PCB-42	U	.956	.956	pg/g	0.956	1.91
70362-46-8	PCB-43	U	1.27	1.27	pg/g	1.27	3.82
PCB-44/47/65	PCB-44/65/47	CU	3.19	3.19	pg/g	3.19	5.73
PCB-45/51	PCB-45/51	CU	1.27	1.27	pg/g	1.27	3.82
41464-47-5	PCB-46	U	.636	.636	pg/g	0.636	1.91
70362-47-9	PCB-48	U	.636	.636	pg/g	0.636	1.91
PCB-49/69	PCB-69/49	CU	1.27	1.27	pg/g	1.27	3.82
PCB-50/53	PCB-50/53	CU	1.27	1.27	pg/g	1.27	3.82
35693-99-3	PCB-52	U	1.27	1.27	pg/g	1.27	1.91
15968-05-5	PCB-54	U	.636	.636	pg/g	0.636	1.91
74338-24-2	PCB-55	U	.956	.956	pg/g	0.956	1.91
41464-43-1	PCB-56	U	0.698	.636	pg/g	0.636	3.82
70424-67-8	PCB-57	U	.956	.956	pg/g	0.956	1.91
41464-49-7	PCB-58	U	.956	.956	pg/g	0.956	1.91
PCB-59/62/75	PCB-59/62/75	CU	1.91	1.91	pg/g	1.91	5.73
33025-41-1	PCB-60	U	.636	.636	pg/g	0.636	3.82
PCB-61-76	PCB-61/76/70/74	CU	2.54	2.54	pg/g	2.54	7.64
74472-34-7	PCB-63	U	.636	.636	pg/g	0.636	4.78
52663-58-8	PCB-64	U	.956	.956	pg/g	0.956	1.91
32598-10-0	PCB-66	U	1.14	.956	pg/g	0.956	4.78
73575-53-8	PCB-67	U	.956	.956	pg/g	0.956	1.91
73575-52-7	PCB-68	U	.636	.636	pg/g	0.636	1.91
41464-42-0	PCB-72	U	.636	.636	pg/g	0.636	3.82
74338-23-1	PCB-73	U	.956	.956	pg/g	0.956	1.91
32598-13-3	PCB-77	U	.636	.636	pg/g	0.636	1.91
70362-49-1	PCB-78	U	.636	.636	pg/g	0.636	1.91
41464-48-6	PCB-79	U	.636	.636	pg/g	0.636	3.82
33284-52-5	PCB-80	U	.636	.636	pg/g	0.636	3.82

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963003**	**Date Collected:**	**04/04/2014 11:37**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**.7**
Client ID:	**CAWA-14-49273**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/30/2014 16:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c30apr14a-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.54 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.636	.636	pg/g	0.636	1.91
52663-62-4	PCB-82	U	.956	.956	pg/g	0.956	4.78
60145-20-2	PCB-83	U	.956	.956	pg/g	0.956	1.91
52663-60-2	PCB-84	U	.956	.956	pg/g	0.956	1.91
PCB-85-117	PCB-117/116/85	CU	1.91	1.91	pg/g	1.91	5.73
PCB-86-125	PCB-86/87/97/109/119/125	CU	3.82	3.82	pg/g	3.82	11.5
PCB-88/91	PCB-88/91	CU	1.27	1.27	pg/g	1.27	3.82
73575-57-2	PCB-89	U	.636	.636	pg/g	0.636	1.91
PCB-90-113	PCB-113/90/101	CJ	4.16	3.86	pg/g	1.91	5.73
52663-61-3	PCB-92	U	.956	.956	pg/g	0.956	1.91
PCB-93/100	PCB-93/100	CU	1.91	1.91	pg/g	1.91	3.82
73575-55-0	PCB-94	U	.636	.636	pg/g	0.636	1.91
38379-99-6	PCB-95	J	3.24	2.93	pg/g	1.27	3.82
73575-54-9	PCB-96	U	.636	.636	pg/g	0.636	1.91
PCB-98/102	PCB-102/98	CU	1.27	1.27	pg/g	1.27	3.82
38380-01-7	PCB-99	U	1.60	1.27	pg/g	1.27	1.91
60145-21-3	PCB-103	U	.636	.636	pg/g	0.636	4.78
56558-16-8	PCB-104	U	.636	.636	pg/g	0.636	1.91
32598-14-4	PCB-105	U	1.27	.956	pg/g	0.956	1.91
70424-69-0	PCB-106	U	.956	.956	pg/g	0.956	1.91
70424-68-9	PCB-107	U	.636	.636	pg/g	0.636	3.82
PCB-108/124	PCB-108/124	CU	1.27	1.27	pg/g	1.27	3.82
PCB-110/115	PCB-110/115	CJ	5.25	2.83	pg/g	2.54	3.82
39635-32-0	PCB-111	U	.636	.636	pg/g	0.636	1.91
74472-36-9	PCB-112	U	1.27	1.27	pg/g	1.27	1.91
74472-37-0	PCB-114	U	.636	.636	pg/g	0.636	1.91
31508-00-6	PCB-118	U	2.86	1.27	pg/g	1.27	3.82
68194-12-7	PCB-120	U	.636	.636	pg/g	0.636	1.91
56558-18-0	PCB-121	U	.636	.636	pg/g	0.636	1.91
76842-07-4	PCB-122	U	.636	.636	pg/g	0.636	1.91
65510-44-3	PCB-123	U	.636	.636	pg/g	0.636	1.91
57465-28-8	PCB-126	U	.636	.636	pg/g	0.636	1.91

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963003**	**Date Collected:**	**04/04/2014 11:37**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**.7**
Client ID:	**CAWA-14-49273**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/30/2014 16:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c30apr14a-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.54 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.636	.636	pg/g	0.636	1.91
PCB-128/166	PCB-128/166	CU	1.53	1.27	pg/g	1.27	3.82
PCB-129-163	PCB-138/163/129	C	18.0	17.7	pg/g	2.54	5.73
52663-66-8	PCB-130	U	.956	.956	pg/g	0.956	1.91
61798-70-7	PCB-131	U	.636	.636	pg/g	0.636	1.91
38380-05-1	PCB-132		4.50	3.31	pg/g	0.956	1.91
35694-04-3	PCB-133	U	.636	.636	pg/g	0.636	1.91
52704-70-8	PCB-134	U	1.27	1.27	pg/g	1.27	1.91
PCB-135/151	PCB-151/135	C	5.18	4.85	pg/g	1.27	3.82
38411-22-2	PCB-136	J	1.35	1.14	pg/g	0.636	1.91
35694-06-5	PCB-137	U	1.27	1.27	pg/g	1.27	1.91
PCB-139/140	PCB-139/140	CU	1.27	1.27	pg/g	1.27	3.82
52712-04-6	PCB-141	J	3.48	3.14	pg/g	1.27	3.82
41411-61-4	PCB-142	U	.636	.636	pg/g	0.636	1.91
68194-15-0	PCB-143	U	1.27	1.27	pg/g	1.27	1.91
68194-14-9	PCB-144	U	.636	.636	pg/g	0.636	1.91
74472-40-5	PCB-145	U	.636	.636	pg/g	0.636	1.91
51908-16-8	PCB-146		2.55	2.03	pg/g	0.956	1.91
PCB-147/149	PCB-147/149	C	12.9	11.4	pg/g	1.91	7.64
74472-41-6	PCB-148	U	.636	.636	pg/g	0.636	1.91
68194-08-1	PCB-150	U	.956	.956	pg/g	0.956	1.91
68194-09-2	PCB-152	U	.636	.636	pg/g	0.636	1.91
PCB-153/168	PCB-153/168	C	17.1	16.8	pg/g	1.91	7.64
60145-22-4	PCB-154	U	.636	.636	pg/g	0.636	1.91
33979-03-2	PCB-155	U	.636	.636	pg/g	0.636	1.91
PCB-156/157	PCB-156/157	CU	1.33	1.27	pg/g	1.27	3.82
74472-42-7	PCB-158	J	1.16	.915	pg/g	0.636	1.91
39635-35-3	PCB-159	U	.636	.636	pg/g	0.636	1.91
41411-62-5	PCB-160	U	.636	.636	pg/g	0.636	1.91
74472-43-8	PCB-161	U	.956	.956	pg/g	0.956	1.91
39635-34-2	PCB-162	U	.956	.956	pg/g	0.956	1.91
74472-45-0	PCB-164	J	1.38	1.12	pg/g	0.636	1.91

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963003**	**Date Collected:**	**04/04/2014 11:37**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**.7**
Client ID:	**CAWA-14-49273**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/30/2014 16:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c30apr14a-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.54 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.636	.636	pg/g	0.636	1.91
52663-72-6	PCB-167	U	0.698	.636	pg/g	0.636	1.91
32774-16-6	PCB-169	U	.956	.956	pg/g	0.956	1.91
35065-30-6	PCB-170		6.56	6.09	pg/g	0.636	1.91
PCB-171/173	PCB-173/171	CJ	1.60	1.31	pg/g	1.27	3.82
52663-74-8	PCB-172	U	1.18	.956	pg/g	0.956	1.91
38411-25-5	PCB-174		6.49	6.2	pg/g	1.27	1.91
40186-70-7	PCB-175	U	.956	.956	pg/g	0.956	1.91
52663-65-7	PCB-176	U	0.646	.636	pg/g	0.636	1.91
52663-70-4	PCB-177		3.72	3.43	pg/g	0.956	1.91
52663-67-9	PCB-178	U	1.31	1.27	pg/g	1.27	1.91
52663-64-6	PCB-179		2.54	2.35	pg/g	0.636	1.91
PCB-180/193	PCB-193/180	C	14.8	14.5	pg/g	1.91	3.82
74472-47-2	PCB-181	U	.956	.956	pg/g	0.956	1.91
60145-23-5	PCB-182	U	.636	.636	pg/g	0.636	1.91
PCB-183/185	PCB-183/185	CJ	3.47	3.17	pg/g	1.27	3.82
74472-48-3	PCB-184	U	.636	.636	pg/g	0.636	1.91
74472-49-4	PCB-186	U	.636	.636	pg/g	0.636	1.91
52663-68-0	PCB-187		7.82	7.33	pg/g	0.956	1.91
74487-85-7	PCB-188	U	.636	.636	pg/g	0.636	1.91
39635-31-9	PCB-189	U	.636	.636	pg/g	0.636	1.91
41411-64-7	PCB-190	J	1.40	1.17	pg/g	0.956	1.91
74472-50-7	PCB-191	U	.636	.636	pg/g	0.636	1.91
74472-51-8	PCB-192	U	.636	.636	pg/g	0.636	1.91
35694-08-7	PCB-194		3.70	3.37	pg/g	0.636	1.91
52663-78-2	PCB-195	J	1.56	1.28	pg/g	0.956	1.91
42740-50-1	PCB-196	J	1.56	1.27	pg/g	0.636	1.91
PCB-197/200	PCB-197/200	CU	1.27	1.27	pg/g	1.27	3.82
PCB-198/199	PCB-198/199	CJ	3.82	3.46	pg/g	1.27	3.82
40186-71-8	PCB-201	U	.636	.636	pg/g	0.636	1.91
2136-99-4	PCB-202	U	.956	.956	pg/g	0.956	1.91
52663-76-0	PCB-203		2.39	1.99	pg/g	1.27	1.91

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963003**	**Date Collected:**	**04/04/2014 11:37**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**.7**
Client ID:	**CAWA-14-49273**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/30/2014 16:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c30apr14a-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.54 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.956	.956	pg/g	0.956	1.91
74472-53-0	PCB-205	U	.636	.636	pg/g	0.636	1.91
40186-72-9	PCB-206	U	1.16	.956	pg/g	0.956	1.91
52663-79-3	PCB-207	U	.636	.636	pg/g	0.636	1.91
52663-77-1	PCB-208	U	.636	.636	pg/g	0.636	1.91
2051-24-3	PCB-209	U	0.673	.636	pg/g	0.636	1.91
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	0	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	1.83	0	pg/g		
25429-29-2	Total Penta PCBs		18.4	9.63	pg/g		
26601-64-9	Total Hexa PCBs		71.1	62.4	pg/g		
28655-71-2	Total Hepta PCBs		51.5	45.6	pg/g		
55722-26-4	Total Octa PCBs		13.0	11.4	pg/g		
53742-07-7	Total Nona PCBs	U	1.16	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0.673	0	pg/g		
1336-36-3	Total PCB Congeners		158	129	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		68.9	191	pg/g	36.1	(15%-150%)
13C-3-MoCB		78.7	191	pg/g	41.2	(15%-150%)
13C-4-DiCB		77.5	191	pg/g	40.6	(25%-150%)
13C-15-DiCB		123	191	pg/g	64.1	(25%-150%)
13C-19-TrCB		101	191	pg/g	53.0	(25%-150%)
13C-37-TrCB		134	191	pg/g	70.0	(25%-150%)
13C-54-TeCB		96.7	191	pg/g	50.6	(25%-150%)
13C-77-TeCB		139	191	pg/g	72.6	(25%-150%)
13C-81-TeCB		144	191	pg/g	75.2	(25%-150%)
13C-104-PeCB		109	191	pg/g	56.9	(25%-150%)
13C-105-PeCB		121	191	pg/g	63.5	(25%-150%)
13C-114-PeCB		118	191	pg/g	61.7	(25%-150%)
13C-118-PeCB		125	191	pg/g	65.4	(25%-150%)
13C-123-PeCB		131	191	pg/g	68.3	(25%-150%)
13C-126-PeCB		113	191	pg/g	59.2	(25%-150%)
13C-155-HxCB		138	191	pg/g	72.0	(25%-150%)
13C-156-HxCB	C	246	382	pg/g	64.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		121	191	pg/g	63.1	(25%-150%)
13C-169-HxCB		142	191	pg/g	74.4	(25%-150%)
13C-188-HpCB		119	191	pg/g	62.2	(25%-150%)
13C-189-HpCB		127	191	pg/g	66.5	(25%-150%)
13C-202-OcCB		113	191	pg/g	59.2	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963003**	**Date Collected:**	**04/04/2014 11:37**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**.7**
Client ID:	**CAWA-14-49273**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/30/2014 16:09**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c30apr14a-5**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.54 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		145	191	pg/g	76.0	(25%-150%)
13C-206-NoCB		135	191	pg/g	70.8	(25%-150%)
13C-208-NoCB		129	191	pg/g	67.6	(25%-150%)
13C-209-DeCB		132	191	pg/g	69.3	(25%-150%)
13C-28-TrCB		124	191	pg/g	64.6	(30%-135%)
13C-111-PeCB		134	191	pg/g	69.9	(30%-135%)
13C-178-HpCB		135	191	pg/g	70.5	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963004**	**Date Collected:**	**04/04/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**1.9**
Client ID:	**CAWA-14-49274**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 19:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.59 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	.963	.963	pg/g	0.963	4.81
2051-61-8	PCB-2	U	1.66	.963	pg/g	0.963	1.93
2051-62-9	PCB-3	J	1.95	1.76	pg/g	0.963	1.93
13029-08-8	PCB-4	U	.963	.963	pg/g	0.963	3.85
16605-91-7	PCB-5	U	.963	.963	pg/g	0.963	3.85
25569-80-6	PCB-6	U	.963	.963	pg/g	0.963	1.93
33284-50-3	PCB-7	U	.963	.963	pg/g	0.963	3.85
34883-43-7	PCB-8	J	2.02	1.51	pg/g	0.963	19.3
34883-39-1	PCB-9	U	.963	.963	pg/g	0.963	1.93
33146-45-1	PCB-10	U	.963	.963	pg/g	0.963	3.85
2050-67-1	PCB-11	BJ	3.16	2.61	pg/g	1.93	48.1
PCB-12/13	PCB-13/12	CJ	3.28	2.61	pg/g	0.963	7.70
34883-41-5	PCB-14	U	.963	.963	pg/g	0.963	3.85
2050-68-2	PCB-15	J	3.74	3.09	pg/g	0.963	19.3
38444-78-9	PCB-16	J	1.95	1.64	pg/g	0.963	3.85
37680-66-3	PCB-17	J	2.67	2.33	pg/g	0.641	3.85
PCB-18/30	PCB-18/30	C	5.19	4.98	pg/g	1.28	3.85
38444-73-4	PCB-19	U	.641	.641	pg/g	0.641	1.93
PCB-20/28	PCB-20/28	CJ	16.5	16.4	pg/g	1.28	19.3
PCB-21/33	PCB-21/33	CJ	5.44	5.27	pg/g	1.28	7.70
38444-85-8	PCB-22		5.06	4.85	pg/g	0.641	3.85
55720-44-0	PCB-23	U	.641	.641	pg/g	0.641	1.93
55702-45-9	PCB-24	U	.641	.641	pg/g	0.641	1.93
55712-37-3	PCB-25	U	0.787	.641	pg/g	0.641	1.93
PCB-26/29	PCB-26/29	CJ	1.69	1.53	pg/g	1.28	3.85
38444-76-7	PCB-27	U	.641	.641	pg/g	0.641	1.93
16606-02-3	PCB-31		13.7	13.6	pg/g	0.641	9.63
38444-77-8	PCB-32	J	1.90	1.74	pg/g	0.641	1.93
37680-68-5	PCB-34	U	.641	.641	pg/g	0.641	1.93
37680-69-6	PCB-35	U	.641	.641	pg/g	0.641	3.85
38444-87-0	PCB-36	U	.641	.641	pg/g	0.641	3.85
38444-90-5	PCB-37	J	8.62	8.31	pg/g	0.641	19.3

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963004**	**Date Collected:**	**04/04/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**1.9**
Client ID:	**CAWA-14-49274**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 19:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.59 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38		7.83	7.59	pg/g	0.641	1.93
38444-88-1	PCB-39	U	.641	.641	pg/g	0.641	3.85
PCB-40/71	PCB-40/71	C	12.1	11.7	pg/g	1.28	3.85
52663-59-9	PCB-41		3.17	2.78	pg/g	1.28	1.93
36559-22-5	PCB-42		9.58	9.17	pg/g	0.963	1.93
70362-46-8	PCB-43	U	1.28	1.28	pg/g	1.28	3.85
PCB-44/47/65	PCB-44/65/47	C	40.6	40.3	pg/g	3.21	5.78
PCB-45/51	PCB-45/51	CJ	3.07	2.66	pg/g	1.28	3.85
41464-47-5	PCB-46	J	1.12	.855	pg/g	0.641	1.93
70362-47-9	PCB-48		4.43	3.95	pg/g	0.641	1.93
PCB-49/69	PCB-69/49	C	26.3	26	pg/g	1.28	3.85
PCB-50/53	PCB-50/53	CJ	2.94	2.7	pg/g	1.28	3.85
35693-99-3	PCB-52		50.5	50.1	pg/g	1.28	1.93
15968-05-5	PCB-54	U	.641	.641	pg/g	0.641	1.93
74338-24-2	PCB-55	U	.963	.963	pg/g	0.963	1.93
41464-43-1	PCB-56		25.2	24.7	pg/g	0.641	3.85
70424-67-8	PCB-57	U	.963	.963	pg/g	0.963	1.93
41464-49-7	PCB-58	U	.963	.963	pg/g	0.963	1.93
PCB-59/62/75	PCB-59/62/75	CU	1.93	1.93	pg/g	1.93	5.78
33025-41-1	PCB-60		10.7	10.3	pg/g	0.641	3.85
PCB-61-76	PCB-61/76/70/74	C	81.6	81.4	pg/g	2.56	7.70
74472-34-7	PCB-63	J	1.07	.895	pg/g	0.641	4.81
52663-58-8	PCB-64		14.5	14.2	pg/g	0.963	1.93
32598-10-0	PCB-66		48.5	48.3	pg/g	0.963	4.81
73575-53-8	PCB-67	U	.963	.963	pg/g	0.963	1.93
73575-52-7	PCB-68	U	.641	.641	pg/g	0.641	1.93
41464-42-0	PCB-72	U	.641	.641	pg/g	0.641	3.85
74338-23-1	PCB-73	U	.963	.963	pg/g	0.963	1.93
32598-13-3	PCB-77		9.03	8.8	pg/g	0.641	1.93
70362-49-1	PCB-78	U	.641	.641	pg/g	0.641	1.93
41464-48-6	PCB-79	J	1.33	1.17	pg/g	0.641	3.85
33284-52-5	PCB-80	U	.641	.641	pg/g	0.641	3.85

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963004**	**Date Collected:**	**04/04/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**1.9**
Client ID:	**CAWA-14-49274**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 19:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.59 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.641	.641	pg/g	0.641	1.93
52663-62-4	PCB-82		15.2	14.8	pg/g	0.963	4.81
60145-20-2	PCB-83		8.52	8.17	pg/g	0.963	1.93
52663-60-2	PCB-84		30.6	30.3	pg/g	0.963	1.93
PCB-85-117	PCB-117/116/85	C	28.3	28.1	pg/g	1.93	5.78
PCB-86-125	PCB-86/87/97/109/119/125	C	104	104	pg/g	3.85	11.6
PCB-88/91	PCB-88/91	C	19.0	18.6	pg/g	1.28	3.85
73575-57-2	PCB-89	J	1.11	.776	pg/g	0.641	1.93
PCB-90-113	PCB-113/90/101	C	232	232	pg/g	1.93	5.78
52663-61-3	PCB-92		35.9	35.6	pg/g	0.963	1.93
PCB-93/100	PCB-93/100	CU	1.93	1.93	pg/g	1.93	3.85
73575-55-0	PCB-94	U	.641	.641	pg/g	0.641	1.93
38379-99-6	PCB-95		171	171	pg/g	1.28	3.85
73575-54-9	PCB-96	U	.641	.641	pg/g	0.641	1.93
PCB-98/102	PCB-102/98	CJ	3.06	2.72	pg/g	1.28	3.85
38380-01-7	PCB-99		69.6	69	pg/g	1.28	1.93
60145-21-3	PCB-103	U	0.834	.641	pg/g	0.641	4.81
56558-16-8	PCB-104	U	.641	.641	pg/g	0.641	1.93
32598-14-4	PCB-105		57.7	57.1	pg/g	0.963	1.93
70424-69-0	PCB-106	U	.963	.963	pg/g	0.963	1.93
70424-68-9	PCB-107		8.37	8.09	pg/g	0.641	3.85
PCB-108/124	PCB-108/124	C	6.16	5.83	pg/g	1.28	3.85
PCB-110/115	PCB-110/115	C	244	242	pg/g	2.56	3.85
39635-32-0	PCB-111	U	.641	.641	pg/g	0.641	1.93
74472-36-9	PCB-112	U	1.28	1.28	pg/g	1.28	1.93
74472-37-0	PCB-114	J	1.79	1.44	pg/g	0.641	1.93
31508-00-6	PCB-118		133	131	pg/g	1.28	3.85
68194-12-7	PCB-120	U	.641	.641	pg/g	0.641	1.93
56558-18-0	PCB-121	U	.641	.641	pg/g	0.641	1.93
76842-07-4	PCB-122	U	1.73	.641	pg/g	0.641	6.64
65510-44-3	PCB-123		2.80	2.49	pg/g	0.641	1.93
57465-28-8	PCB-126	J	1.88	1.5	pg/g	0.641	1.93

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963004**	**Date Collected:**	**04/04/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**1.9**
Client ID:	**CAWA-14-49274**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 19:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.59 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.641	.641	pg/g	0.641	1.93
PCB-128/166	PCB-128/166	C	60.8	60.5	pg/g	1.28	3.85
PCB-129-163	PCB-138/163/129	C	733	732	pg/g	2.56	5.78
52663-66-8	PCB-130		27.2	26.8	pg/g	0.963	1.93
61798-70-7	PCB-131		4.72	4.34	pg/g	0.641	1.93
38380-05-1	PCB-132		213	211	pg/g	0.963	1.93
35694-04-3	PCB-133		7.68	7.34	pg/g	0.641	1.93
52704-70-8	PCB-134		24.4	24	pg/g	1.28	1.93
PCB-135/151	PCB-151/135	C	300	300	pg/g	1.28	3.85
38411-22-2	PCB-136		77.7	77.5	pg/g	0.641	1.93
35694-06-5	PCB-137		11.3	10.9	pg/g	1.28	1.93
PCB-139/140	PCB-139/140	CJ	3.90	3.53	pg/g	1.28	3.85
52712-04-6	PCB-141		172	172	pg/g	1.28	3.85
41411-61-4	PCB-142	U	.641	.641	pg/g	0.641	1.93
68194-15-0	PCB-143	U	1.28	1.28	pg/g	1.28	1.93
68194-14-9	PCB-144		29.6	29.3	pg/g	0.641	1.93
74472-40-5	PCB-145	U	.641	.641	pg/g	0.641	1.93
51908-16-8	PCB-146		95.4	94.9	pg/g	0.963	1.93
PCB-147/149	PCB-147/149	C	630	629	pg/g	1.93	7.70
74472-41-6	PCB-148	U	.641	.641	pg/g	0.641	1.93
68194-08-1	PCB-150	U	.963	.963	pg/g	0.963	1.93
68194-09-2	PCB-152	U	.641	.641	pg/g	0.641	1.93
PCB-153/168	PCB-153/168	C	705	705	pg/g	1.93	7.70
60145-22-4	PCB-154		2.30	2.03	pg/g	0.641	1.93
33979-03-2	PCB-155		28.3	28.1	pg/g	0.641	1.93
PCB-156/157	PCB-156/157	C	59.1	58.8	pg/g	1.28	3.85
74472-42-7	PCB-158		50.3	50	pg/g	0.641	1.93
39635-35-3	PCB-159	U	.641	.641	pg/g	0.641	1.93
41411-62-5	PCB-160	U	.641	.641	pg/g	0.641	1.93
74472-43-8	PCB-161	U	.963	.963	pg/g	0.963	1.93
39635-34-2	PCB-162	U	.963	.963	pg/g	0.963	1.93
74472-45-0	PCB-164		53.9	53.6	pg/g	0.641	1.93

Comments:

B **The target analyte was detected in the associated blank.**
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J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963004**	**Date Collected:**	**04/04/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**1.9**
Client ID:	**CAWA-14-49274**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 19:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.59 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.641	.641	pg/g	0.641	1.93
52663-72-6	PCB-167		27.5	27.3	pg/g	0.641	1.93
32774-16-6	PCB-169	U	.963	.963	pg/g	0.963	1.93
35065-30-6	PCB-170		391	391	pg/g	0.641	1.93
PCB-171/173	PCB-173/171	C	84.2	83.9	pg/g	1.28	3.85
52663-74-8	PCB-172		57.1	56.8	pg/g	0.963	1.93
38411-25-5	PCB-174		341	341	pg/g	1.28	1.93
40186-70-7	PCB-175		8.56	8.31	pg/g	0.963	1.93
52663-65-7	PCB-176		29.6	29.4	pg/g	0.641	1.93
52663-70-4	PCB-177		196	196	pg/g	0.963	1.93
52663-67-9	PCB-178		56.6	56.3	pg/g	1.28	1.93
52663-64-6	PCB-179		125	124	pg/g	0.641	1.93
PCB-180/193	PCB-193/180	C	837	837	pg/g	1.93	3.85
74472-47-2	PCB-181	U	.963	.963	pg/g	0.963	1.93
60145-23-5	PCB-182	U	.641	.641	pg/g	0.641	1.93
PCB-183/185	PCB-183/185	C	184	183	pg/g	1.28	3.85
74472-48-3	PCB-184		3.75	3.5	pg/g	0.641	1.93
74472-49-4	PCB-186	U	.641	.641	pg/g	0.641	1.93
52663-68-0	PCB-187		401	401	pg/g	0.963	1.93
74487-85-7	PCB-188	U	.641	.641	pg/g	0.641	1.93
39635-31-9	PCB-189		13.3	13	pg/g	0.641	1.93
41411-64-7	PCB-190		85.4	85.2	pg/g	0.963	1.93
74472-50-7	PCB-191		11.4	11.2	pg/g	0.641	1.93
74472-51-8	PCB-192	U	.641	.641	pg/g	0.641	1.93
35694-08-7	PCB-194		246	245	pg/g	0.641	1.93
52663-78-2	PCB-195		110	110	pg/g	0.963	1.93
42740-50-1	PCB-196		101	100	pg/g	0.641	1.93
PCB-197/200	PCB-197/200	C	26.4	26.1	pg/g	1.28	3.85
PCB-198/199	PCB-198/199	C	237	237	pg/g	1.28	3.85
40186-71-8	PCB-201		16.4	16.2	pg/g	0.641	1.93
2136-99-4	PCB-202		34.2	34	pg/g	0.963	1.93
52663-76-0	PCB-203		144	143	pg/g	1.28	1.93

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963004**	**Date Collected:**	**04/04/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**1.9**
Client ID:	**CAWA-14-49274**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 19:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.59 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	.963	.963	pg/g	0.963	1.93
74472-53-0	PCB-205		9.45	9.22	pg/g	0.641	1.93
40186-72-9	PCB-206		43.3	42.9	pg/g	0.963	1.93
52663-79-3	PCB-207		4.79	4.51	pg/g	0.641	1.93
52663-77-1	PCB-208		9.25	8.92	pg/g	0.641	1.93
2051-24-3	PCB-209		18.0	17.6	pg/g	0.641	1.93
27323-18-8	Total Mono PCBs		3.60	1.76	pg/g		
25512-42-9	Total Di PCBs		9.04	7.21	pg/g		
25323-68-6	Total Tri PCBs		71.4	68.2	pg/g		
26914-33-0	Total Tetra PCBs		346	340	pg/g		
25429-29-2	Total Penta PCBs		1180	1160	pg/g		
26601-64-9	Total Hexa PCBs		3320	3310	pg/g		
28655-71-2	Total Hepta PCBs		2820	2820	pg/g		
55722-26-4	Total Octa PCBs		924	921	pg/g		
53742-07-7	Total Nona PCBs		57.4	56.3	pg/g		
DECACB(Tot)	Total Deca PCB		18.0	17.6	pg/g		
1336-36-3	Total PCB Congeners		8750	8700	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		88.3	193	pg/g	45.9	(15%-150%)
13C-3-MoCB		101	193	pg/g	52.7	(15%-150%)
13C-4-DiCB		112	193	pg/g	58.0	(25%-150%)
13C-15-DiCB		136	193	pg/g	70.9	(25%-150%)
13C-19-TrCB		116	193	pg/g	60.3	(25%-150%)
13C-37-TrCB		129	193	pg/g	67.0	(25%-150%)
13C-54-TeCB		89.8	193	pg/g	46.6	(25%-150%)
13C-77-TeCB		180	193	pg/g	93.4	(25%-150%)
13C-81-TeCB		182	193	pg/g	94.6	(25%-150%)
13C-104-PeCB		114	193	pg/g	59.4	(25%-150%)
13C-105-PeCB		153	193	pg/g	79.5	(25%-150%)
13C-114-PeCB		149	193	pg/g	77.2	(25%-150%)
13C-118-PeCB		152	193	pg/g	78.8	(25%-150%)
13C-123-PeCB		160	193	pg/g	83.0	(25%-150%)
13C-126-PeCB		169	193	pg/g	87.9	(25%-150%)
13C-155-HxCB		112	193	pg/g	58.4	(25%-150%)
13C-156-HxCB	C	310	385	pg/g	80.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		154	193	pg/g	79.8	(25%-150%)
13C-169-HxCB		195	193	pg/g	101	(25%-150%)
13C-188-HpCB		93.8	193	pg/g	48.7	(25%-150%)
13C-189-HpCB		152	193	pg/g	78.8	(25%-150%)
13C-202-OcCB		103	193	pg/g	53.5	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**5963004**	**Date Collected:**	**04/04/2014 11:50**	**Matrix:**	**SOLID**
Client Sample:	**1668A Soil**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**1.9**
Client ID:	**CAWA-14-49274**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 19:13**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-10**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10.59 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		120	193	pg/g	62.3	(25%-150%)
13C-206-NoCB		130	193	pg/g	67.8	(25%-150%)
13C-208-NoCB		148	193	pg/g	77.0	(25%-150%)
13C-209-DeCB		132	193	pg/g	68.3	(25%-150%)
13C-28-TrCB		129	193	pg/g	66.9	(30%-135%)
13C-111-PeCB		153	193	pg/g	79.6	(30%-135%)
13C-178-HpCB		130	193	pg/g	67.5	(30%-135%)

Comments:

B **The target analyte was detected in the associated blank.**
C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
U **Analyte was analyzed for , but not detected above the specified detection limit.**

Quality Control Summary

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3140

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010216	LCS for batch 25700	13C-1-MoCB		43.0	(15%-140%)
		13C-3-MoCB		50.8	(15%-140%)
		13C-4-DiCB		54.9	(30%-140%)
		13C-15-DiCB		65.9	(30%-140%)
		13C-19-TrCB		57.6	(30%-140%)
		13C-37-TrCB		70.5	(30%-140%)
		13C-54-TeCB		51.4	(30%-140%)
		13C-77-TeCB		94.7	(30%-140%)
		13C-81-TeCB		96.1	(30%-140%)
		13C-104-PeCB		59.0	(30%-140%)
		13C-105-PeCB		78.4	(30%-140%)
		13C-114-PeCB		74.5	(30%-140%)
		13C-118-PeCB		78.1	(30%-140%)
		13C-123-PeCB		81.8	(30%-140%)
		13C-126-PeCB		85.2	(30%-140%)
		13C-155-HxCB		61.6	(30%-140%)
		13C-156-HxCB	C	83.9	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		80.5	(30%-140%)
		13C-169-HxCB		94.0	(30%-140%)
		13C-188-HpCB		49.9	(30%-140%)
		13C-189-HpCB		75.7	(30%-140%)
		13C-202-OcCB		57.7	(30%-140%)
		13C-205-OcCB		80.0	(30%-140%)
		13C-206-NoCB		75.1	(30%-140%)
		13C-208-NoCB		78.0	(30%-140%)
		13C-209-DeCB		72.8	(30%-140%)
		13C-28-TrCB		68.7	(40%-125%)
		13C-111-PeCB		77.5	(40%-125%)
		13C-178-HpCB		72.6	(40%-125%)
12010217	LCSD for batch 25700	13C-1-MoCB		32.9	(15%-140%)
		13C-3-MoCB		40.4	(15%-140%)
		13C-4-DiCB		43.2	(30%-140%)
		13C-15-DiCB		62.3	(30%-140%)
		13C-19-TrCB		50.7	(30%-140%)
		13C-37-TrCB		65.1	(30%-140%)
		13C-54-TeCB		45.7	(30%-140%)
		13C-77-TeCB		85.5	(30%-140%)
		13C-81-TeCB		87.4	(30%-140%)
		13C-104-PeCB		56.5	(30%-140%)
		13C-105-PeCB		76.0	(30%-140%)
		13C-114-PeCB		71.8	(30%-140%)
		13C-118-PeCB		74.5	(30%-140%)
		13C-123-PeCB		77.4	(30%-140%)
		13C-126-PeCB		87.9	(30%-140%)
		13C-155-HxCB		51.7	(30%-140%)
		13C-156-HxCB	C	67.9	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		69.7	(30%-140%)
		13C-169-HxCB		74.1	(30%-140%)
		13C-188-HpCB		48.8	(30%-140%)
		13C-189-HpCB		67.8	(30%-140%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3140

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010217	LCSD for batch 25700	13C-202-OcCB		55.9	(30%-140%)
		13C-205-OcCB		74.9	(30%-140%)
		13C-206-NoCB		70.6	(30%-140%)
		13C-208-NoCB		71.2	(30%-140%)
		13C-209-DeCB		69.1	(30%-140%)
		13C-28-TrCB		64.4	(40%-125%)
		13C-111-PeCB		72.6	(40%-125%)
		13C-178-HpCB		66.9	(40%-125%)
12010215	MB for batch 25700	13C-1-MoCB		30.6	(15%-150%)
		13C-3-MoCB		37.9	(15%-150%)
		13C-4-DiCB		41.5	(25%-150%)
		13C-15-DiCB		62.1	(25%-150%)
		13C-19-TrCB		50.6	(25%-150%)
		13C-37-TrCB		73.0	(25%-150%)
		13C-54-TeCB		46.4	(25%-150%)
		13C-77-TeCB		102	(25%-150%)
		13C-81-TeCB		104	(25%-150%)
		13C-104-PeCB		61.3	(25%-150%)
		13C-105-PeCB		87.5	(25%-150%)
		13C-114-PeCB		83.1	(25%-150%)
		13C-118-PeCB		86.4	(25%-150%)
		13C-123-PeCB		89.4	(25%-150%)
		13C-126-PeCB		96.8	(25%-150%)
		13C-155-HxCB		65.1	(25%-150%)
		13C-156-HxCB	C	96.0	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		94.7	(25%-150%)
		13C-169-HxCB		104	(25%-150%)
		13C-188-HpCB		53.2	(25%-150%)
		13C-189-HpCB		80.2	(25%-150%)
		13C-202-OcCB		64.4	(25%-150%)
		13C-205-OcCB		89.1	(25%-150%)
		13C-206-NoCB		84.5	(25%-150%)
		13C-208-NoCB		81.4	(25%-150%)
		13C-209-DeCB		81.6	(25%-150%)
		13C-28-TrCB		71.8	(30%-135%)
		13C-111-PeCB		86.3	(30%-135%)
		13C-178-HpCB		82.6	(30%-135%)
5963001	CAWA-14-49272	13C-1-MoCB		49.5	(15%-150%)
		13C-3-MoCB		57.0	(15%-150%)
		13C-4-DiCB		61.1	(25%-150%)
		13C-15-DiCB		72.6	(25%-150%)
		13C-19-TrCB		65.2	(25%-150%)
		13C-37-TrCB		74.4	(25%-150%)
		13C-54-TeCB		56.1	(25%-150%)
		13C-77-TeCB		102	(25%-150%)
		13C-81-TeCB		104	(25%-150%)
		13C-104-PeCB		62.5	(25%-150%)
		13C-105-PeCB		83.4	(25%-150%)
		13C-114-PeCB		80.1	(25%-150%)
		13C-118-PeCB		83.0	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3140

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5963001	CAWA-14-49272	13C-123-PeCB		87.1	(25%-150%)
		13C-126-PeCB		90.7	(25%-150%)
		13C-155-HxCB		62.1	(25%-150%)
		13C-156-HxCB	C	86.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		82.6	(25%-150%)
		13C-169-HxCB		105	(25%-150%)
		13C-188-HpCB		49.2	(25%-150%)
		13C-189-HpCB		77.7	(25%-150%)
		13C-202-OcCB		54.8	(25%-150%)
		13C-205-OcCB		84.4	(25%-150%)
		13C-206-NoCB		76.6	(25%-150%)
		13C-208-NoCB		77.4	(25%-150%)
		13C-209-DeCB		75.8	(25%-150%)
		13C-28-TrCB		75.4	(30%-135%)
		13C-111-PeCB		84.1	(30%-135%)
		13C-178-HpCB		75.7	(30%-135%)
12010218	CAWA-14-49272(5963001MS)	13C-1-MoCB		44.4	(15%-150%)
		13C-3-MoCB		51.2	(15%-150%)
		13C-4-DiCB		53.6	(25%-150%)
		13C-15-DiCB		67.5	(25%-150%)
		13C-19-TrCB		58.4	(25%-150%)
		13C-37-TrCB		66.6	(25%-150%)
		13C-54-TeCB		49.2	(25%-150%)
		13C-77-TeCB		93.2	(25%-150%)
		13C-81-TeCB		95.2	(25%-150%)
		13C-104-PeCB		55.7	(25%-150%)
		13C-105-PeCB		73.4	(25%-150%)
		13C-114-PeCB		73.4	(25%-150%)
		13C-118-PeCB		76.5	(25%-150%)
		13C-123-PeCB		79.1	(25%-150%)
		13C-126-PeCB		79.1	(25%-150%)
		13C-155-HxCB		57.4	(25%-150%)
		13C-156-HxCB	C	72.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		71.3	(25%-150%)
		13C-169-HxCB		89.2	(25%-150%)
		13C-188-HpCB		44.0	(25%-150%)
		13C-189-HpCB		67.8	(25%-150%)
		13C-202-OcCB		48.8	(25%-150%)
		13C-205-OcCB		76.0	(25%-150%)
		13C-206-NoCB		66.4	(25%-150%)
		13C-208-NoCB		71.2	(25%-150%)
		13C-209-DeCB		67.7	(25%-150%)
		13C-28-TrCB		69.7	(30%-135%)
		13C-111-PeCB		75.5	(30%-135%)
		13C-178-HpCB		69.0	(30%-135%)
12010219	CAWA-14-49272(5963001MSD)	13C-1-MoCB		52.8	(15%-150%)
		13C-3-MoCB		61.0	(15%-150%)
		13C-4-DiCB		66.0	(25%-150%)
		13C-15-DiCB		86.1	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3140

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12010219	CAWA-14-49272(5963001MSD)	13C-19-TrCB		70.8	(25%-150%)
		13C-37-TrCB		77.9	(25%-150%)
		13C-54-TeCB		54.8	(25%-150%)
		13C-77-TeCB		108	(25%-150%)
		13C-81-TeCB		111	(25%-150%)
		13C-104-PeCB		67.5	(25%-150%)
		13C-105-PeCB		91.1	(25%-150%)
		13C-114-PeCB		88.2	(25%-150%)
		13C-118-PeCB		91.8	(25%-150%)
		13C-123-PeCB		94.7	(25%-150%)
		13C-126-PeCB		98.0	(25%-150%)
		13C-155-HxCB		66.7	(25%-150%)
		13C-156-HxCB	C	86.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		85.2	(25%-150%)
		13C-169-HxCB		105	(25%-150%)
		13C-188-HpCB		51.0	(25%-150%)
		13C-189-HpCB		83.2	(25%-150%)
		13C-202-OcCB		59.5	(25%-150%)
		13C-205-OcCB		93.7	(25%-150%)
		13C-206-NoCB		77.6	(25%-150%)
		13C-208-NoCB		84.9	(25%-150%)
		13C-209-DeCB		86.0	(25%-150%)
		13C-28-TrCB		82.6	(30%-135%)
		13C-111-PeCB		91.4	(30%-135%)
		13C-178-HpCB		81.3	(30%-135%)
5963002	CAWA-14-49279	13C-1-MoCB		37.4	(15%-150%)
		13C-3-MoCB		47.0	(15%-150%)
		13C-4-DiCB		49.2	(25%-150%)
		13C-15-DiCB		68.9	(25%-150%)
		13C-19-TrCB		53.9	(25%-150%)
		13C-37-TrCB		63.2	(25%-150%)
		13C-54-TeCB		41.8	(25%-150%)
		13C-77-TeCB		86.2	(25%-150%)
		13C-81-TeCB		87.2	(25%-150%)
		13C-104-PeCB		54.2	(25%-150%)
		13C-105-PeCB		66.4	(25%-150%)
		13C-114-PeCB		68.4	(25%-150%)
		13C-118-PeCB		75.1	(25%-150%)
		13C-123-PeCB		78.1	(25%-150%)
		13C-126-PeCB		81.3	(25%-150%)
		13C-155-HxCB		53.8	(25%-150%)
		13C-156-HxCB	C	79.8	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		79.9	(25%-150%)
		13C-169-HxCB		85.4	(25%-150%)
		13C-188-HpCB		47.7	(25%-150%)
		13C-189-HpCB		70.8	(25%-150%)
		13C-202-OcCB		56.7	(25%-150%)
		13C-205-OcCB		56.1	(25%-150%)
		13C-206-NoCB		70.5	(25%-150%)
		13C-208-NoCB		72.0	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 2014-3140

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5963002	CAWA-14-49279	13C-209-DeCB		69.0	(25%-150%)
		13C-28-TrCB		67.9	(30%-135%)
		13C-111-PeCB		75.6	(30%-135%)
		13C-178-HpCB		67.5	(30%-135%)
5963004	CAWA-14-49274	13C-1-MoCB		45.9	(15%-150%)
		13C-3-MoCB		52.7	(15%-150%)
		13C-4-DiCB		58.0	(25%-150%)
		13C-15-DiCB		70.9	(25%-150%)
		13C-19-TrCB		60.3	(25%-150%)
		13C-37-TrCB		67.0	(25%-150%)
		13C-54-TeCB		46.6	(25%-150%)
		13C-77-TeCB		93.4	(25%-150%)
		13C-81-TeCB		94.6	(25%-150%)
		13C-104-PeCB		59.4	(25%-150%)
		13C-105-PeCB		79.5	(25%-150%)
		13C-114-PeCB		77.2	(25%-150%)
		13C-118-PeCB		78.8	(25%-150%)
		13C-123-PeCB		83.0	(25%-150%)
		13C-126-PeCB		87.9	(25%-150%)
		13C-155-HxCB		58.4	(25%-150%)
		13C-156-HxCB	C	80.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		79.8	(25%-150%)
		13C-169-HxCB		101	(25%-150%)
		13C-188-HpCB		48.7	(25%-150%)
		13C-189-HpCB		78.8	(25%-150%)
		13C-202-OcCB		53.5	(25%-150%)
		13C-205-OcCB		62.3	(25%-150%)
		13C-206-NoCB		67.8	(25%-150%)
		13C-208-NoCB		77.0	(25%-150%)
		13C-209-DeCB		68.3	(25%-150%)
		13C-28-TrCB		66.9	(30%-135%)
		13C-111-PeCB		79.6	(30%-135%)
		13C-178-HpCB		67.5	(30%-135%)
5963003	CAWA-14-49273	13C-1-MoCB		36.1	(15%-150%)
		13C-3-MoCB		41.2	(15%-150%)
		13C-4-DiCB		40.6	(25%-150%)
		13C-15-DiCB		64.1	(25%-150%)
		13C-19-TrCB		53.0	(25%-150%)
		13C-37-TrCB		70.0	(25%-150%)
		13C-54-TeCB		50.6	(25%-150%)
		13C-77-TeCB		72.6	(25%-150%)
		13C-81-TeCB		75.2	(25%-150%)
		13C-104-PeCB		56.9	(25%-150%)
		13C-105-PeCB		63.5	(25%-150%)
		13C-114-PeCB		61.7	(25%-150%)
		13C-118-PeCB		65.4	(25%-150%)
		13C-123-PeCB		68.3	(25%-150%)
		13C-126-PeCB		59.2	(25%-150%)
		13C-155-HxCB		72.0	(25%-150%)
		13C-156-HxCB	C	64.4	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 2014-3140

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
5963003	CAWA-14-49273	13C-157-HxCB	C156L		
		13C-167-HxCB		63.1	(25%-150%)
		13C-169-HxCB		74.4	(25%-150%)
		13C-188-HpCB		62.2	(25%-150%)
		13C-189-HpCB		66.5	(25%-150%)
		13C-202-OcCB		59.2	(25%-150%)
		13C-205-OcCB		76.0	(25%-150%)
		13C-206-NoCB		70.8	(25%-150%)
		13C-208-NoCB		67.6	(25%-150%)
		13C-209-DeCB		69.3	(25%-150%)
		13C-28-TrCB		64.6	(30%-135%)
		13C-111-PeCB		69.9	(30%-135%)
		13C-178-HpCB		70.5	(30%-135%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3140**
Client ID: **LCS for batch 25700**
Lab Sample ID: **12010216**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample**
Matrix: **SOLID**
Analysis Date: **04/26/2014 10:20**
Dilution: **1**
Prep Batch ID: **25700**
Batch ID: **25702**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS	PCB-1	50.0		45.0	90.1	50-150
2051-62-9	LCS	PCB-3	50.0		51.7	103	50-150
13029-08-8	LCS	PCB-4	50.0		42.1	84.2	50-150
2050-68-2	LCS	PCB-15	50.0		53.6	107	50-150
38444-73-4	LCS	PCB-19	50.0		49.9	99.9	50-150
38444-90-5	LCS	PCB-37	50.0		45.5	91	50-150
15968-05-5	LCS	PCB-54	100		103	103	50-150
32598-13-3	LCS	PCB-77	100		91.4	91.4	50-150
70362-50-4	LCS	PCB-81	100		101	101	50-150
56558-16-8	LCS	PCB-104	100		105	105	50-150
32598-14-4	LCS	PCB-105	100		111	111	50-150
74472-37-0	LCS	PCB-114	100		103	103	50-150
31508-00-6	LCS	PCB-118	100		94.7	94.7	50-150
65510-44-3	LCS	PCB-123	100		90.2	90.2	50-150
57465-28-8	LCS	PCB-126	100		105	105	50-150
33979-03-2	LCS	PCB-155	100		105	105	50-150
38380-08-4	LCS	PCB-156/157	200	C	224	112	50-150
52663-72-6	LCS	PCB-167	100		118	118	50-150
32774-16-6	LCS	PCB-169	100		104	104	50-150
74487-85-7	LCS	PCB-188	100		109	109	50-150
39635-31-9	LCS	PCB-189	100		99.4	99.4	50-150
2136-99-4	LCS	PCB-202	150		159	106	50-150
74472-53-0	LCS	PCB-205	150		140	93.6	50-150
40186-72-9	LCS	PCB-206	150		146	97	50-150
52663-77-1	LCS	PCB-208	150		160	106	50-150
2051-24-3	LCS	PCB-209	150		144	95.9	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2014-3140**
Client ID: **LCSD for batch 25700**
Lab Sample ID: **12010217**
Instrument: **HRP791**
Analyst: **MJC**

Sample Type: **Laboratory Control Sample Duplicate**
Matrix: **SOLID**
Analysis Date: **04/26/2014 11:27**
Dilution: **1**
Prep Batch ID: **25700**
Batch ID: **25702**

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	PCB-1	50.0		47.4	94.7	50-150	5.04	0-20
2051-62-9	LCSD	PCB-3	50.0		50.6	101	50-150	2.25	0-20
13029-08-8	LCSD	PCB-4	50.0		44.8	89.5	50-150	6.14	0-20
2050-68-2	LCSD	PCB-15	50.0		54.6	109	50-150	1.78	0-20
38444-73-4	LCSD	PCB-19	50.0		51.1	102	50-150	2.27	0-20
38444-90-5	LCSD	PCB-37	50.0		45.6	91.3	50-150	0.246	0-20
15968-05-5	LCSD	PCB-54	100		101	101	50-150	1.73	0-20
32598-13-3	LCSD	PCB-77	100		92.1	92.1	50-150	0.730	0-20
70362-50-4	LCSD	PCB-81	100		100	100	50-150	0.756	0-20
56558-16-8	LCSD	PCB-104	100		105	105	50-150	0.0267	0-20
32598-14-4	LCSD	PCB-105	100		109	109	50-150	1.79	0-20
74472-37-0	LCSD	PCB-114	100		104	104	50-150	0.364	0-20
31508-00-6	LCSD	PCB-118	100		93.8	93.8	50-150	1.03	0-20
65510-44-3	LCSD	PCB-123	100		99.2	99.2	50-150	9.56	0-20
57465-28-8	LCSD	PCB-126	100		105	105	50-150	0.0531	0-20
33979-03-2	LCSD	PCB-155	100		113	113	50-150	7.08	0-20
38380-08-4	LCSD	PCB-156/157	200	C	220	110	50-150	1.62	0-20
52663-72-6	LCSD	PCB-167	100		118	118	50-150	0.278	0-20
32774-16-6	LCSD	PCB-169	100		102	102	50-150	1.11	0-20
74487-85-7	LCSD	PCB-188	100		109	109	50-150	0.416	0-20
39635-31-9	LCSD	PCB-189	100		100	100	50-150	0.840	0-20
2136-99-4	LCSD	PCB-202	150		163	109	50-150	2.62	0-20
74472-53-0	LCSD	PCB-205	150		139	92.4	50-150	1.39	0-20
40186-72-9	LCSD	PCB-206	150		145	96.8	50-150	0.297	0-20
52663-77-1	LCSD	PCB-208	150		157	105	50-150	1.29	0-20
2051-24-3	LCSD	PCB-209	150		143	95.2	50-150	0.748	0-20

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3140**	**Sample Type:**	**Matrix Spike**	
Client ID:	**CAWA-14-49272(5963001MS)**	**Matrix:**	**SOLID**	
Lab Sample ID:	**12010218**	**%Moisture:**	**18.5**	
Instrument:	**HRP791**	**Analysis Date:**	**04/26/2014 14:46**	**Dilution: 1**
Analyst:	**MJC**	**Prep Batch ID:**	**25700**	
		Batch ID:	**25702**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	MS	PCB-1	48.1	U	45.5	94.5	50-150
2051-62-9	MS	PCB-3	48.1	J	50.0	100	50-150
13029-08-8	MS	PCB-4	48.1	U	45.9	95.3	50-150
2050-68-2	MS	PCB-15	48.1	J	57.1	113	50-150
38444-73-4	MS	PCB-19	48.1	U	49.5	103	50-150
38444-90-5	MS	PCB-37	48.1	J	49.6	89.4	50-150
15968-05-5	MS	PCB-54	96.3	U	98.8	103	50-150
32598-13-3	MS	PCB-77	96.3		95.5	90.9	50-150
70362-50-4	MS	PCB-81	96.3	U	97.5	101	50-150
56558-16-8	MS	PCB-104	96.3	U	101	105	50-150
32598-14-4	MS	PCB-105	96.3		173	121	50-150
74472-37-0	MS	PCB-114	96.3		102	104	50-150
31508-00-6	MS	PCB-118	96.3		259	126	50-150
65510-44-3	MS	PCB-123	96.3		92.5	93.4	50-150
57465-28-8	MS	PCB-126	96.3		102	103	50-150
33979-03-2	MS	PCB-155	96.3	U	109	112	50-150
38380-08-4	MS	PCB-156/157	193	C	279	114	50-150
52663-72-6	MS	PCB-167	96.3		144	118	50-150
32774-16-6	MS	PCB-169	96.3	U	98.9	103	50-150
74487-85-7	MS	PCB-188	96.3	U	105	109	50-150
39635-31-9	MS	PCB-189	96.3		110	101	50-150
2136-99-4	MS	PCB-202	144		183	105	50-150
74472-53-0	MS	PCB-205	144		142	92.3	50-150
40186-72-9	MS	PCB-206	144		176	96.9	50-150
52663-77-1	MS	PCB-208	144		160	105	50-150
2051-24-3	MS	PCB-209	144		152	94.4	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number:	**2014-3140**	**Sample Type:**	**Matrix Spike Duplicate**	
Client ID:	**CAWA-14-49272(5963001MSD)**	**Matrix:**	**SOLID**	
Lab Sample ID:	**12010219**	**%Moisture:**	**18.5**	
Instrument:	**HRP791**	**Analysis Date:**	**04/26/2014 15:53**	**Dilution: 1**
Analyst:	**MJC**	**Prep Batch ID:**	**25700**	
		Batch ID:	**25702**	

CAS No.		Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	MSD	PCB-1	48.1	U	43.1	89.6	50-150	5.34	0-25
2051-62-9	MSD	PCB-3	48.1	J	49.2	98.5	50-150	1.69	0-25
13029-08-8	MSD	PCB-4	48.1	U	45.8	95.2	50-150	0.176	0-25
2050-68-2	MSD	PCB-15	48.1	J	60.1	119	50-150	5.16	0-25
38444-73-4	MSD	PCB-19	48.1	U	50.9	106	50-150	2.69	0-25
38444-90-5	MSD	PCB-37	48.1	J	63.9	119	50-150	25.3 *	0-25
15968-05-5	MSD	PCB-54	96.2	U	95.5	99.3	50-150	3.43	0-25
32598-13-3	MSD	PCB-77	96.2		99.3	94.9	50-150	3.89	0-25
70362-50-4	MSD	PCB-81	96.2	U	93.4	97.1	50-150	4.29	0-25
56558-16-8	MSD	PCB-104	96.2	U	95.2	98.9	50-150	5.58	0-25
32598-14-4	MSD	PCB-105	96.2		186	135	50-150	7.10	0-25
74472-37-0	MSD	PCB-114	96.2		95.7	97.5	50-150	6.65	0-25
31508-00-6	MSD	PCB-118	96.2		259	126	50-150	0.00799	0-25
65510-44-3	MSD	PCB-123	96.2		93.7	94.8	50-150	1.27	0-25
57465-28-8	MSD	PCB-126	96.2		98.1	99.8	50-150	3.55	0-25
33979-03-2	MSD	PCB-155	96.2	U	104	108	50-150	4.11	0-25
38380-08-4	MSD	PCB-156/157	192	C	257	102	50-150	8.52	0-25
52663-72-6	MSD	PCB-167	96.2		134	109	50-150	6.78	0-25
32774-16-6	MSD	PCB-169	96.2	U	93.5	97.2	50-150	5.61	0-25
74487-85-7	MSD	PCB-188	96.2	U	99.8	104	50-150	4.88	0-25
39635-31-9	MSD	PCB-189	96.2		103	95.1	50-150	5.84	0-25
2136-99-4	MSD	PCB-202	144		173	98.6	50-150	5.47	0-25
74472-53-0	MSD	PCB-205	144		133	86.7	50-150	5.95	0-25
40186-72-9	MSD	PCB-206	144		167	90.5	50-150	5.42	0-25
52663-77-1	MSD	PCB-208	144		154	101	50-150	3.64	0-25
2051-24-3	MSD	PCB-209	144		143	88.8	50-150	5.57	0-25

Method Blank Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Matrix:**	**SOLID**
Client ID:	**MB for batch 25700**	**Instrument ID:**	**HRP791**	**Data File:**	**c25apr14a_3-4**
Lab Sample ID:	**12010215**	**Prep Date:**	**21-APR-14**	**Analyzed:**	**04/26/14 12:33**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 25700	12010216	c25apr14a_3-2	04/26/14	1020
02	LCSD for batch 25700	12010217	c25apr14a_3-3	04/26/14	1127
03	CAWA-14-49272	5963001	c25apr14a_3-5	04/26/14	1340
04	CAWA-14-49272(5963001MS)	12010218	c25apr14a_3-6	04/26/14	1446
05	CAWA-14-49272(5963001MSD)	12010219	c25apr14a_3-7	04/26/14	1553
06	CAWA-14-49279	5963002	c25apr14a_3-8	04/26/14	1659
07	CAWA-14-49274	5963004	c25apr14a_3-10	04/26/14	1913
08	CAWA-14-49273	5963003	c30apr14a-5	04/30/14	1609

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010215**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**MB for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 12:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1	U	1	1	pg/g	1.00	5.00
2051-61-8	PCB-2	U	1	1	pg/g	1.00	2.00
2051-62-9	PCB-3	U	1	1	pg/g	1.00	2.00
13029-08-8	PCB-4	U	1	1	pg/g	1.00	4.00
16605-91-7	PCB-5	U	1	1	pg/g	1.00	4.00
25569-80-6	PCB-6	U	1	1	pg/g	1.00	2.00
33284-50-3	PCB-7	U	1	1	pg/g	1.00	4.00
34883-43-7	PCB-8	U	1	1	pg/g	1.00	20.0
34883-39-1	PCB-9	U	1	1	pg/g	1.00	2.00
33146-45-1	PCB-10	U	1	1	pg/g	1.00	4.00
2050-67-1	PCB-11	U	2.46	2	pg/g	2.00	50.0
PCB-12/13	PCB-13/12	CU	1	1	pg/g	1.00	8.00
34883-41-5	PCB-14	U	1	1	pg/g	1.00	4.00
2050-68-2	PCB-15	U	1	1	pg/g	1.00	20.0
38444-78-9	PCB-16	U	1	1	pg/g	1.00	4.00
37680-66-3	PCB-17	U	.666	.666	pg/g	0.666	4.00
PCB-18/30	PCB-18/30	CU	1.33	1.33	pg/g	1.33	4.00
38444-73-4	PCB-19	U	.666	.666	pg/g	0.666	2.00
PCB-20/28	PCB-20/28	CU	1.33	1.33	pg/g	1.33	20.0
PCB-21/33	PCB-21/33	CU	1.33	1.33	pg/g	1.33	8.00
38444-85-8	PCB-22	U	.666	.666	pg/g	0.666	4.00
55720-44-0	PCB-23	U	.666	.666	pg/g	0.666	2.00
55702-45-9	PCB-24	U	.666	.666	pg/g	0.666	2.00
55712-37-3	PCB-25	U	.666	.666	pg/g	0.666	2.00
PCB-26/29	PCB-26/29	CU	1.33	1.33	pg/g	1.33	4.00
38444-76-7	PCB-27	U	.666	.666	pg/g	0.666	2.00
16606-02-3	PCB-31	U	.666	.666	pg/g	0.666	10.0
38444-77-8	PCB-32	U	.666	.666	pg/g	0.666	2.00
37680-68-5	PCB-34	U	.666	.666	pg/g	0.666	2.00
37680-69-6	PCB-35	U	.666	.666	pg/g	0.666	4.00
38444-87-0	PCB-36	U	.666	.666	pg/g	0.666	4.00
38444-90-5	PCB-37	U	.666	.666	pg/g	0.666	20.0

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010215**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**MB for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 12:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
53555-66-1	PCB-38	U	.666	.666	pg/g	0.666	2.00
38444-88-1	PCB-39	U	.666	.666	pg/g	0.666	4.00
PCB-40/71	PCB-40/71	CU	1.33	1.33	pg/g	1.33	4.00
52663-59-9	PCB-41	U	1.33	1.33	pg/g	1.33	2.00
36559-22-5	PCB-42	U	1	1	pg/g	1.00	2.00
70362-46-8	PCB-43	U	1.33	1.33	pg/g	1.33	4.00
PCB-44/47/65	PCB-44/65/47	CU	3.34	3.34	pg/g	3.34	6.00
PCB-45/51	PCB-45/51	CU	1.33	1.33	pg/g	1.33	4.00
41464-47-5	PCB-46	U	.666	.666	pg/g	0.666	2.00
70362-47-9	PCB-48	U	.666	.666	pg/g	0.666	2.00
PCB-49/69	PCB-69/49	CU	1.33	1.33	pg/g	1.33	4.00
PCB-50/53	PCB-50/53	CU	1.33	1.33	pg/g	1.33	4.00
35693-99-3	PCB-52	U	1.33	1.33	pg/g	1.33	2.00
15968-05-5	PCB-54	U	.666	.666	pg/g	0.666	2.00
74338-24-2	PCB-55	U	1	1	pg/g	1.00	2.00
41464-43-1	PCB-56	U	.666	.666	pg/g	0.666	4.00
70424-67-8	PCB-57	U	1	1	pg/g	1.00	2.00
41464-49-7	PCB-58	U	1	1	pg/g	1.00	2.00
PCB-59/62/75	PCB-59/62/75	CU	2	2	pg/g	2.00	6.00
33025-41-1	PCB-60	U	.666	.666	pg/g	0.666	4.00
PCB-61-76	PCB-61/76/70/74	CU	2.66	2.66	pg/g	2.66	8.00
74472-34-7	PCB-63	U	.666	.666	pg/g	0.666	5.00
52663-58-8	PCB-64	U	1	1	pg/g	1.00	2.00
32598-10-0	PCB-66	U	1	1	pg/g	1.00	5.00
73575-53-8	PCB-67	U	1	1	pg/g	1.00	2.00
73575-52-7	PCB-68	U	.666	.666	pg/g	0.666	2.00
41464-42-0	PCB-72	U	.666	.666	pg/g	0.666	4.00
74338-23-1	PCB-73	U	1	1	pg/g	1.00	2.00
32598-13-3	PCB-77	U	.666	.666	pg/g	0.666	2.00
70362-49-1	PCB-78	U	.666	.666	pg/g	0.666	2.00
41464-48-6	PCB-79	U	.666	.666	pg/g	0.666	4.00
33284-52-5	PCB-80	U	.666	.666	pg/g	0.666	4.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010215**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**MB for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 12:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
70362-50-4	PCB-81	U	.666	.666	pg/g	0.666	2.00
52663-62-4	PCB-82	U	1	1	pg/g	1.00	5.00
60145-20-2	PCB-83	U	1	1	pg/g	1.00	2.00
52663-60-2	PCB-84	U	1	1	pg/g	1.00	2.00
PCB-85-117	PCB-117/116/85	CU	2	2	pg/g	2.00	6.00
PCB-86-125	PCB-86/87/97/109/119/125	CU	4	4	pg/g	4.00	12.0
PCB-88/91	PCB-88/91	CU	1.33	1.33	pg/g	1.33	4.00
73575-57-2	PCB-89	U	.666	.666	pg/g	0.666	2.00
PCB-90-113	PCB-113/90/101	CU	2	2	pg/g	2.00	6.00
52663-61-3	PCB-92	U	1	1	pg/g	1.00	2.00
PCB-93/100	PCB-93/100	CU	2	2	pg/g	2.00	4.00
73575-55-0	PCB-94	U	.666	.666	pg/g	0.666	2.00
38379-99-6	PCB-95	U	1.33	1.33	pg/g	1.33	4.00
73575-54-9	PCB-96	U	.666	.666	pg/g	0.666	2.00
PCB-98/102	PCB-102/98	CU	1.33	1.33	pg/g	1.33	4.00
38380-01-7	PCB-99	U	1.33	1.33	pg/g	1.33	2.00
60145-21-3	PCB-103	U	.666	.666	pg/g	0.666	5.00
56558-16-8	PCB-104	U	.666	.666	pg/g	0.666	2.00
32598-14-4	PCB-105	U	1	1	pg/g	1.00	2.00
70424-69-0	PCB-106	U	1	1	pg/g	1.00	2.00
70424-68-9	PCB-107	U	.666	.666	pg/g	0.666	4.00
PCB-108/124	PCB-108/124	CU	1.33	1.33	pg/g	1.33	4.00
PCB-110/115	PCB-110/115	CU	2.66	2.66	pg/g	2.66	4.00
39635-32-0	PCB-111	U	.666	.666	pg/g	0.666	2.00
74472-36-9	PCB-112	U	1.33	1.33	pg/g	1.33	2.00
74472-37-0	PCB-114	U	.666	.666	pg/g	0.666	2.00
31508-00-6	PCB-118	U	1.33	1.33	pg/g	1.33	4.00
68194-12-7	PCB-120	U	.666	.666	pg/g	0.666	2.00
56558-18-0	PCB-121	U	.666	.666	pg/g	0.666	2.00
76842-07-4	PCB-122	U	.666	.666	pg/g	0.666	6.90
65510-44-3	PCB-123	U	.666	.666	pg/g	0.666	2.00
57465-28-8	PCB-126	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010215**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**MB for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 12:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
39635-33-1	PCB-127	U	.666	.666	pg/g	0.666	2.00
PCB-128/166	PCB-128/166	CU	1.33	1.33	pg/g	1.33	4.00
PCB-129-163	PCB-138/163/129	CU	2.66	2.66	pg/g	2.66	6.00
52663-66-8	PCB-130	U	1	1	pg/g	1.00	2.00
61798-70-7	PCB-131	U	.666	.666	pg/g	0.666	2.00
38380-05-1	PCB-132	U	1	1	pg/g	1.00	2.00
35694-04-3	PCB-133	U	.666	.666	pg/g	0.666	2.00
52704-70-8	PCB-134	U	1.33	1.33	pg/g	1.33	2.00
PCB-135/151	PCB-151/135	CU	1.33	1.33	pg/g	1.33	4.00
38411-22-2	PCB-136	U	.666	.666	pg/g	0.666	2.00
35694-06-5	PCB-137	U	1.33	1.33	pg/g	1.33	2.00
PCB-139/140	PCB-139/140	CU	1.33	1.33	pg/g	1.33	4.00
52712-04-6	PCB-141	U	1.33	1.33	pg/g	1.33	4.00
41411-61-4	PCB-142	U	.666	.666	pg/g	0.666	2.00
68194-15-0	PCB-143	U	1.33	1.33	pg/g	1.33	2.00
68194-14-9	PCB-144	U	.666	.666	pg/g	0.666	2.00
74472-40-5	PCB-145	U	.666	.666	pg/g	0.666	2.00
51908-16-8	PCB-146	U	1	1	pg/g	1.00	2.00
PCB-147/149	PCB-147/149	CU	2	2	pg/g	2.00	8.00
74472-41-6	PCB-148	U	.666	.666	pg/g	0.666	2.00
68194-08-1	PCB-150	U	1	1	pg/g	1.00	2.00
68194-09-2	PCB-152	U	.666	.666	pg/g	0.666	2.00
PCB-153/168	PCB-153/168	CU	2	2	pg/g	2.00	8.00
60145-22-4	PCB-154	U	.666	.666	pg/g	0.666	2.00
33979-03-2	PCB-155	U	.666	.666	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	CU	1.33	1.33	pg/g	1.33	4.00
74472-42-7	PCB-158	U	.666	.666	pg/g	0.666	2.00
39635-35-3	PCB-159	U	.666	.666	pg/g	0.666	2.00
41411-62-5	PCB-160	U	.666	.666	pg/g	0.666	2.00
74472-43-8	PCB-161	U	1	1	pg/g	1.00	2.00
39635-34-2	PCB-162	U	1	1	pg/g	1.00	2.00
74472-45-0	PCB-164	U	.666	.666	pg/g	0.666	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010215**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**MB for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 12:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-46-1	PCB-165	U	.666	.666	pg/g	0.666	2.00
52663-72-6	PCB-167	U	.666	.666	pg/g	0.666	2.00
32774-16-6	PCB-169	U	1	1	pg/g	1.00	2.00
35065-30-6	PCB-170	U	.666	.666	pg/g	0.666	2.00
PCB-171/173	PCB-173/171	CU	1.33	1.33	pg/g	1.33	4.00
52663-74-8	PCB-172	U	1	1	pg/g	1.00	2.00
38411-25-5	PCB-174	U	1.33	1.33	pg/g	1.33	2.00
40186-70-7	PCB-175	U	1	1	pg/g	1.00	2.00
52663-65-7	PCB-176	U	.666	.666	pg/g	0.666	2.00
52663-70-4	PCB-177	U	1	1	pg/g	1.00	2.00
52663-67-9	PCB-178	U	1.33	1.33	pg/g	1.33	2.00
52663-64-6	PCB-179	U	.666	.666	pg/g	0.666	2.00
PCB-180/193	PCB-193/180	CU	2	2	pg/g	2.00	4.00
74472-47-2	PCB-181	U	1	1	pg/g	1.00	2.00
60145-23-5	PCB-182	U	.666	.666	pg/g	0.666	2.00
PCB-183/185	PCB-183/185	CU	1.33	1.33	pg/g	1.33	4.00
74472-48-3	PCB-184	U	.666	.666	pg/g	0.666	2.00
74472-49-4	PCB-186	U	.666	.666	pg/g	0.666	2.00
52663-68-0	PCB-187	U	1	1	pg/g	1.00	2.00
74487-85-7	PCB-188	U	.666	.666	pg/g	0.666	2.00
39635-31-9	PCB-189	U	.666	.666	pg/g	0.666	2.00
41411-64-7	PCB-190	U	1	1	pg/g	1.00	2.00
74472-50-7	PCB-191	U	.666	.666	pg/g	0.666	2.00
74472-51-8	PCB-192	U	.666	.666	pg/g	0.666	2.00
35694-08-7	PCB-194	U	.666	.666	pg/g	0.666	2.00
52663-78-2	PCB-195	U	1	1	pg/g	1.00	2.00
42740-50-1	PCB-196	U	.666	.666	pg/g	0.666	2.00
PCB-197/200	PCB-197/200	CU	1.33	1.33	pg/g	1.33	4.00
PCB-198/199	PCB-198/199	CU	1.33	1.33	pg/g	1.33	4.00
40186-71-8	PCB-201	U	.666	.666	pg/g	0.666	2.00
2136-99-4	PCB-202	U	1	1	pg/g	1.00	2.00
52663-76-0	PCB-203	U	1.33	1.33	pg/g	1.33	2.00

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010215**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**MB for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 12:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
74472-52-9	PCB-204	U	1	1	pg/g	1.00	2.00
74472-53-0	PCB-205	U	.666	.666	pg/g	0.666	2.00
40186-72-9	PCB-206	U	1	1	pg/g	1.00	2.00
52663-79-3	PCB-207	U	.666	.666	pg/g	0.666	2.00
52663-77-1	PCB-208	U	.666	.666	pg/g	0.666	2.00
2051-24-3	PCB-209	U	.666	.666	pg/g	0.666	2.00
27323-18-8	Total Mono PCBs	U	0	0	pg/g		
25512-42-9	Total Di PCBs	U	2.46	0	pg/g		
25323-68-6	Total Tri PCBs	U	0	0	pg/g		
26914-33-0	Total Tetra PCBs	U	0	0	pg/g		
25429-29-2	Total Penta PCBs	U	0	0	pg/g		
26601-64-9	Total Hexa PCBs	U	0	0	pg/g		
28655-71-2	Total Hepta PCBs	U	0	0	pg/g		
55722-26-4	Total Octa PCBs	U	0	0	pg/g		
53742-07-7	Total Nona PCBs	U	0	0	pg/g		
DECACB(Tot)	Total Deca PCB	U	0	0	pg/g		
1336-36-3	Total PCB Congeners	U	2.46	0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		61.3	200	pg/g	30.6	(15%-150%)
13C-3-MoCB		75.7	200	pg/g	37.9	(15%-150%)
13C-4-DiCB		82.9	200	pg/g	41.5	(25%-150%)
13C-15-DiCB		124	200	pg/g	62.1	(25%-150%)
13C-19-TrCB		101	200	pg/g	50.6	(25%-150%)
13C-37-TrCB		146	200	pg/g	73.0	(25%-150%)
13C-54-TeCB		92.9	200	pg/g	46.4	(25%-150%)
13C-77-TeCB		203	200	pg/g	102	(25%-150%)
13C-81-TeCB		207	200	pg/g	104	(25%-150%)
13C-104-PeCB		123	200	pg/g	61.3	(25%-150%)
13C-105-PeCB		175	200	pg/g	87.5	(25%-150%)
13C-114-PeCB		166	200	pg/g	83.1	(25%-150%)
13C-118-PeCB		173	200	pg/g	86.4	(25%-150%)
13C-123-PeCB		179	200	pg/g	89.4	(25%-150%)
13C-126-PeCB		194	200	pg/g	96.8	(25%-150%)
13C-155-HxCB		130	200	pg/g	65.1	(25%-150%)
13C-156-HxCB	C	384	400	pg/g	96.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		189	200	pg/g	94.7	(25%-150%)
13C-169-HxCB		208	200	pg/g	104	(25%-150%)
13C-188-HpCB		106	200	pg/g	53.2	(25%-150%)
13C-189-HpCB		160	200	pg/g	80.2	(25%-150%)
13C-202-OcCB		129	200	pg/g	64.4	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010215**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**MB for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 12:33**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-4**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-205-OcCB		178	200	pg/g	89.1	(25%-150%)
13C-206-NoCB		169	200	pg/g	84.5	(25%-150%)
13C-208-NoCB		163	200	pg/g	81.4	(25%-150%)
13C-209-DeCB		163	200	pg/g	81.6	(25%-150%)
13C-28-TrCB		144	200	pg/g	71.8	(30%-135%)
13C-111-PeCB		173	200	pg/g	86.3	(30%-135%)
13C-178-HpCB		165	200	pg/g	82.6	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

U **Analyte was analyzed for , but not detected above the specified detection limit.**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010216**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**LCS for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 10:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-2**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		45.3	45	pg/g	1.00	5.00
2051-62-9	PCB-3		51.9	51.7	pg/g	1.00	2.00
13029-08-8	PCB-4		42.9	42.1	pg/g	1.00	4.00
2050-68-2	PCB-15		54.3	53.6	pg/g	1.00	20.0
38444-73-4	PCB-19		50.2	49.9	pg/g	0.666	2.00
38444-90-5	PCB-37		45.8	45.5	pg/g	0.666	20.0
15968-05-5	PCB-54		103	103	pg/g	0.666	2.00
32598-13-3	PCB-77		91.7	91.4	pg/g	0.666	2.00
70362-50-4	PCB-81		101	101	pg/g	0.666	2.00
56558-16-8	PCB-104		105	105	pg/g	0.666	2.00
32598-14-4	PCB-105		112	111	pg/g	1.00	2.00
74472-37-0	PCB-114		103	103	pg/g	0.666	2.00
31508-00-6	PCB-118		96.6	94.7	pg/g	1.33	4.00
65510-44-3	PCB-123		90.5	90.2	pg/g	0.666	2.00
57465-28-8	PCB-126		106	105	pg/g	0.666	2.00
33979-03-2	PCB-155		105	105	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	224	224	pg/g	1.33	4.00
52663-72-6	PCB-167		118	118	pg/g	0.666	2.00
32774-16-6	PCB-169		104	104	pg/g	1.00	2.00
74487-85-7	PCB-188		109	109	pg/g	0.666	2.00
39635-31-9	PCB-189		99.6	99.4	pg/g	0.666	2.00
2136-99-4	PCB-202		159	159	pg/g	1.00	2.00
74472-53-0	PCB-205		141	140	pg/g	0.666	2.00
40186-72-9	PCB-206		146	146	pg/g	1.00	2.00
52663-77-1	PCB-208		160	160	pg/g	0.666	2.00
2051-24-3	PCB-209		144	144	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		85.9	200	pg/g	43.0	(15%-140%)
13C-3-MoCB		102	200	pg/g	50.8	(15%-140%)
13C-4-DiCB		110	200	pg/g	54.9	(30%-140%)
13C-15-DiCB		132	200	pg/g	65.9	(30%-140%)
13C-19-TrCB		115	200	pg/g	57.6	(30%-140%)
13C-37-TrCB		141	200	pg/g	70.5	(30%-140%)
13C-54-TeCB		103	200	pg/g	51.4	(30%-140%)
13C-77-TeCB		189	200	pg/g	94.7	(30%-140%)
13C-81-TeCB		192	200	pg/g	96.1	(30%-140%)
13C-104-PeCB		118	200	pg/g	59.0	(30%-140%)
13C-105-PeCB		157	200	pg/g	78.4	(30%-140%)
13C-114-PeCB		149	200	pg/g	74.5	(30%-140%)
13C-118-PeCB		156	200	pg/g	78.1	(30%-140%)
13C-123-PeCB		164	200	pg/g	81.8	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010216**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**LCS for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 10:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-2**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		170	200	pg/g	85.2	(30%-140%)
13C-155-HxCB		123	200	pg/g	61.6	(30%-140%)
13C-156-HxCB	C	336	400	pg/g	83.9	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		161	200	pg/g	80.5	(30%-140%)
13C-169-HxCB		188	200	pg/g	94.0	(30%-140%)
13C-188-HpCB		99.7	200	pg/g	49.9	(30%-140%)
13C-189-HpCB		151	200	pg/g	75.7	(30%-140%)
13C-202-OcCB		115	200	pg/g	57.7	(30%-140%)
13C-205-OcCB		160	200	pg/g	80.0	(30%-140%)
13C-206-NoCB		150	200	pg/g	75.1	(30%-140%)
13C-208-NoCB		156	200	pg/g	78.0	(30%-140%)
13C-209-DeCB		146	200	pg/g	72.8	(30%-140%)
13C-28-TrCB		137	200	pg/g	68.7	(40%-125%)
13C-111-PeCB		155	200	pg/g	77.5	(40%-125%)
13C-178-HpCB		145	200	pg/g	72.6	(40%-125%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

J **Value is estimated**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010217**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**LCSD for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 11:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-3**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		47.6	47.4	pg/g	1.00	5.00
2051-62-9	PCB-3		50.8	50.6	pg/g	1.00	2.00
13029-08-8	PCB-4		45.6	44.8	pg/g	1.00	4.00
2050-68-2	PCB-15		55.3	54.6	pg/g	1.00	20.0
38444-73-4	PCB-19		51.3	51.1	pg/g	0.666	2.00
38444-90-5	PCB-37		45.9	45.6	pg/g	0.666	20.0
15968-05-5	PCB-54		101	101	pg/g	0.666	2.00
32598-13-3	PCB-77		92.3	92.1	pg/g	0.666	2.00
70362-50-4	PCB-81		101	100	pg/g	0.666	2.00
56558-16-8	PCB-104		105	105	pg/g	0.666	2.00
32598-14-4	PCB-105		110	109	pg/g	1.00	2.00
74472-37-0	PCB-114		104	104	pg/g	0.666	2.00
31508-00-6	PCB-118		95.6	93.8	pg/g	1.33	4.00
65510-44-3	PCB-123		99.5	99.2	pg/g	0.666	2.00
57465-28-8	PCB-126		106	105	pg/g	0.666	2.00
33979-03-2	PCB-155		113	113	pg/g	0.666	2.00
PCB-156/157	PCB-156/157	C	221	220	pg/g	1.33	4.00
52663-72-6	PCB-167		118	118	pg/g	0.666	2.00
32774-16-6	PCB-169		103	102	pg/g	1.00	2.00
74487-85-7	PCB-188		110	109	pg/g	0.666	2.00
39635-31-9	PCB-189		100	100	pg/g	0.666	2.00
2136-99-4	PCB-202		163	163	pg/g	1.00	2.00
74472-53-0	PCB-205		139	139	pg/g	0.666	2.00
40186-72-9	PCB-206		146	145	pg/g	1.00	2.00
52663-77-1	PCB-208		158	157	pg/g	0.666	2.00
2051-24-3	PCB-209		143	143	pg/g	0.666	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		65.8	200	pg/g	32.9	(15%-140%)
13C-3-MoCB		80.7	200	pg/g	40.4	(15%-140%)
13C-4-DiCB		86.4	200	pg/g	43.2	(30%-140%)
13C-15-DiCB		125	200	pg/g	62.3	(30%-140%)
13C-19-TrCB		101	200	pg/g	50.7	(30%-140%)
13C-37-TrCB		130	200	pg/g	65.1	(30%-140%)
13C-54-TeCB		91.3	200	pg/g	45.7	(30%-140%)
13C-77-TeCB		171	200	pg/g	85.5	(30%-140%)
13C-81-TeCB		175	200	pg/g	87.4	(30%-140%)
13C-104-PeCB		113	200	pg/g	56.5	(30%-140%)
13C-105-PeCB		152	200	pg/g	76.0	(30%-140%)
13C-114-PeCB		144	200	pg/g	71.8	(30%-140%)
13C-118-PeCB		149	200	pg/g	74.5	(30%-140%)
13C-123-PeCB		155	200	pg/g	77.4	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010217**			**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**				
Client ID:	**LCSD for batch 25700**			**Prep Basis:**	**As Received**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 11:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-3**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**10 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		176	200	pg/g	87.9	(30%-140%)
13C-155-HxCB		103	200	pg/g	51.7	(30%-140%)
13C-156-HxCB	C	272	400	pg/g	67.9	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		139	200	pg/g	69.7	(30%-140%)
13C-169-HxCB		148	200	pg/g	74.1	(30%-140%)
13C-188-HpCB		97.6	200	pg/g	48.8	(30%-140%)
13C-189-HpCB		136	200	pg/g	67.8	(30%-140%)
13C-202-OcCB		112	200	pg/g	55.9	(30%-140%)
13C-205-OcCB		150	200	pg/g	74.9	(30%-140%)
13C-206-NoCB		141	200	pg/g	70.6	(30%-140%)
13C-208-NoCB		142	200	pg/g	71.2	(30%-140%)
13C-209-DeCB		138	200	pg/g	69.1	(30%-140%)
13C-28-TrCB		129	200	pg/g	64.4	(40%-125%)
13C-111-PeCB		145	200	pg/g	72.6	(40%-125%)
13C-178-HpCB		134	200	pg/g	66.9	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010218**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272(5963001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 14:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-6**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		45.7	45.5	pg/g	0.963	4.81
2051-62-9	PCB-3		50.2	50	pg/g	0.963	1.93
13029-08-8	PCB-4		46.7	45.9	pg/g	0.963	3.85
2050-68-2	PCB-15		57.8	57.1	pg/g	0.963	19.3
38444-73-4	PCB-19		49.8	49.5	pg/g	0.641	1.93
38444-90-5	PCB-37		49.9	49.6	pg/g	0.641	19.3
15968-05-5	PCB-54		99.0	98.8	pg/g	0.641	1.93
32598-13-3	PCB-77		95.8	95.5	pg/g	0.641	1.93
70362-50-4	PCB-81		97.7	97.5	pg/g	0.641	1.93
56558-16-8	PCB-104		101	101	pg/g	0.641	1.93
32598-14-4	PCB-105		174	173	pg/g	0.963	1.93
74472-37-0	PCB-114		103	102	pg/g	0.641	1.93
31508-00-6	PCB-118		261	259	pg/g	1.28	3.85
65510-44-3	PCB-123		92.9	92.5	pg/g	0.641	1.93
57465-28-8	PCB-126		102	102	pg/g	0.641	1.93
33979-03-2	PCB-155		109	109	pg/g	0.641	1.93
PCB-156/157	PCB-156/157	C	280	279	pg/g	1.28	3.85
52663-72-6	PCB-167		144	144	pg/g	0.641	1.93
32774-16-6	PCB-169		99.1	98.9	pg/g	0.963	1.93
74487-85-7	PCB-188		105	105	pg/g	0.641	1.93
39635-31-9	PCB-189		110	110	pg/g	0.641	1.93
2136-99-4	PCB-202		183	183	pg/g	0.963	1.93
74472-53-0	PCB-205		142	142	pg/g	0.641	1.93
40186-72-9	PCB-206		176	176	pg/g	0.963	1.93
52663-77-1	PCB-208		160	160	pg/g	0.641	1.93
2051-24-3	PCB-209		152	152	pg/g	0.641	1.93

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		85.5	193	pg/g	44.4	(15%-150%)
13C-3-MoCB		98.5	193	pg/g	51.2	(15%-150%)
13C-4-DiCB		103	193	pg/g	53.6	(25%-150%)
13C-15-DiCB		130	193	pg/g	67.5	(25%-150%)
13C-19-TrCB		112	193	pg/g	58.4	(25%-150%)
13C-37-TrCB		128	193	pg/g	66.6	(25%-150%)
13C-54-TeCB		94.7	193	pg/g	49.2	(25%-150%)
13C-77-TeCB		179	193	pg/g	93.2	(25%-150%)
13C-81-TeCB		183	193	pg/g	95.2	(25%-150%)
13C-104-PeCB		107	193	pg/g	55.7	(25%-150%)
13C-105-PeCB		141	193	pg/g	73.4	(25%-150%)
13C-114-PeCB		141	193	pg/g	73.4	(25%-150%)
13C-118-PeCB		147	193	pg/g	76.5	(25%-150%)
13C-123-PeCB		152	193	pg/g	79.1	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010218**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272(5963001MS)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 14:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-6**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.74 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		152	193	pg/g	79.1	(25%-150%)
13C-155-HxCB		110	193	pg/g	57.4	(25%-150%)
13C-156-HxCB	C	279	385	pg/g	72.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		137	193	pg/g	71.3	(25%-150%)
13C-169-HxCB		172	193	pg/g	89.2	(25%-150%)
13C-188-HpCB		84.8	193	pg/g	44.0	(25%-150%)
13C-189-HpCB		131	193	pg/g	67.8	(25%-150%)
13C-202-OcCB		93.9	193	pg/g	48.8	(25%-150%)
13C-205-OcCB		146	193	pg/g	76.0	(25%-150%)
13C-206-NoCB		128	193	pg/g	66.4	(25%-150%)
13C-208-NoCB		137	193	pg/g	71.2	(25%-150%)
13C-209-DeCB		130	193	pg/g	67.7	(25%-150%)
13C-28-TrCB		134	193	pg/g	69.7	(30%-135%)
13C-111-PeCB		145	193	pg/g	75.5	(30%-135%)
13C-178-HpCB		133	193	pg/g	69.0	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010219**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272(5963001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 15:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-7**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.75 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL
2051-60-7	PCB-1		43.3	43.1	pg/g	0.962	4.81
2051-62-9	PCB-3		49.4	49.2	pg/g	0.962	1.92
13029-08-8	PCB-4		46.7	45.8	pg/g	0.962	3.85
2050-68-2	PCB-15		60.8	60.1	pg/g	0.962	19.2
38444-73-4	PCB-19		51.1	50.9	pg/g	0.641	1.92
38444-90-5	PCB-37		64.2	63.9	pg/g	0.641	19.2
15968-05-5	PCB-54		95.7	95.5	pg/g	0.641	1.92
32598-13-3	PCB-77		99.5	99.3	pg/g	0.641	1.92
70362-50-4	PCB-81		93.6	93.4	pg/g	0.641	1.92
56558-16-8	PCB-104		95.3	95.2	pg/g	0.641	1.92
32598-14-4	PCB-105		186	186	pg/g	0.962	1.92
74472-37-0	PCB-114		96.1	95.7	pg/g	0.641	1.92
31508-00-6	PCB-118		261	259	pg/g	1.28	3.85
65510-44-3	PCB-123		94.0	93.7	pg/g	0.641	1.92
57465-28-8	PCB-126		98.4	98.1	pg/g	0.641	1.92
33979-03-2	PCB-155		104	104	pg/g	0.641	1.92
PCB-156/157	PCB-156/157	C	257	257	pg/g	1.28	3.85
52663-72-6	PCB-167		134	134	pg/g	0.641	1.92
32774-16-6	PCB-169		93.7	93.5	pg/g	0.962	1.92
74487-85-7	PCB-188		100	99.8	pg/g	0.641	1.92
39635-31-9	PCB-189		104	103	pg/g	0.641	1.92
2136-99-4	PCB-202		173	173	pg/g	0.962	1.92
74472-53-0	PCB-205		134	133	pg/g	0.641	1.92
40186-72-9	PCB-206		167	167	pg/g	0.962	1.92
52663-77-1	PCB-208		154	154	pg/g	0.641	1.92
2051-24-3	PCB-209		144	143	pg/g	0.641	1.92

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		102	192	pg/g	52.8	(15%-150%)
13C-3-MoCB		117	192	pg/g	61.0	(15%-150%)
13C-4-DiCB		127	192	pg/g	66.0	(25%-150%)
13C-15-DiCB		166	192	pg/g	86.1	(25%-150%)
13C-19-TrCB		136	192	pg/g	70.8	(25%-150%)
13C-37-TrCB		150	192	pg/g	77.9	(25%-150%)
13C-54-TeCB		105	192	pg/g	54.8	(25%-150%)
13C-77-TeCB		208	192	pg/g	108	(25%-150%)
13C-81-TeCB		213	192	pg/g	111	(25%-150%)
13C-104-PeCB		130	192	pg/g	67.5	(25%-150%)
13C-105-PeCB		175	192	pg/g	91.1	(25%-150%)
13C-114-PeCB		170	192	pg/g	88.2	(25%-150%)
13C-118-PeCB		177	192	pg/g	91.8	(25%-150%)
13C-123-PeCB		182	192	pg/g	94.7	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2014-3140**	**Client:**	**LANL001**	**Project:**	**LANL00112**
Lab Sample ID:	**12010219**	**Date Collected:**	**04/04/2014 11:20**	**Matrix:**	**SOLID**
Client Sample:	**QC for batch 25700**	**Date Received:**	**04/08/2014 10:15**	**%Moisture:**	**18.5**
Client ID:	**CAWA-14-49272(5963001MSD)**			**Prep Basis:**	**Dry Weight**
Batch ID:	**25702**	**Method:**	**EPA Method 1668A**		
Run Date:	**04/26/2014 15:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c25apr14a_3-7**			**Dilution:**	**1**
Prep Batch:	**25700**	**Prep Method:**	**SW846 3540C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**21-APR-14**	**Prep Aliquot:**	**12.75 g**		

CAS No.	Parmname	Qual	Result	MBCR	Units	MDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB		189	192	pg/g	98.0	(25%-150%)
13C-155-HxCB		128	192	pg/g	66.7	(25%-150%)
13C-156-HxCB	C	332	385	pg/g	86.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		164	192	pg/g	85.2	(25%-150%)
13C-169-HxCB		203	192	pg/g	105	(25%-150%)
13C-188-HpCB		98.1	192	pg/g	51.0	(25%-150%)
13C-189-HpCB		160	192	pg/g	83.2	(25%-150%)
13C-202-OcCB		115	192	pg/g	59.5	(25%-150%)
13C-205-OcCB		180	192	pg/g	93.7	(25%-150%)
13C-206-NoCB		149	192	pg/g	77.6	(25%-150%)
13C-208-NoCB		163	192	pg/g	84.9	(25%-150%)
13C-209-DeCB		165	192	pg/g	86.0	(25%-150%)
13C-28-TrCB		159	192	pg/g	82.6	(30%-135%)
13C-111-PeCB		176	192	pg/g	91.4	(30%-135%)
13C-178-HpCB		156	192	pg/g	81.3	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**

General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

ADEP

COC/Lab Request #: 2014-3154

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Metals(W)	NMED Explosives list	Tal Metals
CACV-14-49240	Apr 7 2014	15:00	SED			1	1
CAWA-14-49282	Apr 7 2014	16:20	W		1		
CAWA-14-49265	Apr 7 2014	15:40	SED			1	1
CAWA-14-49280	Apr 7 2014	15:40	SED	1			1
CAWA-14-49266	Apr 7 2014	16:05	SED			1	1
~~[illegible]~~							
CACV-14-49241	Apr 7 2014	15:10	SED			1	1

Special Instructions: 8082 + NMED-HEXP → 8082 not Collected Analyze for NMED Explosives Only!

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
[signature]	Melissa Montoya	4/8/14 3:00			
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49240 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/07/2014	FIELD MATRIX:	SED	ok
TIME COLLECTED (HH:MM):		1500	MEDIA:		Sed
PRS ID:	Cañon de Valle	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:	~~43~~ SPCM 3/7/14	CV-61487	FIELD PREP:	NA	
LOCATION TYPE:	BH	ok	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.164	5cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS:
Fine Sediment

LOCATION COMMENTS: CDV-0

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Skid Zone
x: 14
y: 1149

Gross Alpha 28 dpm

Gross Beta/Gamma 1579 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Raibert (Signature)	4/7/14 1655	(Printed Name) K. Grace (Signature)	4/7/14 4:55
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name) (Signature)		(Printed Name) (Signature)	

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CACV-14-49241 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1510	MEDIA:		Sed
PRS ID:	Cañon de Valle	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	44 SPM 3/27/14	CV- 61488	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0.196	6cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: CDV-0

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Kgd Rad
: 14
: 1149

Gross Alpha 14 dpm

Gross Beta/Gamma 1458 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Naibert (Signature)	4/7/14 1655	(Printed Name) K. Greene (Signature)	4/7/14 4:55
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time**

Report Date 11/14/2013

9

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49265 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1540	MEDIA:		Sed
PRS ID:	Water-Canyon	ok	SAMPLE TECH CODE:	SS	ok
LOCATION ID:		WA-61492	FIELD PREP:	NA	
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	
BOTTOM DEPTH:		0.328 10cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Fine Sediment

LOCATION COMMENTS: WA-0

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Bkgd Rad 1:14 dpm 18:1149 2pm

Gross Alpha 28 dpm

Gross Beta/Gamma 1779 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Trent Walbert (Signature)	4/7/14 1655	(Printed Name) K. Greer (Signature)	4/7/14 4:55
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49266 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/07/2014	FIELD MATRIX:	SED	OK
TIME COLLECTED (HH:MM):		1605	MEDIA:		Sed
PRS ID:	Water-Canyon	OK	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	SS5 per 5/7/14	WA-61493	FIELD PREP:	NA	OK
LOCATION TYPE:	BH	OK	FIELD QC TYPE:	REG	OK
TOP DEPTH:		0cm	SAMPLE USAGE:	INV	OK
BOTTOM DEPTH:	0.328	10cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	NMED Explosives list	250 ML AMBER GLASS	1	ICE	Y	
	Particle Size	1 EA 8 IN RESEALABLE POLY BAG	1	NONE	Y	
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: Coarse Sediment

LOCATION COMMENTS: WA-0

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Blk Rad
K: .04 dpm
Bi: 1149 dpm

Gross Alpha 47 dpm

Gross Beta/Gamma 1658 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Raibert (Signature)	4/7/14 1655	(Printed Name) K. Greer (Signature)	4/7/14 1655
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name) (Signature)		(Printed Name) (Signature)	

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49280 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/07/2014	FIELD MATRIX:	S	Sed
TIME COLLECTED (HH:MM):		1540	MEDIA:		Sed
PRS ID:		Water Canyon	SAMPLE TECH CODE:	SS	OK
LOCATION ID:	Specified At Time Of Sampling	WA-61492	FIELD PREP:		NA
LOCATION TYPE:		BH	FIELD QC TYPE:	FD	OK
TOP DEPTH:		0cm	SAMPLE USAGE:	QC	OK
BOTTOM DEPTH:		0.328 10cm	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	1668A	500 ML AMBER GLASS	1	ICE	N	
	~~8082~~+NMED-HEXP	250 ML AMBER GLASS	1	ICE	Y	8082 not collected Analyze for NMED explosives only PEC 4/7/14
	~~NMED Explosives list~~	~~250 ML AMBER GLASS~~	~~1~~	~~ICE~~		
	Tal Metals	125 ML POLY	1	ICE	Y	

SAMPLE COMMENTS: fine Sediment FD of CAWA-14-49265

LOCATION COMMENTS: WA-0

FIELD PARAMETERS: NA

FIELD SCREENING/MEASUREMENT RESULTS:

Blgd Rad X 14 B 1149

Gross Alpha 28 dpm

Gross Beta/Gamma 1779 dpm

PID Ambient Reading = NA ppm

COLLECTED BY (PRINT) P. Drakos

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Nabbot (Signature)	4/7/14 1655	(Printed Name) K. Green (Signature)	4/7/14 1655
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4480 **EVENT NAME:** Water/CdV 2013 Sediment Monitoring

SAMPLE ID: CAWA-14-49282 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		04/07/2014	FIELD MATRIX:	W	OK
TIME COLLECTED (HH:MM):		16:20	MEDIA:		W
PRS ID:	Water-Canyon Specified At Time Of Sampling	OK	SAMPLE TECH CODE:	DC	OK
LOCATION ID:		WA-6143993	FIELD PREP:	NA	OK
LOCATION TYPE:		BH	FIELD QC TYPE:	FR	OK
TOP DEPTH:		NA	SAMPLE USAGE:	QC	OK
BOTTOM DEPTH:		NA	EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	Metals(W)	1 LITER POLY	1	HNO3	Y	

SAMPLE COMMENTS:

Field rinsate of metal scoop & bowl

LOCATION COMMENTS:

WA-0

FIELD PARAMETERS:

pH 2

COLLECTED BY (PRINT)

P. Chamberlain

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Travis Maibert (Signature)	4/7/14 1655	(Printed Name) K. Grace (Signature)	4/7/14 4:55
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 11/14/2013

DATA VALIDATION REPORT

Chain Of Custody No. 2014-3154

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
346281	EPA:245.2					
346281	SW-846:6010C	4	1			
346281	SW-846:6020	4	1			
346281	SW-846:7471A	4	1			
346281	SW-846:8321A_MOD	4	1			

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
346281	EPA:245.2	1382562	1382561						1	1				1				1			
346281	SW-846:6010C	1381111	1381110	4	1				1	1				1				1			
346281	SW-846:6010C	1381143	1381142						1	1	1			1							
346281	SW-846:6020	1381872	1381871	4	1				1	1				1				1			
346281	SW-846:6020	1384028	1384027						1	1				1				1			
346281	SW-846:7471A	1382952	1382951	4	1				1	1				1				1			
346281	SW-846:8321A_MOD	1378862	1378861	4	1				1					1							
346281	SW-846:8321A_MOD	1384102	1384101	4	1				1					1							

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:245.2	INORGANIC	CAWA-14-49282	1203074629	DUP	1	0	0	0
EPA:245.2	INORGANIC	CAWA-14-49282	1203074630	MS	0	0	1	0
EPA:245.2	INORGANIC	CAWA-14-49282	346281002	FR	1	0	0	0
EPA:245.2	INORGANIC	LCS	1203074628	LCS	0	0	1	0
EPA:245.2	INORGANIC	MB	1203074627	MB	1	0	0	0
SW-846:6010C	INORGANIC	CACB-14-75330	1203070777	DUP	17	0	0	0
SW-846:6010C	INORGANIC	CACB-14-75330	1203070778	MS	0	0	17	0
SW-846:6010C	INORGANIC	CACV-14-49240	346281001	REG	17	0	0	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:6010C	INORGANIC	CACV-14-49241	346281006	REG	17	0	0	0
SW-846:6010C	INORGANIC	CAPA-14-56394	1203070840	MS	0	0	13	0
SW-846:6010C	INORGANIC	CAPA-14-56394	1203070842	MSD	0	0	13	0
SW-846:6010C	INORGANIC	CAWA-14-49265	346281003	REG	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49266	346281005	REG	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49280	346281004	FD	17	0	0	0
SW-846:6010C	INORGANIC	CAWA-14-49282	346281002	FR	13	0	0	0
SW-846:6010C	INORGANIC	LCS	1203070776	LCS	0	0	17	0
SW-846:6010C	INORGANIC	LCS	1203070838	LCS	0	0	13	0
SW-846:6010C	INORGANIC	MB	1203070775	MB	17	0	0	0
SW-846:6010C	INORGANIC	MB	1203070837	MB	13	0	0	0
SW-846:6020	INORGANIC	CACV-14-49240	346281001	REG	5	0	0	0
SW-846:6020	INORGANIC	CACV-14-49241	346281006	REG	5	0	0	0
SW-846:6020	INORGANIC	CAMO-14-75317	1203072730	DUP	5	0	0	0
SW-846:6020	INORGANIC	CAMO-14-75317	1203072731	MS	0	0	5	0
SW-846:6020	INORGANIC	CAMO-14-75328	1203078139	DUP	9	0	0	0
SW-846:6020	INORGANIC	CAMO-14-75328	1203078140	MS	0	0	9	0
SW-846:6020	INORGANIC	CAWA-14-49265	346281003	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49266	346281005	REG	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49280	346281004	FD	5	0	0	0
SW-846:6020	INORGANIC	CAWA-14-49282	346281002	FR	9	0	0	0
SW-846:6020	INORGANIC	LCS	1203072729	LCS	0	0	5	0
SW-846:6020	INORGANIC	LCS	1203078138	LCS	0	0	9	0
SW-846:6020	INORGANIC	MB	1203072728	MB	5	0	0	0
SW-846:6020	INORGANIC	MB	1203078137	MB	9	0	0	0
SW-846:7471A	INORGANIC	CACH-14-56607	1203075640	DUP	1	0	0	0
SW-846:7471A	INORGANIC	CACH-14-56607	1203075641	MS	0	0	1	0
SW-846:7471A	INORGANIC	CACV-14-49240	346281001	REG	1	0	0	0
SW-846:7471A	INORGANIC	CACV-14-49241	346281006	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49265	346281003	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49266	346281005	REG	1	0	0	0
SW-846:7471A	INORGANIC	CAWA-14-49280	346281004	FD	1	0	0	0
SW-846:7471A	INORGANIC	LCS	1203075639	LCS	0	0	1	0
SW-846:7471A	INORGANIC	MB	1203075638	MB	1	0	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49240	346281001	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CACV-14-49241	346281006	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49265	346281003	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49266	346281005	REG	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	CAWA-14-49280	346281004	FD	20	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	LCS	1203065166	LCS	0	1	5	0

DATA VALIDATION REPORT

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
SW-846:8321A_MOD	LCMS/MS HIGH	LCS	1203078315	LCS	0	1	15	0
SW-846:8321A_MOD	LCMS/MS HIGH	MB	1203065165	MB	5	1	0	0
SW-846:8321A_MOD	LCMS/MS HIGH	MB	1203078314	MB	15	1	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

Blank FS ID	Blank Lab Sample	Blank Type	Analytical Method	Sample	Parameter Name	Blank Lab Result	Lab Qualifier	Blank Lab Units	Blank Lab Detection Limit
MB	1203070775	METHOD BLANK	SW-846:6010C	SED	Calcium	8400	J	ug/kg	23900
MB	1203070775	METHOD BLANK	SW-846:6010C	SED	Lead	546	J	ug/kg	958
MB	1203070837	METHOD BLANK	SW-846:6010C	W	Manganese	2.82	J	ug/L	10.0
MB	1203078137	METHOD BLANK	SW-846:6020	W	Chromium	-5.65	J	ug/L	10.0

Field Sample ID	Blank Lab	Blank Type	Analytical Method	Parameter Name	Blank Lab Result	Blank Lab Units	Lab Result	Lab Qualifier	Lab Detection Limit	Detect Flag	Detect to Nondetect Factor	Detect to Estimated Factor	Use Factors
CAWA-14-49282	1203078137	METHOD BLANK	SW-846:6020	Chromium	-5.65	ug/L	10.0	U	10.0	N	5		Y

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

Field Sample ID	MS Lab Sample ID	MSD Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS Spike Recovery	MSD Spike Recovery	MS Upper Limit	MS Lower Limit	MS Reject Limit	RPD	RPD Limit
CACB-14-75330	1203070778		SW-846:6010C	Aluminum	1381110	05-02-2014	SO	544		125	75			
CACB-14-75330	1203070778		SW-846:6010C	Calcium	1381110	05-02-2014	SO	-12.9		125	75			
CACB-14-75330	1203070778		SW-846:6010C	Magnesium	1381110	05-02-2014	SO	130		125	75			
CACB-14-75330	1203070778		SW-846:6010C	Manganese	1381110	05-02-2014	SO	52.7		125	75			
CAMO-14-75328	1203078140		SW-846:6020	Thallium	1384027	05-02-2014	W	35.5		125	75	10		

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

DATA VALIDATION REPORT

13. Display Flagged Data.

None.

Reason Code	Description
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CACV-14-49240	CV-61487	REG	SW-846:6010C	0	17
CACV-14-49240	CV-61487	REG	SW-846:6020	0	5
CACV-14-49240	CV-61487	REG	SW-846:7471A	0	1
CACV-14-49240	CV-61487	REG	SW-846:8321A_MOD	0	20
CACV-14-49241	CV-61488	REG	SW-846:6010C	0	17
CACV-14-49241	CV-61488	REG	SW-846:6020	0	5
CACV-14-49241	CV-61488	REG	SW-846:7471A	0	1
CACV-14-49241	CV-61488	REG	SW-846:8321A_MOD	0	20
CAWA-14-49265	WA-61492	REG	SW-846:6010C	0	17
CAWA-14-49265	WA-61492	REG	SW-846:6020	0	5
CAWA-14-49265	WA-61492	REG	SW-846:7471A	0	1
CAWA-14-49265	WA-61492	REG	SW-846:8321A_MOD	0	20
CAWA-14-49266	WA-61493	REG	SW-846:6010C	0	17
CAWA-14-49266	WA-61493	REG	SW-846:6020	0	5
CAWA-14-49266	WA-61493	REG	SW-846:7471A	0	1
CAWA-14-49266	WA-61493	REG	SW-846:8321A_MOD	0	20
CAWA-14-49280	WA-61492	FD	SW-846:6010C	0	17
CAWA-14-49280	WA-61492	FD	SW-846:6020	0	5
CAWA-14-49280	WA-61492	FD	SW-846:7471A	0	1
CAWA-14-49280	WA-61492	FD	SW-846:8321A_MOD	0	20
CAWA-14-49282	WA-61493	FR	EPA:245.2	0	1
CAWA-14-49282	WA-61493	FR	SW-846:6010C	0	13
CAWA-14-49282	WA-61493	FR	SW-846:6020	0	9

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

May 05, 2014

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL ER
Work Order: 346281
SDG: 2014-3154

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on April 09, 2014, and analyzed for Explosives by LCMSMS and Metals. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Hope Taylor for
Valerie Davis
Project Manager

Chain of Custody: 2014-3154
Enclosures

ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Work Order #: 346281
SDG: 2014-3154

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Case Narrative

Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL ER
Workorder #: 346281
SDG # : 2014-3154

May 05, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 09, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
346281001	CACV-14-49240
346281002	CAWA-14-49282
346281003	CAWA-14-49265
346281004	CAWA-14-49280
346281005	CAWA-14-49266
346281006	CACV-14-49241

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS and Metals.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.

Hope Taylor for
Valerie Davis
Project Manager

List of current GEL Certifications as of 05 May 2014

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122014−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−14−9
Utah NELAP	SC000122013−11
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Chain of Custody and Supporting Documentation

General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

346281

ADEP

COC/Lab Request #: 2014-3154

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Lab Reporting Limit Type: Sample Quantitation Limit

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	8082+NMED-HEXP	Metals(W)	NMED Explosives list	Tal Metals
CACV-14-49240	Apr 7 2014	15:00	SED			1	1
CAWA-14-49282	Apr 7 2014	16:20	W		1		
CAWA-14-49265	Apr 7 2014	15:40	SED			1	1
CAWA-14-49280	Apr 7 2014	15:40	SED	1			1
CAWA-14-49266	Apr 7 2014	16:05	SED			1	1
~~CAOW-14~~							
CACV-14-49241	Apr 7 2014	15:10	SED			1	1

Special Instructions: 8082 + NMED-HEXP → 8082 not Collected Analyze for NMED Explosives Only!

Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
[signature]	Melissa Montoya	4/8/14 3:00	P. Nent	Patricia Dent	4-9-14 0905
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	**SDG/AR/COC/Work Order:** 2014-3154
Received By: P. Dent	**Date Received:** 040914

Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		X	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0cpm
Classified Radioactive II or III by RSO?		X	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		X	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		X	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: 4 1304629166 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?			X	Sample ID's and containers affected:
7	Are Encore containers present?	X			(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
11	Number of containers received match number indicated on COC?	X			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			X	
13	COC form is properly signed in relinquished/received sections?	X			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 5908 1776 8904

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HT Date 040914 Page 1 of 1

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 08APR14
ACTWGT: 53.0 LB MAN
CAD: 0014176/CAFE2704

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: MR1A015AGWF0

4c

FedEx Express

TRK# 0201 5908 1776 8900

WED - 09 APR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RITZ 10/11 9e

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Explosives by LCMSMS Analysis

Case Narrative

LC-MS/MS Case Narrative
ARS International, LLC (ARSL)
SDG 2014-3154

Method/Analysis Information

Procedure:	**Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS) by SW-846 Method 8321 Modified (8321M)**
Analytical Method:	SW846 8321A Modified
Prep Method:	SW846 8330 PREP
Analytical Batch Number:	1378862
Prep Batch Number:	1378861

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8321A Modified:

Sample ID	Client ID
346281001	CACV-14-49240
346281003	CAWA-14-49265
346281004	CAWA-14-49280
346281005	CAWA-14-49266
346281006	CACV-14-49241
1203065165	Method Blank (MB)
1203065166	Laboratory Control Sample (LCS)
1203065167	346281001(CACV-14-49240) Matrix Spike (MS)
1203065168	346281001(CACV-14-49240) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP).

The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 17.

Secondary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 346281001 (CACV-14-49240) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS (1203065167) did not meet acceptance criteria for the recovery of 2,6-Diamino-4-nitrotoluene at 52.4% and for 2,4-Diamino-6-nitrotoluene at 34.2%. The limits are 65-119% and 61-133%, respectively. Since similar recoveries were obtained between matrix spikes, the noted exceptions are attributed to sample matrix interference. The LCS met acceptance criteria for all target analytes, therefore the data are reported with the appropriate DER.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD (1203065168) did not meet acceptance criteria for the recovery of 2,6-Diamino-4-nitrotoluene at 52.6% and for 2,4-Diamino-6-nitrotoluene at 35.4%. The limits are 65-119% and 61-133%, respectively. Since similar recoveries were obtained between matrix spikes, the noted exceptions are attributed to sample matrix interference. The LCS met acceptance criteria for all target analytes, therefore the data are reported with the appropriate DER.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
The internal standard was not added to the Secondary analyte extracts.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data Exception Report 1288719 was generated for this SDG.

The MS (1203065167) did not meet acceptance criteria for the recovery of 2,6-Diamino-4-nitrotoluene at 52.4% and for 2,4-Diamino-6-nitrotoluene at 34.2%. The limits are 65-119% and 61-133%, respectively. Since similar recoveries were obtained between matrix spikes, the noted exceptions are attributed to sample matrix interference. The LCS met acceptance criteria for all target analytes, therefore the data are reported with the appropriate DER.

The MSD (1203065168) did not meet acceptance criteria for the recovery of 2,6-Diamino-4-nitrotoluene at 52.6% and for 2,4-Diamino-6-nitrotoluene at 35.4%. The limits are 65-119% and 61-133%, respectively. Since similar recoveries were obtained between matrix spikes, the noted exceptions are attributed to sample matrix interference. The LCS met acceptance criteria for all target analytes, therefore the data are reported with the appropriate DER.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Additional Comments
Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Primary analyte analysis. It is coupled with a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for the Primary analyte analysis.

The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package.

Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the Secondary analytes is accomplished through analysis on the following reversed phase column:

YMC: J'sphere ODS-H80, 150 x 4.6mm I.D.

Method/Analysis Information

Procedure:	**Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (LC-MS/MS) by SW-846 Method 8321 Modified (8321M)**
Analytical Method:	SW846 8321A Modified
Prep Method:	SW846 8330 PREP
Analytical Batch Number:	1384102
Prep Batch Number:	1384101

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8321A Modified:

Sample ID	**Client ID**
346281001	CACV-14-49240
346281003	CAWA-14-49265
346281004	CAWA-14-49280
346281005	CAWA-14-49266
346281006	CACV-14-49241
1203078314	Method Blank (MB)
1203078315	Laboratory Control Sample (LCS)
1203078316	346281001(CACV-14-49240) Matrix Spike (MS)
1203078317	346281001(CACV-14-49240) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP).

The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 17.

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria.

Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 346281001 (CACV-14-49240) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits for this analysis.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits for this analysis.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
A final internal standard concentration of 100ug/L is employed in order to meet the minimum response factor requirement of 0.01 per EPA Method 8000C for the analysis of explosives on the API 4000.

The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications
Samples 346281001 (CACV-14-49240), 346281003 (CAWA-14-49265), 346281004 (CAWA-14-49280), 346281005 (CAWA-14-49266), 346281006 (CACV-14-49241), and QC samples 1203078316 (CACV-14-49240), 1203078317 (CACV-14-49240) did not meet the specified holding time requirements. The samples were originally extracted within holding, but were re-extracted out of holding for Primary analytes only due to failing LCS recoveries. Since the samples were within two times the holding period, only the data from the re-extraction were reported for Primary analytes. The data from the original extraction were reported for Secondary analytes only.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water.

The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data Exception Report 1289827 was generated for this SDG.

Samples 346281001 (CACV-14-49240), 346281003 (CAWA-14-49265), 346281004 (CAWA-14-49280), 346281005 (CAWA-14-49266), 346281006 (CACV-14-49241), and QC samples 1203078316 (CACV-14-49240), 1203078317 (CACV-14-49240) did not meet the specified holding time requirements. The samples were originally extracted within holding, but were re-extracted out of holding for Primary analytes only due to failing LCS recoveries. Since the samples were within two times the holding period, only the data from the re-extraction were reported for Primary analytes.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Additional Comments
Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Primary analyte analysis. It is coupled with a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for the Primary analyte analysis. The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package.

Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the Primary Nitroaromatic and Nitramine analytes is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3154 GEL Work Order: 346281

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

h Preparation or preservation holding time was exceeded

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Michael A. Penny Jr. **Name: Michael Penny**

Date: 06 MAY 2014 **Title: Group Leader**

Sample Data Summary

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281001

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0501015.wiff

Date Analyzed: 01-MAY-14 22:47

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	Uh	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	Uh	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	Uh	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	Uh	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	Uh	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	Uh	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	Uh	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	Uh	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	Uh	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	Uh	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	Uh	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	Uh	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	Uh	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281001

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	Uh	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	Uh	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281001

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290016.wiff

Date Analyzed: 29-APR-14 15:33

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49265

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281003

Sample Amount 2.04 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0501018.wiff

Date Analyzed: 02-MAY-14 00:32

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	490	Uh	147	490
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	490	Uh	147	490
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	490	Uh	147	490
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	490	Uh	147	490
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	490	Uh	147	490
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	490	Uh	147	490
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	490	Uh	147	490
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	490	Uh	147	490
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	490	Uh	147	490
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	490	Uh	147	490
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	490	Uh	147	490
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	490	Uh	147	490
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	490	Uh	147	490
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49265

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281003

Sample Amount 2.04 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	490	Uh	147	490
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	980	Uh	245	980
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49265

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281003

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290019.wiff

Date Analyzed: 29-APR-14 16:23

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1000	U	300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1000	U	300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1000	U	300	1000
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U	660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49280

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281004

Sample Amount 2.03 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0501019.wiff

Date Analyzed: 02-MAY-14 01:08

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	493	Uh	148	493
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	493	Uh	148	493
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	493	Uh	148	493
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	493	Uh	148	493
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	493	Uh	148	493
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	493	Uh	148	493
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	493	Uh	148	493
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	493	Uh	148	493
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	493	Uh	148	493
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	493	Uh	148	493
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	493	Uh	148	493
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	493	Uh	148	493
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	493	Uh	148	493
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49280

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281004

Sample Amount 2.03 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	493	Uh	148	493
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	985	Uh	246	985
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49280

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281004

Sample Amount 2.01 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290020.wiff

Date Analyzed: 29-APR-14 16:40

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	995	U	299	995
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	995	U	299	995
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	995	U	299	995
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1990	U	657	1990
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1990	U	498	1990
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49266

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281005

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0501020.wiff

Date Analyzed: 02-MAY-14 01:43

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	Uh	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	Uh	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	Uh	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	Uh	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	Uh	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	Uh	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	Uh	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	Uh	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	Uh	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	Uh	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	Uh	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	Uh	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	Uh	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49266

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281005

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	Uh	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	Uh	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-14-49266

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281005

Sample Amount 2.01 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290021.wiff

Date Analyzed: 29-APR-14 16:56

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	995	U	299	995
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	995	U	299	995
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	995	U	299	995
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1990	U	657	1990
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1990	U	498	1990
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49241

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281006

Sample Amount 2.05 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0501021.wiff

Date Analyzed: 02-MAY-14 02:17

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	488	Uh	146	488
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	488	Uh	146	488
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	488	Uh	146	488
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	488	Uh	146	488
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	488	Uh	146	488
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	488	Uh	146	488
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	488	Uh	146	488
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	488	Uh	146	488
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	488	Uh	146	488
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	488	Uh	146	488
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	488	Uh	146	488
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	488	Uh	146	488
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	488	Uh	146	488
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49241

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281006

Sample Amount 2.05 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	488	Uh	146	488
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	976	Uh	244	976
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49241

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 346281006

Sample Amount 2.01 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290022.wiff

Date Analyzed: 29-APR-14 17:13

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	995	U	299	995
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	995	U	299	995
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	995	U	299	995
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1990	U	657	1990
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1990	U	498	1990
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC **GEL Job No (SDG):** 2014-3154

Lab Code: GEL **HPLC Column:** Ultracarb Phenomenex 5u ODS (20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
346281001	CACV-14-49240	110	62 - 121	
346281003	CAWA-14-49265	93.6	62 - 121	
346281004	CAWA-14-49280	96	62 - 121	
346281005	CAWA-14-49266	93.6	62 - 121	
346281006	CACV-14-49241	99.2	62 - 121	
1203078314	MB for batch 1384101	93.2	62 - 121	
1203078315	LCS for batch 1384101	98.4	62 - 121	
1203078316	CACV-14-49240MS	94.8	62 - 121	
1203078317	CACV-14-49240MSD	92	62 - 121	

DNT = 3,4-Dinitrotoluene

Lab Code: GEL **HPLC Column:** YMC J'sphere ODS-H80

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
346281001	CACV-14-49240	93.6	62 - 121	
346281003	CAWA-14-49265	96	62 - 121	
346281004	CAWA-14-49280	97.6	62 - 121	
346281005	CAWA-14-49266	95.2	62 - 121	
346281006	CACV-14-49241	96	62 - 121	
1203065165	MB for batch 1378861	94.8	62 - 121	
1203065166	LCS for batch 1378861	95.6	62 - 121	
1203065167	CACV-14-49240MS	97.6	62 - 121	
1203065168	CACV-14-49240MSD	96	62 - 121	

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Extract Batch Code: 1384101

Date Extracted: 30-APR-14

GEL LCS ID: 1203078315

GEL LCSDUP ID:

Analysis Date/Time: 01-MAY-14 22:12

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
1,3,5-Trinitrobenzene	5000	4880	97.6					63 - 128
2,4,6-Trinitrotoluene	5000	4860	97.2					67 - 126
2,4-Dinitrotoluene	5000	5060	101					69 - 122
4-Amino-2,6-dinitrotoluene	5000	4990	99.8					62 - 135
2-Amino-4,6-dinitrotoluene	5000	5120	102					67 - 126
2,6-Dinitrotoluene	5000	4980	99.6					65 - 119
HMX	5000	5060	101					58 - 123
PETN	5000	4840	96.8					61 - 125
Tetryl	5000	4490	89.8					36 - 131
p-Nitrotoluene	5000	4620	92.4					65 - 119
o-Nitrotoluene	5000	4680	93.6					60 - 121
m-Nitrotoluene	5000	4780	95.6					60 - 126
m-Dinitrobenzene	5000	5260	105					64 - 129
RDX	5000	5430	109					58 - 136
Nitrobenzene	5000	4680	93.6					58 - 130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Extract Batch Code: 1378861

Date Extracted: 16-APR-14

GEL LCS ID: 1203065166

GEL LCSDUP ID:

Analysis Date/Time: 29-APR-14 15:16

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4-Diamino-6-nitrotoluene	4926.1084	3870	78.6					65 - 116
2,6-Diamino-4-nitrotoluene	4926.1084	4070	82.6					65 - 127
3,5-Dinitroaniline	4926.1084	3650	74					61 - 131
TATB	4926.1084	2750	55.8					36 - 156
tris(o-cresyl) phosphate	4926.1084	5170	105					70 - 120

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CACV-14-49240

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Extract Batch Code: 1384101

Date Extracted: 30-APR-14

GEL Spike ID: 1203078316

GEL SpikeDup ID: 1203078317

Analysis Date/Time: 01-MAY-14 23:22

MSD Analysis Date/Time: 01-MAY-14 23:57

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec	#	MSD Conc	MSD Rec	#	RPD	#	RPD Limit	Rec Limits
1,3,5-Trinitrobenzene	4926.108	0	4520	91.8		4860	99.6		7.17		30	63 - 121
2,4,6-Trinitrotoluene	4926.108	0	4590	93.2		4720	96.8		2.81		30	60 - 129
2,4-Dinitrotoluene	4926.108	0	5090	103		4730	97		7.37		30	69 - 124
4-Amino-2,6-dinitrotoluene	4926.108	0	5170	105		5240	107		1.28		30	62 - 135
2-Amino-4,6-dinitrotoluene	4926.108	0	5480	111		5300	109		3.35		30	67 - 133
2,6-Dinitrotoluene	4926.108	0	4770	96.8		4690	96.2		1.6		30	65 - 119
HMX	4926.108	0	5290	107		4830	99		9.12		30	54 - 127
PETN	4926.108	0	4460	90.6		4730	97		5.84		30	58 - 125
Tetryl	4926.108	0	4630	94		4600	94.2		.768		30	36 - 130
p-Nitrotoluene	4926.108	0	4470	90.8		4370	89.6		2.31		30	61 - 120
o-Nitrotoluene	4926.108	0	4700	95.4		4490	92		4.61		30	60 - 116
m-Nitrotoluene	4926.108	0	4730	96		4640	95.2		1.82		30	59 - 126
m-Dinitrobenzene	4926.108	0	5160	105		5580	114		7.78		30	64 - 129
RDX	4926.108	0	4800	97.4		5240	107		8.79		30	45 - 135
Nitrobenzene	4926.108	0	4430	90		4670	95.8		5.26		30	58 - 120

#Column to be used to flag recovery and RPD values with an asterisk

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CACV-14-49240

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Extract Batch Code: 1378861

Date Extracted: 16-APR-14

GEL Spike ID: 1203065167

GEL SpikeDup ID: 1203065168

Analysis Date/Time: 29-APR-14 15:50

MSD Analysis Date/Time: 29-APR-14 16:06

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec	#	MSD Conc	MSD Rec	#	RPD	#	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	5000	0	1710	34.2	*	1770	35.4	*	3.45		30	61 - 133
2,6-Diamino-4-nitrotoluene	5000	0	2620	52.4	*	2730	54.6	*	4.11		30	65 - 119
3,5-Dinitroaniline	5000	0	3550	71		3550	71		0		30	61 - 131
TATB	5000	0	2680	53.6		3450	69		25.1		30	20 - 164
tris(o-cresyl) phosphate	5000	0	5080	102		5130	103		.979		30	70 - 123

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1384101

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203078314

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0501013.wiff

Date Analyzed: 01-MAY-14 21:37

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	500	U	150	500
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	500	U	150	500
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	500	U	150	500
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U	150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	500	U	150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U	150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
479-45-8	Tetryl	500	U	150	500
479-45-8	*Tetryl*				
606-20-2	2,6-Dinitrotoluene	500	U	150	500
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	500	U	150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	500	U	150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	500	U	150	500
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	500	U	150	500
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	500	U	150	500
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1384101

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203078314

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	500	U	150	500
99-99-0	*p-Nitrotoluene*				
78-11-5	PETN	1000	U	250	1000
78-11-5	*PETN*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1378861

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203065165

Sample Amount 2.03 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290014.wiff

Date Analyzed: 29-APR-14 14:59

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	985	U	296	985
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	985	U	296	985
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	985	U	296	985
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	1970	U	650	1970
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	1970	U	493	1970
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1384101

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203078315

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXP0501014.wiff

Date Analyzed: 01-MAY-14 22:12

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	4490		150	500
479-45-8	*Tetryl*				
99-99-0	p-Nitrotoluene	4620		150	500
99-99-0	*p-Nitrotoluene*				
88-72-2	o-Nitrotoluene	4680		150	500
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	4680		150	500
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	4780		150	500
99-08-1	*m-Nitrotoluene*				
78-11-5	PETN	4840		250	1000
78-11-5	*PETN*				
118-96-7	2,4,6-Trinitrotoluene	4860		150	500
118-96-7	*2,4,6-Trinitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4880		150	500
99-35-4	*1,3,5-Trinitrobenzene*				
606-20-2	2,6-Dinitrotoluene	4980		150	500
606-20-2	*2,6-Dinitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	4990		150	500
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	5060		150	500
121-14-2	*2,4-Dinitrotoluene*				
2691-41-0	HMX	5060		150	500
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	5120		150	500
35572-78-2	*2-Amino-4,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1384101

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203078315

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-65-0	m-Dinitrobenzene	5260		150	500
99-65-0	*m-Dinitrobenzene*				
121-82-4	RDX	5430		150	500
121-82-4	*RDX*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1378861

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203065166

Sample Amount 2.03 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290015.wiff

Date Analyzed: 29-APR-14 15:16

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	2750		296	985
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	3650		296	985
618-87-1	*3,5-Dinitroaniline*				
6629-29-4	2,4-Diamino-6-nitrotoluene	3870		493	1970
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	4070		650	1970
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
78-30-8	tris(o-cresyl) phosphate	5170		296	985
78-30-8	*tris(o-cresyl) phosphate*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240(346281001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203078316

Sample Amount 2.03 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0501016.wiff

Date Analyzed: 01-MAY-14 23:22

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
98-95-3	Nitrobenzene	4430	h	148	493
98-95-3	*Nitrobenzene*				
78-11-5	PETN	4460	h	246	985
78-11-5	*PETN*				
99-99-0	p-Nitrotoluene	4470	h	148	493
99-99-0	*p-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4520	h	148	493
99-35-4	*1,3,5-Trinitrobenzene*				
118-96-7	2,4,6-Trinitrotoluene	4590	h	148	493
118-96-7	*2,4,6-Trinitrotoluene*				
479-45-8	Tetryl	4630	h	148	493
479-45-8	*Tetryl*				
88-72-2	o-Nitrotoluene	4700	h	148	493
88-72-2	*o-Nitrotoluene*				
99-08-1	m-Nitrotoluene	4730	h	148	493
99-08-1	*m-Nitrotoluene*				
606-20-2	2,6-Dinitrotoluene	4770	h	148	493
606-20-2	*2,6-Dinitrotoluene*				
121-82-4	RDX	4800	h	148	493
121-82-4	*RDX*				
121-14-2	2,4-Dinitrotoluene	5090	h	148	493
121-14-2	*2,4-Dinitrotoluene*				
99-65-0	m-Dinitrobenzene	5160	h	148	493
99-65-0	*m-Dinitrobenzene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5170	h	148	493
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240(346281001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203078316

Sample Amount 2.03 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
2691-41-0	HMX	5290	h	148	493
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	5480	h	148	493
35572-78-2	*2-Amino-4,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240(346281001MS)MS

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203065167

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290017.wiff

Date Analyzed: 29-APR-14 15:50

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
6629-29-4	2,4-Diamino-6-nitrotoluene	1710	J	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2620		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
3058-38-6	TATB	2680		300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	3550		300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	5080		300	1000
78-30-8	*tris(o-cresyl) phosphate*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240(346281001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203078317

Sample Amount 2.05 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL):50

GEL data file: EXP0501017.wiff

Date Analyzed: 01-MAY-14 23:57

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0	p-Nitrotoluene	4370	h	146	488
99-99-0	*p-Nitrotoluene*				
88-72-2	o-Nitrotoluene	4490	h	146	488
88-72-2	*o-Nitrotoluene*				
479-45-8	Tetryl	4600	h	146	488
479-45-8	*Tetryl*				
99-08-1	m-Nitrotoluene	4640	h	146	488
99-08-1	*m-Nitrotoluene*				
98-95-3	Nitrobenzene	4670	h	146	488
98-95-3	*Nitrobenzene*				
606-20-2	2,6-Dinitrotoluene	4690	h	146	488
606-20-2	*2,6-Dinitrotoluene*				
118-96-7	2,4,6-Trinitrotoluene	4720	h	146	488
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4730	h	146	488
121-14-2	*2,4-Dinitrotoluene*				
78-11-5	PETN	4730	h	244	976
78-11-5	*PETN*				
2691-41-0	HMX	4830	h	146	488
2691-41-0	*HMX*				
99-35-4	1,3,5-Trinitrobenzene	4860	h	146	488
99-35-4	*1,3,5-Trinitrobenzene*				
121-82-4	RDX	5240	h	146	488
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5240	h	146	488
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240(346281001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203078317

Sample Amount 2.05 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1384101

Extraction Type Sonication

Date Extracted: 30-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
35572-78-2	2-Amino-4,6-dinitrotoluene	5300	h	146	488
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
99-65-0	m-Dinitrobenzene	5580	h	146	488
99-65-0	*m-Dinitrobenzene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CACV-14-49240(346281001MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2014-3154

Matrix: SOIL

GEL Sample ID: 1203065168

Sample Amount 2 g

Date Received: 09-APR-14

Moisture:

Extraction Batch ID: 1378861

Extraction Type Sonication

Date Extracted: 16-APR-14

Concentrated Extract Volume (mL) 10

Injection Volume (uL): 50

GEL data file: EXS04290018.wiff

Date Analyzed: 29-APR-14 16:06

Dilution Factor: 2

Concentration Units: ug/kg

Cas No.	Compound	Concentration*	Q	MDL	PQL
6629-29-4	2,4-Diamino-6-nitrotoluene	1770	J	500	2000
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2730		660	2000
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
3058-38-6	TATB	3450		300	1000
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	3550		300	1000
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	5130		300	1000
78-30-8	*tris(o-cresyl) phosphate*				

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 01-MAY-14 14:38

GEL Data File: EXP0501001.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 01-MAY-14 15:13

GEL Data File: EXP0501002.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 29-APR-14 11:22

GEL Data File: EXS04290001.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
TATB	0	0
3,5-Dinitroaniline	0	1.02
3,4-Dinitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0
2,4-Diamino-6-nitrotoluene	0	0
tris(o-cresyl) phosphate	0	4.6

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 29-APR-14 11:39

GEL Data File: EXS04290002.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
2,4-Diamino-6-nitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
2,6-Diamino-4-nitrotoluene	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
3,4-Dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 01-MAY-14 19:17

GEL Data File: EXP0501009.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	.916
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 01-MAY-14 20:27

GEL Data File: EXP0501011.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	.903
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 02-MAY-14 03:27

GEL Data File: EXP0501023.wiff

Instrument ID: LCMSMS3

Column: Ultracarb Phenomenex 5u ODS (20)

Compound	True	Found (ug/L)
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	.865
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 29-APR-14 13:52

GEL Data File: EXS04290010.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
TATB	0	0
3,5-Dinitroaniline	0	1.05
3,4-Dinitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0
2,4-Diamino-6-nitrotoluene	0	0
tris(o-cresyl) phosphate	0	7.33

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 29-APR-14 14:26

GEL Data File: EXS04290012.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
TATB	0	0
3,5-Dinitroaniline	0	0
3,4-Dinitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0
2,4-Diamino-6-nitrotoluene	0	0
tris(o-cresyl) phosphate	0	2.99

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2014-3154

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 29-APR-14 17:47

GEL Data File: EXS04290024.wiff

Instrument ID: LCMSMS4

Column: YMC J'sphere ODS-H80

Compound	True	Found (ug/L)
TATB	0	0
3,5-Dinitroaniline	0	0
3,4-Dinitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0
2,4-Diamino-6-nitrotoluene	0	0
tris(o-cresyl) phosphate	0	2.94

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
02-MAY-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LC-MS/MS	SW846 8321A Modified	Solid	LANL
Batch ID:	**Sample Numbers:**		
1378862	See Below		

Potentially affected work order(s)(SDG): 346281(2014-3154),346609(2014-3190),346610(2014-3191)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for MS/MSD, or PS/PSD

Failed Recovery for LCS/LCSD

Failed Recovery for MSD/PSD

Specification and Requirements Exception Description:	DER Disposition:
1. The LCS (1203065166) did not meet acceptance criteria for Tetryl at 32.6%. The limits are 36-131%.	1. The samples were sent back for re-extraction for Primary analytes only. Secondary data was reported from this batch and Primary data was reported from the re-extract batch only.
2. The MS (1203065167) did not meet acceptance criteria for the recovery of 2,6-Diamino-4-nitrotoluene at 52.4% and for 2,4-Diamino-6-nitrotoluene at 34.2%. The limits are 65-119% and 61-133% respectively. 3. The MSD (1203065168) did not meet acceptance criteria for the recovery of 2,6-Diamino-4-nitrotoluene at 52.6% and for 2,4-Diamino-6-nitrotoluene at 35.4%. The limits are 65-119% and 61-133% respectively.	2. & 3. Since similar recoveries were obtained between matrix spikes, the noted exceptions are attributed to sample matrix interference. The LCS met acceptance criteria for all target analytes, therefore the data are reported with the appropriate DER. The discrepancies are noted in the case narrative.

Originator's Name:

Lynne Russell 06-MAY-14

Data Validator/Group Leader:

Michael Penny 06-MAY-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
06-MAY-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LC-MS/MS	SW846 8321A Modified	Solid	LANL
Batch ID:	**Sample Numbers:**		
1384102	See Below		

Potentially affected work order(s)(SDG): 346281(2014-3154),346609(2014-3190),346610(2014-3191)

Application Issues:

Other

Sample Prepped out of Holding

Specification and Requirements Exception Description:	DER Disposition:
1. The Method Detection Limit Verification standard (EXP0502024) did not meet acceptance limits for 4-Nitrotoluene at 139%. The acceptance limits are 70-130%.	1. The biased high recovery is an indication that the instrument had more than the required sensitivity to detect 4-Nitrotoluene. Since 4-Nitrotoluene was not detected in the associated samples, the data are reported with the appropriate DER.
2. Samples did not meet the specified holding time requirements.	2. The samples were originally extracted within holding, but were re-extracted out of holding for Primary analytes only due to non-conforming LCS recoveries. Since the samples were within two times the holding period, only the data from the re-extraction are reported for Primary analytes. The data from the original extraction were reported for Secondary analytes only.

Originator's Name:

Lynne Russell 06-MAY-14

Data Validator/Group Leader:

Michael Penny 06-MAY-14

Metals Analysis

Case Narrative

Metals Fractional Narrative
ARS International, LLC (ARSL)
SDG 2014-3154

Sample Analysis

Sample ID	Client ID
346281001	CACV-14-49240
346281002	CAWA-14-49282
346281003	CAWA-14-49265
346281004	CAWA-14-49280
346281005	CAWA-14-49266
346281006	CACV-14-49241
1203070775	Method Blank (MB) **ICP**
1203070837	Method Blank (MB) **ICP**
1203070776	Laboratory Control Sample (LCS)
1203070838	Laboratory Control Sample (LCS)
1203070779	346539001(CACB-14-75330L) Serial Dilution (SD)
1203070841	346771006(CAPA-14-56394L) Serial Dilution (SD)
1203070777	346539001(CACB-14-75330D) Sample Duplicate (DUP)
1203070778	346539001(CACB-14-75330S) Matrix Spike (MS)
1203070840	346771006(CAPA-14-56394S) Matrix Spike (MS)
1203070842	346771006(CAPA-14-56394SD) Matrix Spike Duplicate (MSD)
1203080300	346539001(CACB-14-75330PS) Post Spike (PS)
1203081842	346771006(CAPA-14-56394PS) Post Spike (PS)
1203072728	Method Blank (MB) **ICP-MS**
1203078137	Method Blank (MB) **ICP-MS**
1203072729	Laboratory Control Sample (LCS)
1203078138	Laboratory Control Sample (LCS)
1203072732	346403001(CAMO-14-75317L) Serial Dilution (SD)
1203078141	346403010(CAMO-14-75328L) Serial Dilution (SD)
1203072730	346403001(CAMO-14-75317D) Sample Duplicate (DUP)
1203078139	346403010(CAMO-14-75328D) Sample Duplicate (DUP)
1203072731	346403001(CAMO-14-75317S) Matrix Spike (MS)
1203078140	346403010(CAMO-14-75328S) Matrix Spike (MS)
1203079393	346403010(CAMO-14-75328PS) Post Spike (PS)
1203074627	Method Blank (MB) **CVAA**
1203075638	Method Blank (MB) **CVAA**

1203074628	Laboratory Control Sample (LCS)
1203075639	Laboratory Control Sample (LCS)
1203075642	346280001(CACH-14-56607L) Serial Dilution (SD)
1203074631	346281002(CAWA-14-49282L) Serial Dilution (SD)
1203075640	346280001(CACH-14-56607D) Sample Duplicate (DUP)
1203074629	346281002(CAWA-14-49282D) Sample Duplicate (DUP)
1203075641	346280001(CACH-14-56607S) Matrix Spike (MS)
1203074630	346281002(CAWA-14-49282S) Matrix Spike (MS)

Samples 346281 001, 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight" basis. Sample 346281 002 in this SDG was analyzed on an "as received" basis.

Method/Analysis Information

Analytical Batch:	1381111, 1381143, 1381872, 1384028, 1382562 and 1382952
Prep Batch :	1381110, 1381142, 1381871, 1384027, 1382561 and 1382951
Standard Operating Procedures:	GL-MA-E-013 REV# 22, GL-MA-E-009 REV# 23, GL-MA-E-006 REV# 10, GL-MA-E-014 REV# 25 and GL-MA-E-010 REV# 27
Analytical Method:	SW846 3050B/6010C, SW846 3005A/6010C, SW846 3050B/6020A, SW846 3005A/6020A, EPA 245.1/245.2 and SW846 7471A
Prep Method :	SW846 3050B, SW846 3005A, EPA 245.1/245.2 Prep and SW846 7471A Prep

Preparation/Analytical Method Verification
The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass

spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL/PQL Requirements
The CRDL standards for SW846 6020A met the advisory control limits except for thallium in file 140502-6 at 00:24. Thallium recovered high in the closing CRDL standard and was not detected above the MDL in the associated aqueous client sample.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blanks (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 346539001 (CACB-14-75330), 346771006 (CAPA-14-56394)-ICP, 346403001 (CAMO-14-

75317), 346403010 (CAMO-14-75328)-ICP-MS, 346281002 (CAWA-14-49282) and 346280001 (CACH-14-56607)-CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS did not meet all the recommended quality control acceptance criteria for percent recoveries for the applicable analytes. The recoveries for calcium and magnesium were not within the acceptance limits in sample 1203070778 (CACB-14-75330)-ICP. The recovery for aluminum was not within the acceptance limits in sample 1203070840 (CAPA-14-56394)-ICP. The recovery for thallium was not within the acceptance limits in sample 1203078140 (CAMO-14-75328)-ICP-MS. See data exception reports (DER ID 1289652, 1289394, and 1289806) in the miscellaneous data section of this data package.

Duplicate Relative Percent Difference (RPD) Statement
The relative percent difference (RPD) obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the contract required detection limit (RL), a control of +/-RL is used to evaluate the DUP results. Not all applicable analytes met these requirements. The RPD value for calcium was not within the acceptance limits in sample 1203070777 (CACB-14-75330)-ICP. See data exception report (DER ID 1289652) in the miscellaneous data section of this data package.

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recovery for thallium and verifies the presence of matrix interferences.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the established acceptance percent difference criteria.

Matrix Spike Duplicate (MSD) Recovery Statement
The percent recovery (%R) obtained from the MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MSD did not meet all the recommended quality control acceptance criteria for percent recoveries for the applicable analytes. The recovery for aluminum was not within the acceptance limits in sample 1203070842 (CAPA-14-56394)-ICP. See data exception report (DER ID 1289806) in the miscellaneous data section of this data package.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG were diluted the standard two times for solids analyzed on the ICP-MS.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. Data exception reports are included in the Miscellaneous Data section of the package. Data exception reports (DER ID 1289806, 1289394, and 1289652) were generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Pat Steele **Date:** 05/06/2014

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2014-3154 GEL Work Order: 346281

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

J Value is estimated

N Metals--The Matrix spike sample recovery is not within specified control limits

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by Pat Steile 05/06/2014

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3154 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346281001 **BASIS:** Dry Weight **DATE COLLECTED** 07−APR−14

CLIENT ID: CACV−14−49240 **LEVEL:** Low **DATE RECEIVED** 09−APR−14

MATRIX: SED **%SOLIDS:** 98.8

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2350000	ug/kg		6590	19400	19400	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−36−0	Antimony	970	ug/kg	U	320	970	970	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−38−2	Arsenic	447	ug/kg	J	174	871	871	2	MS	PRB	05/01/14 05:11	140430−3	1381872
7440−39−3	Barium	43300	ug/kg		97	485	485	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−41−7	Beryllium	229	ug/kg		17.4	87.1	87.1	2	MS	PRB	05/01/14 05:11	140430−3	1381872
7440−43−9	Cadmium	485	ug/kg	U	97	485	485	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−70−2	Calcium	682000	ug/kg		7760	24200	24200	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−47−3	Chromium	5360	ug/kg		145	485	485	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−48−4	Cobalt	2120	ug/kg		145	485	485	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−50−8	Copper	2270	ug/kg		291	970	970	1	P	HSC	05/02/14 16:29	050214−1	1381111
7439−89−6	Iron	10100000	ug/kg		7760	24200	24200	1	P	HSC	05/02/14 16:29	050214−1	1381111
7439−92−1	Lead	5510	ug/kg		320	970	970	1	P	HSC	05/02/14 16:29	050214−1	1381111
7439−95−4	Magnesium	348000	ug/kg		8240	29100	29100	1	P	HSC	05/02/14 16:29	050214−1	1381111
7439−96−5	Manganese	379000	ug/kg		194	970	970	1	P	HSC	05/02/14 16:29	050214−1	1381111
7439−97−6	Mercury	11.8	ug/kg	U	3.96	11.8	11.8	1	AV	NOR1	04/28/14 13:17	042814S1−9	1382952
7440−02−0	Nickel	1380	ug/kg		87.1	348	348	2	MS	PRB	05/01/14 05:11	140430−3	1381872
7440−09−7	Potassium	359000	ug/kg		6210	24200	24200	1	P	HSC	05/02/14 16:29	050214−1	1381111
7782−49−2	Selenium	871	ug/kg	U	287	871	871	2	MS	PRB	05/01/14 05:11	140430−3	1381872
7440−22−4	Silver	180	ug/kg	J	97	485	485	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−23−5	Sodium	43400	ug/kg		6790	24200	24200	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−28−0	Thallium	348	ug/kg	U	52.3	348	348	2	MS	PRB	05/01/14 05:11	140430−3	1381872
7440−62−2	Vanadium	13200	ug/kg		97	485	485	1	P	HSC	05/02/14 16:29	050214−1	1381111
7440−66−6	Zinc	31600	ug/kg		388	970	970	1	P	HSC	05/02/14 16:29	050214−1	1381111

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381111	1381110	SW846 3050B	0.522	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.581	g	50	mL	04/29/14	MTM1
1382952	1382951	SW846 7471A Prep	0.514	g	30	mL	04/25/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3154 **CONTRACT:** LANL00114 **METHOD TYPE:** EPA

SAMPLE ID: 346281002 **BASIS:** As Received **DATE COLLECTED** 07−APR−14

CLIENT ID: CAWA−14−49282 **LEVEL:** Low **DATE RECEIVED** 09−APR−14

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7439−97−6	Mercury	0.20	ug/L	U	0.067	0.2	0.2	1	AV	NOR1	04/25/14 12:13	042514W1−10	1382562

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3154 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346281002 **BASIS:** As Received **DATE COLLECTED** 07−APR−14

CLIENT ID: CAWA−14−49282 **LEVEL:** Low **DATE RECEIVED** 09−APR−14

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	200	ug/L	U	68	200	200	1	P	HSC	05/02/14 13:35	050214−1	1381143
7440−36−0	Antimony	3	ug/L	U	1	3	3	1	MS	PRB	05/02/14 09:32	140501−8	1384028
7440−38−2	Arsenic	2.03	ug/L	J	1.7	5	5	1	MS	PRB	05/01/14 20:30	140501−7	1384028
7440−39−3	Barium	1.09	ug/L	J	1	5	5	1	P	HSC	05/02/14 13:35	050214−1	1381143
7440−41−7	Beryllium	5	ug/L	U	1	5	5	1	P	HSC	05/02/14 13:35	050214−1	1381143
7440−43−9	Cadmium	1	ug/L	U	0.11	1	1	1	MS	PRB	05/01/14 20:30	140501−7	1384028
7440−70−2	Calcium	96.5	ug/L	J	50	200	200	1	P	HSC	05/02/14 13:35	050214−1	1381143
7440−47−3	Chromium	10	ug/L	U	2	10	10	1	MS	PRB	05/01/14 20:30	140501−7	1384028
7440−48−4	Cobalt	5	ug/L	U	1	5	5	1	P	HSC	05/02/14 13:35	050214−1	1381143
7440−50−8	Copper	10	ug/L	U	3	10	10	1	P	HSC	05/02/14 13:35	050214−1	1381143
7439−89−6	Iron	100	ug/L	U	30	100	100	1	P	HSC	05/02/14 13:35	050214−1	1381143
7439−92−1	Lead	2	ug/L	U	0.5	2	2	1	MS	PRB	05/01/14 20:30	140501−7	1384028
7439−95−4	Magnesium	300	ug/L	U	110	300	300	1	P	HSC	05/02/14 13:35	050214−1	1381143
7439−96−5	Manganese	2.68	ug/L	J	2	10	10	1	P	HSC	05/02/14 13:35	050214−1	1381143
7440−02−0	Nickel	2	ug/L	U	0.5	2	2	1	MS	PRB	05/01/14 20:30	140501−7	1384028
7440−09−7	Potassium	150	ug/L	U	50	150	150	1	P	HSC	05/02/14 13:35	050214−1	1381143
7782−49−2	Selenium	5	ug/L	U	1.5	5	5	1	MS	PRB	05/01/14 20:30	140501−7	1384028
7440−22−4	Silver	1	ug/L	U	0.2	1	1	1	MS	PRB	05/01/14 20:30	140501−7	1384028
7440−23−5	Sodium	196	ug/L	J	100	300	300	1	P	HSC	05/02/14 13:35	050214−1	1381143
7440−28−0	Thallium	2	ug/L	U	0.45	2	2	1	MS	PRB	05/02/14 23:33	140502−6	1384028
7440−62−2	Vanadium	5	ug/L	U	1	5	5	1	P	HSC	05/02/14 13:35	050214−1	1381143
7440−66−6	Zinc	10	ug/L	U	3.3	10	10	1	P	HSC	05/02/14 13:35	050214−1	1381143

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381143	1381142	SW846 3005A	50	mL	50	mL	04/29/14	MTM1
1382562	1382561	EPA 245.1/245.2 Prep	20	mL	20	mL	04/24/14	AXS5
1384028	1384027	SW846 3005A	50	mL	50	mL	04/30/14	MTM1

***Analytical Methods:**

P **SW846 3005A/6010C**
MS **SW846 3005A/6020A**
AV **EPA 245.1/245.2**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3154 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346281003 **BASIS:** Dry Weight **DATE COLLECTED** 07−APR−14

CLIENT ID: CAWA−14−49265 **LEVEL:** Low **DATE RECEIVED** 09−APR−14

MATRIX: SED **%SOLIDS:** 98.1

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2790000	ug/kg		6860	20200	20200	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−36−0	Antimony	1010	ug/kg	U	333	1010	1010	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−38−2	Arsenic	466	ug/kg	J	191	956	956	2	MS	PRB	05/01/14 05:18	140430−3	1381872
7440−39−3	Barium	41000	ug/kg		101	505	505	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−41−7	Beryllium	282	ug/kg		19.1	95.6	95.6	2	MS	PRB	05/01/14 05:18	140430−3	1381872
7440−43−9	Cadmium	505	ug/kg	U	101	505	505	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−70−2	Calcium	720000	ug/kg		8080	25200	25200	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−47−3	Chromium	5810	ug/kg		151	505	505	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−48−4	Cobalt	2760	ug/kg		151	505	505	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−50−8	Copper	2860	ug/kg		303	1010	1010	1	P	HSC	05/02/14 16:32	050214−1	1381111
7439−89−6	Iron	9020000	ug/kg		8080	25200	25200	1	P	HSC	05/02/14 16:32	050214−1	1381111
7439−92−1	Lead	4920	ug/kg		333	1010	1010	1	P	HSC	05/02/14 16:32	050214−1	1381111
7439−95−4	Magnesium	470000	ug/kg		8580	30300	30300	1	P	HSC	05/02/14 16:32	050214−1	1381111
7439−96−5	Manganese	284000	ug/kg		202	1010	1010	1	P	HSC	05/02/14 16:32	050214−1	1381111
7439−97−6	Mercury	11	ug/kg	U	3.69	11	11	1	AV	NOR1	04/28/14 13:19	042814S1−9	1382952
7440−02−0	Nickel	2110	ug/kg		95.6	383	383	2	MS	PRB	05/01/14 05:18	140430−3	1381872
7440−09−7	Potassium	352000	ug/kg		6460	25200	25200	1	P	HSC	05/02/14 16:32	050214−1	1381111
7782−49−2	Selenium	956	ug/kg	U	316	956	956	2	MS	PRB	05/01/14 05:18	140430−3	1381872
7440−22−4	Silver	132	ug/kg	J	101	505	505	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−23−5	Sodium	38200	ug/kg		7070	25200	25200	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−28−0	Thallium	383	ug/kg	U	57.4	383	383	2	MS	PRB	05/01/14 05:18	140430−3	1381872
7440−62−2	Vanadium	13900	ug/kg		101	505	505	1	P	HSC	05/02/14 16:32	050214−1	1381111
7440−66−6	Zinc	25000	ug/kg		404	1010	1010	1	P	HSC	05/02/14 16:32	050214−1	1381111

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381111	1381110	SW846 3050B	0.505	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.533	g	50	mL	04/29/14	MTM1
1382952	1382951	SW846 7471A Prep	0.555	g	30	mL	04/25/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3154 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346281004 **BASIS:** Dry Weight **DATE COLLECTED** 07−APR−14

CLIENT ID: CAWA−14−49280 **LEVEL:** Low **DATE RECEIVED** 09−APR−14

MATRIX: SED **%SOLIDS:** 97.9

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2810000	ug/kg		6480	19100	19100	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−36−0	Antimony	953	ug/kg	U	315	953	953	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−38−2	Arsenic	318	ug/kg	J	198	990	990	2	MS	PRB	05/01/14 05:26	140430−3	1381872
7440−39−3	Barium	39600	ug/kg		95.3	477	477	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−41−7	Beryllium	259	ug/kg		19.8	99	99	2	MS	PRB	05/01/14 05:26	140430−3	1381872
7440−43−9	Cadmium	477	ug/kg	U	95.3	477	477	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−70−2	Calcium	711000	ug/kg		7630	23800	23800	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−47−3	Chromium	5760	ug/kg		143	477	477	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−48−4	Cobalt	2530	ug/kg		143	477	477	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−50−8	Copper	2830	ug/kg		286	953	953	1	P	HSC	05/02/14 16:35	050214−1	1381111
7439−89−6	Iron	9520000	ug/kg		7630	23800	23800	1	P	HSC	05/02/14 16:35	050214−1	1381111
7439−92−1	Lead	5530	ug/kg		315	953	953	1	P	HSC	05/02/14 16:35	050214−1	1381111
7439−95−4	Magnesium	462000	ug/kg		8100	28600	28600	1	P	HSC	05/02/14 16:35	050214−1	1381111
7439−96−5	Manganese	258000	ug/kg		191	953	953	1	P	HSC	05/02/14 16:35	050214−1	1381111
7439−97−6	Mercury	12.3	ug/kg	U	4.11	12.3	12.3	1	AV	NOR1	04/28/14 13:21	042814S1−9	1382952
7440−02−0	Nickel	2160	ug/kg		99	396	396	2	MS	PRB	05/01/14 05:26	140430−3	1381872
7440−09−7	Potassium	348000	ug/kg		6100	23800	23800	1	P	HSC	05/02/14 16:35	050214−1	1381111
7782−49−2	Selenium	990	ug/kg	U	327	990	990	2	MS	PRB	05/01/14 05:26	140430−3	1381872
7440−22−4	Silver	175	ug/kg	J	95.3	477	477	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−23−5	Sodium	43400	ug/kg		6670	23800	23800	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−28−0	Thallium	396	ug/kg	U	59.4	396	396	2	MS	PRB	05/01/14 05:26	140430−3	1381872
7440−62−2	Vanadium	15400	ug/kg		95.3	477	477	1	P	HSC	05/02/14 16:35	050214−1	1381111
7440−66−6	Zinc	24500	ug/kg		381	953	953	1	P	HSC	05/02/14 16:35	050214−1	1381111

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381111	1381110	SW846 3050B	0.536	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.516	g	50	mL	04/29/14	MTM1
1382952	1382951	SW846 7471A Prep	0.5	g	30	mL	04/25/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3154 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346281005 **BASIS:** Dry Weight **DATE COLLECTED** 07−APR−14

CLIENT ID: CAWA−14−49266 **LEVEL:** Low **DATE RECEIVED** 09−APR−14

MATRIX: SED **%SOLIDS:** 90.9

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2670000	ug/kg		6960	20500	20500	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−36−0	Antimony	1020	ug/kg	U	338	1020	1020	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−38−2	Arsenic	431	ug/kg	J	206	1030	1030	2	MS	PRB	05/01/14 05:33	140430−3	1381872
7440−39−3	Barium	31800	ug/kg		102	511	511	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−41−7	Beryllium	270	ug/kg		20.6	103	103	2	MS	PRB	05/01/14 05:33	140430−3	1381872
7440−43−9	Cadmium	511	ug/kg	U	102	511	511	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−70−2	Calcium	697000	ug/kg		8180	25600	25600	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−47−3	Chromium	4010	ug/kg		153	511	511	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−48−4	Cobalt	1690	ug/kg		153	511	511	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−50−8	Copper	2470	ug/kg		307	1020	1020	1	P	HSC	05/02/14 16:39	050214−1	1381111
7439−89−6	Iron	7380000	ug/kg		8180	25600	25600	1	P	HSC	05/02/14 16:39	050214−1	1381111
7439−92−1	Lead	5800	ug/kg		338	1020	1020	1	P	HSC	05/02/14 16:39	050214−1	1381111
7439−95−4	Magnesium	527000	ug/kg		8690	30700	30700	1	P	HSC	05/02/14 16:39	050214−1	1381111
7439−96−5	Manganese	213000	ug/kg		205	1020	1020	1	P	HSC	05/02/14 16:39	050214−1	1381111
7439−97−6	Mercury	12.4	ug/kg	U	4.16	12.4	12.4	1	AV	NOR1	04/28/14 13:22	042814S1−9	1382952
7440−02−0	Nickel	1900	ug/kg		103	412	412	2	MS	PRB	05/01/14 05:33	140430−3	1381872
7440−09−7	Potassium	399000	ug/kg		6550	25600	25600	1	P	HSC	05/02/14 16:39	050214−1	1381111
7782−49−2	Selenium	1030	ug/kg	U	340	1030	1030	2	MS	PRB	05/01/14 05:33	140430−3	1381872
7440−22−4	Silver	511	ug/kg	U	102	511	511	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−23−5	Sodium	68100	ug/kg		7160	25600	25600	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−28−0	Thallium	412	ug/kg	U	61.8	412	412	2	MS	PRB	05/01/14 05:33	140430−3	1381872
7440−62−2	Vanadium	10600	ug/kg		102	511	511	1	P	HSC	05/02/14 16:39	050214−1	1381111
7440−66−6	Zinc	24400	ug/kg		409	1020	1020	1	P	HSC	05/02/14 16:39	050214−1	1381111

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381111	1381110	SW846 3050B	0.538	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.534	g	50	mL	04/29/14	MTM1
1382952	1382951	SW846 7471A Prep	0.532	g	30	mL	04/25/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2014−3154 **CONTRACT:** LANL00114 **METHOD TYPE:** SW846

SAMPLE ID: 346281006 **BASIS:** Dry Weight **DATE COLLECTED** 07−APR−14

CLIENT ID: CACV−14−49241 **LEVEL:** Low **DATE RECEIVED** 09−APR−14

MATRIX: SED **%SOLIDS:** 99.72

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	1510000	ug/kg		6150	18100	18100	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−36−0	Antimony	905	ug/kg	U	299	905	905	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−38−2	Arsenic	201	ug/kg	J	192	962	962	2	MS	PRB	05/01/14 05:40	140430−3	1381872
7440−39−3	Barium	25200	ug/kg		90.5	453	453	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−41−7	Beryllium	132	ug/kg		19.2	96.2	96.2	2	MS	PRB	05/01/14 05:40	140430−3	1381872
7440−43−9	Cadmium	453	ug/kg	U	90.5	453	453	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−70−2	Calcium	447000	ug/kg		7240	22600	22600	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−47−3	Chromium	6750	ug/kg		136	453	453	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−48−4	Cobalt	2040	ug/kg		136	453	453	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−50−8	Copper	1870	ug/kg		272	905	905	1	P	HSC	05/02/14 16:42	050214−1	1381111
7439−89−6	Iron	16100000	ug/kg		7240	22600	22600	1	P	HSC	05/02/14 16:42	050214−1	1381111
7439−92−1	Lead	4100	ug/kg		299	905	905	1	P	HSC	05/02/14 16:42	050214−1	1381111
7439−95−4	Magnesium	248000	ug/kg		7690	27200	27200	1	P	HSC	05/02/14 16:42	050214−1	1381111
7439−96−5	Manganese	340000	ug/kg		181	905	905	1	P	HSC	05/02/14 16:42	050214−1	1381111
7439−97−6	Mercury	10.8	ug/kg	U	3.62	10.8	10.8	1	AV	NOR1	04/28/14 13:24	042814S1−9	1382952
7440−02−0	Nickel	863	ug/kg		96.2	385	385	2	MS	PRB	05/01/14 05:40	140430−3	1381872
7440−09−7	Potassium	219000	ug/kg		5790	22600	22600	1	P	HSC	05/02/14 16:42	050214−1	1381111
7782−49−2	Selenium	962	ug/kg	U	318	962	962	2	MS	PRB	05/01/14 05:40	140430−3	1381872
7440−22−4	Silver	240	ug/kg	J	90.5	453	453	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−23−5	Sodium	36800	ug/kg		6340	22600	22600	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−28−0	Thallium	385	ug/kg	U	57.7	385	385	2	MS	PRB	05/01/14 05:40	140430−3	1381872
7440−62−2	Vanadium	18100	ug/kg		90.5	453	453	1	P	HSC	05/02/14 16:42	050214−1	1381111
7440−66−6	Zinc	48000	ug/kg		362	905	905	1	P	HSC	05/02/14 16:42	050214−1	1381111

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1381111	1381110	SW846 3050B	0.554	g	50	mL	04/30/14	MTM1
1381872	1381871	SW846 3050B	0.521	g	50	mL	04/29/14	MTM1
1382952	1382951	SW846 7471A Prep	0.557	g	30	mL	04/25/14	AXS5

***Analytical Methods:**

P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**

Quality Control Summary

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−3154

Contract: LANL00114

Matrix: SED

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1203070775								
	Aluminum	6510	ug/kg	+/−19200	U	P	6510	19200
	Antimony	316	ug/kg	+/−958	U	P	316	958
	Barium	95.8	ug/kg	+/−479	U	P	95.8	479
	Cadmium	95.8	ug/kg	+/−479	U	P	95.8	479
	Calcium	8400	ug/kg	+/−23900	J	P	7660	23900
	Chromium	144	ug/kg	+/−479	U	P	144	479
	Cobalt	144	ug/kg	+/−479	U	P	144	479
	Copper	287	ug/kg	+/−958	U	P	287	958
	Iron	7660	ug/kg	+/−23900	U	P	7660	23900
	Lead	546	ug/kg	+/−958	J	P	316	958
	Magnesium	8140	ug/kg	+/−28700	U	P	8140	28700
	Manganese	192	ug/kg	+/−958	U	P	192	958
	Potassium	6130	ug/kg	+/−23900	U	P	6130	23900
	Silver	95.8	ug/kg	+/−479	U	P	95.8	479
	Sodium	6700	ug/kg	+/−23900	U	P	6700	23900
	Vanadium	95.8	ug/kg	+/−479	U	P	95.8	479
	Zinc	383	ug/kg	+/−958	U	P	383	958
1203070837								
	Aluminum	68	ug/L	+/−200	U	P	68	200
	Barium	1	ug/L	+/−5	U	P	1	5
	Beryllium	1	ug/L	+/−5	U	P	1	5
	Calcium	50	ug/L	+/−200	U	P	50	200
	Cobalt	1	ug/L	+/−5	U	P	1	5
	Copper	3	ug/L	+/−10	U	P	3	10
	Iron	80.1	ug/L	+/−100	J	P	30	100
	Magnesium	110	ug/L	+/−300	U	P	110	300
	Manganese	2.82	ug/L	+/−10	J	P	2	10
	Potassium	50	ug/L	+/−150	U	P	50	150
	Sodium	100	ug/L	+/−300	U	P	100	300
	Vanadium	1	ug/L	+/−5	U	P	1	5
	Zinc	3.3	ug/L	+/−10	U	P	3.3	10
1203072728								
	Arsenic	194	ug/kg	+/−969	U	MS	194	969
	Beryllium	19.4	ug/kg	+/−96.9	U	MS	19.4	96.9
	Nickel	96.9	ug/kg	+/−388	U	MS	96.9	388
	Selenium	320	ug/kg	+/−969	U	MS	320	969
	Thallium	58.1	ug/kg	+/−388	U	MS	58.1	388

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2014−3154

Contract: LANL00114

Matrix: SED

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1203074627								
	Mercury	0.067	ug/L	+/−0.2	U	AV	0.067	0.2
1203075638								
	Mercury	4.02	ug/kg	+/−12	U	AV	4.02	12
1203078137								
	Antimony	1	ug/L	+/−3	U	MS	1	3
	Arsenic	1.7	ug/L	+/−5	U	MS	1.7	5
	Cadmium	0.11	ug/L	+/−1	U	MS	0.11	1
	Chromium	−5.65	ug/L	+/−10	J	MS	2	10
	Lead	0.5	ug/L	+/−2	U	MS	0.5	2
	Nickel	0.5	ug/L	+/−2	U	MS	0.5	2
	Selenium	1.5	ug/L	+/−5	U	MS	1.5	5
	Silver	0.2	ug/L	+/−1	U	MS	0.2	1
	Thallium	0.45	ug/L	+/−2	U	MS	0.45	2

***Analytical Methods:**

P	**SW846 3005A/6010C**
P	**SW846 3050B/6010C**
MS	**SW846 3005A/6020A**
MS	**SW846 3050B/6020A**
AV	**SW846 7471A**
AV	**EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3154 **Client ID** CACB−14−75330S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 99.77

Sample ID: 346539001 **Spike ID:** 1203070778

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/kg		5000000		2520000		456000	544	N/A	P
Antimony	ug/kg	75−125	44300		512	J	45600	96.1		P
Barium	ug/kg	75−125	95700		51500		45600	96.9		P
Cadmium	ug/kg	75−125	45100		94.2	U	45600	99.1		P
Calcium	ug/kg	75−125	1450000		1510000		456000	−12.9	N	P
Chromium	ug/kg	75−125	49000		3080		45600	101		P
Cobalt	ug/kg	75−125	47200		2540		45600	98		P
Copper	ug/kg	75−125	51000		2680		45600	106		P
Iron	ug/kg		6470000		5940000		456000	115	N/A	P
Lead	ug/kg	75−125	52000		5690		45600	102		P
Magnesium	ug/kg	75−125	1350000		760000		456000	130	N	P
Manganese	ug/kg		278000		254000		45600	52.7	N/A	P
Potassium	ug/kg	75−125	1160000		597000		456000	124		P
Silver	ug/kg	75−125	47600		95.6	J	45600	104		P
Sodium	ug/kg	75−125	505000		39300		456000	102		P
Vanadium	ug/kg	75−125	55800		9680		45600	101		P
Zinc	ug/kg	75−125	65400		18600		45600	103		P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3154 **Client ID** CAPA−14−56394S

Contract: ESHL00714 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346771006 **Spike ID:** 1203070840

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Cobalt	ug/L	75−125	510		1	U	500	102		P
Copper	ug/L	75−125	541		3.21	J	500	107		P
Iron	ug/L	75−125	7200		1310		5000	118		P
Magnesium	ug/L	75−125	8000		2460		5000	111		P
Manganese	ug/L	75−125	523		8.22	J	500	103		P
Potassium	ug/L	75−125	10700		5350		5000	107		P
Sodium	ug/L		34500		28900		5000	112	N/A	P
Vanadium	ug/L	75−125	545		1.82	J	500	109		P
Zinc	ug/L	75−125	513		13.1		500	100		P
Aluminum	ug/L	75−125	9060		1900		5000	143	N	P
Barium	ug/L	75−125	585		57.5		500	105		P
Beryllium	ug/L	75−125	527		1	U	500	105		P
Calcium	ug/L	75−125	14800		9610		5000	103		P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−5a−

Matrix Spike Duplicate Summary

SDG NO. 2014−3154 **Client ID** CAPA−14−56394SD

Contract: ESHL00714 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346771006 **Spike ID:** 1203070842

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	75−125	8960		1900		5000	141	N	P
Barium	ug/L	75−125	578		57.5		500	104		P
Beryllium	ug/L	75−125	519		1	U	500	104		P
Calcium	ug/L	75−125	14800		9610		5000	104		P
Cobalt	ug/L	75−125	503		1	U	500	101		P
Copper	ug/L	75−125	534		3.21	J	500	106		P
Iron	ug/L	75−125	7170		1310		5000	117		P
Magnesium	ug/L	75−125	7920		2460		5000	109		P
Manganese	ug/L	75−125	517		8.22	J	500	102		P
Potassium	ug/L	75−125	10700		5350		5000	107		P
Sodium	ug/L		34800		28900		5000	119	N/A	P
Vanadium	ug/L	75−125	538		1.82	J	500	107		P
Zinc	ug/L	75−125	508		13.1		500	98.9		P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3154 **Client ID** CAMO−14−75317S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 88

Sample ID: 346403001 **Spike ID:** 1203072731

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Arsenic	ug/kg	75−125	5540		1080	J	5420	82.4		MS
Beryllium	ug/kg	75−125	5140		395		5420	87.6		MS
Nickel	ug/kg	75−125	6930		1960		5420	91.7		MS
Selenium	ug/kg	75−125	4650		368	U	5420	82.2		MS
Thallium	ug/kg	75−125	4420		104	J	5420	79.6		MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3154 **Client ID** CAWA−14−49282S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346281002 **Spike ID:** 1203074630

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75−125	2.08		0.067	U	2	104		AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3154 **Client ID** CACH−14−56607S

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 90.3

Sample ID: 346280001 **Spike ID:** 1203075641

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/kg	80−120	123		4.41	U	129	94.5		AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2014−3154 **Client ID** CAMO−14−75328S

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346403010 **Spike ID:** 1203078140

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Antimony	ug/L	75−125	51.1		1	U	50	102		MS
Arsenic	ug/L	75−125	47		1.7	U	50	90.7		MS
Cadmium	ug/L	75−125	50.2		0.11	U	50	100		MS
Chromium	ug/L	75−125	44.6		2	U	50	89.3		MS
Lead	ug/L	75−125	50.5		0.5	U	50	101		MS
Nickel	ug/L	75−125	52.7		1.14	J	50	103		MS
Selenium	ug/L	75−125	46.8		1.5	U	50	93.5		MS
Silver	ug/L	75−125	50.2		0.2	U	50	100		MS
Thallium	ug/L	75−125	17.7		0.45	U	50	35.5	N	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3154 **Client ID:** CAMO−14−75328PS

Contract: LANL00114 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346403010 **Spike ID:** 1203079393

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Thallium	ug/L	80−120	21.8		0.45	U	50	43.6	N	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−5a−

Spike Summary

SDG NO. 2014−3154 **Client ID** CACB−14−75330PS

Contract: LANL00114 **Level:** Low

Matrix: SOIL **% Solids:** 99.77

Sample ID: 346539001 **Spike ID:** 1203080300

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Calcium	ug/L	80−120	21800		16100		5000	116		P
Magnesium	ug/L	80−120	13500		8060		5000	109		P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−5a−

Spike Summary

SDG NO. 2014−3154 **Client ID** CAPA−14−56394PS

Contract: ESHL00714 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 346771006 **Spike ID:** 1203081842

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	80−120	6480		1900		5000	91.6		P

***Analytical Methods:**

P **SW846 3005A/6010C**

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3154 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACB−14−75330D

Matrix: SOIL **Level:** Low

Sample ID: 346539001 **Duplicate ID:** 1203070777 **Percent Solids for Dup:** 99.77

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/kg	+/−20%	2520000		2630000		4.12		P
Antimony	ug/kg		512	J	315	U	200		P
Barium	ug/kg	+/−20%	51500		51400		.318		P
Cadmium	ug/kg		94.2	U	95.5	U			P
Calcium	ug/kg	+/−20%	1510000		1030000		38.2	*	P
Chromium	ug/kg	+/−20%	3080		3720		18.8		P
Cobalt	ug/kg	+/−20%	2540		2640		3.76		P
Copper	ug/kg	+/−955	2680		2930		8.71		P
Iron	ug/kg	+/−20%	5940000		6620000		10.9		P
Lead	ug/kg	+/−20%	5690		5730		.703		P
Magnesium	ug/kg	+/−20%	760000		705000		7.53		P
Manganese	ug/kg	+/−20%	254000		250000		1.51		P
Potassium	ug/kg	+/−20%	597000		581000		2.57		P
Silver	ug/kg	+/−477	95.6	J	159	J	49.6		P
Sodium	ug/kg	+/−23900	39300		35000		11.6		P
Vanadium	ug/kg	+/−20%	9680		10900		11.4		P
Zinc	ug/kg	+/−20%	18600		20800		11.2		P

***Analytical Methods:**

P SW846 3050B/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3154 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAPA−14−56394SD

Matrix: WATER **Level:** Low

Sample ID: 1203070840 **Duplicate ID:** 1203070842 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/L	+/−20	9060		8960		1.06		P
Barium	ug/L	+/−20	585		578		1.26		P
Beryllium	ug/L	+/−20	527		519		1.58		P
Calcium	ug/L	+/−20	14800		14800		.244		P
Cobalt	ug/L	+/−20	510		503		1.29		P
Copper	ug/L	+/−20	541		534		1.17		P
Iron	ug/L	+/−20	7200		7170		.501		P
Magnesium	ug/L	+/−20	8000		7920		.982		P
Manganese	ug/L	+/−20	523		517		1.15		P
Potassium	ug/L	+/−20	10700		10700		.271		P
Sodium	ug/L	+/−20	34500		34800		1.02		P
Vanadium	ug/L	+/−20	545		538		1.22		P
Zinc	ug/L	+/−20	513		508		1.11		P

***Analytical Methods:**

P SW846 3005A/6010C

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3154 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAMO−14−75317D

Matrix: SOIL **Level:** Low

Sample ID: 346403001 **Duplicate ID:** 1203072730 **Percent Solids for Dup:** 88

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Arsenic	ug/kg	+/−1080	1080	J	989	J	8.77		MS
Beryllium	ug/kg	+/−108	395		354		10.9		MS
Nickel	ug/kg	+/−434	1960		1800		8.61		MS
Selenium	ug/kg		368	U	358	U			MS
Thallium	ug/kg	+/−434	104	J	67	J	43.3		MS

***Analytical Methods:**

MS SW846 3050B/6020A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3154 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAWA−14−49282D

Matrix: WATER **Level:** Low

Sample ID: 346281002 **Duplicate ID:** 1203074629 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.067	U	0.067	U			AV

***Analytical Methods:**

AV EPA 245.1/245.2

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3154 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CACH−14−56607D

Matrix: SOIL **Level:** Low

Sample ID: 346280001 **Duplicate ID:** 1203075640 **Percent Solids for Dup:** 90.3

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/kg		4.41	U	4.44	U			AV

***Analytical Methods:**

AV SW846 7471A

Metals
−6−
Duplicate Sample Summary

SDG No.: 2014−3154 **Lab Code:** GEL

Contract: LANL00114 **Client ID:** CAMO−14−75328D

Matrix: WATER **Level:** Low

Sample ID: 346403010 **Duplicate ID:** 1203078139 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		1	U	1	U			MS
Arsenic	ug/L		1.7	U	1.7	U			MS
Cadmium	ug/L		0.11	U	0.11	U			MS
Chromium	ug/L		2	U	2	U			MS
Lead	ug/L		0.5	U	0.5	U			MS
Nickel	ug/L	+/−2	1.14	J	0.635	J	57		MS
Selenium	ug/L		1.5	U	1.5	U			MS
Silver	ug/L		0.2	U	0.2	U			MS
Thallium	ug/L		0.45	U	0.45	U			MS

***Analytical Methods:**

MS SW846 3005A/6020A

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3154

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203070776								
	Aluminum	ug/kg	8680000	6440000		74.2	44.9−154.4	P
	Antimony	ug/kg	166000	193000		116	33.1−167.3	P
	Barium	ug/kg	290000	270000		92.9	82.8−117.6	P
	Cadmium	ug/kg	85000	80200		94.3	84−115.9	P
	Calcium	ug/kg	6120000	5760000		94	83.2−117	P
	Chromium	ug/kg	168000	164000		97.4	81.5−117.9	P
	Cobalt	ug/kg	87000	84700		97.3	84.8−114.9	P
	Copper	ug/kg	187000	196000		105	84−116.6	P
	Iron	ug/kg	12500000	13000000		104	50.5−148.8	P
	Lead	ug/kg	120000	114000		95.4	83.3−116.7	P
	Magnesium	ug/kg	2920000	2640000		90.3	75−125.3	P
	Manganese	ug/kg	310000	301000		97	82.6−117.4	P
	Potassium	ug/kg	2780000	2320000		83.3	69.1−130.9	P
	Silver	ug/kg	55200	59000		107	66.3−133.7	P
	Sodium	ug/kg	504000	478000		94.9	73.6−126.4	P
	Vanadium	ug/kg	138000	143000		104	79.7−120.3	P
	Zinc	ug/kg	206000	193000		93.8	82−118	P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3154

Contract: LANL00114

Aqueous LCS Source: OS2I **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203070838								
	Aluminum	ug/L	5000	5170		103	80−120	P
	Barium	ug/L	500	522		104	80−120	P
	Beryllium	ug/L	500	520		104	80−120	P
	Calcium	ug/L	5000	5100		102	80−120	P
	Cobalt	ug/L	500	509		102	80−120	P
	Copper	ug/L	500	516		103	80−120	P
	Iron	ug/L	5000	5260		105	80−120	P
	Magnesium	ug/L	5000	5310		106	80−120	P
	Manganese	ug/L	500	512		102	80−120	P
	Potassium	ug/L	5000	5170		103	80−120	P
	Sodium	ug/L	5000	5360		107	80−120	P
	Vanadium	ug/L	500	534		107	80−120	P
	Zinc	ug/L	500	495		98.9	80−120	P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3154

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203072729								
	Arsenic	ug/kg	137000	135000		98.4	83.2−117.5	MS
	Beryllium	ug/kg	138000	142000		103	84.1−115.9	MS
	Nickel	ug/kg	159000	164000		103	84.3−115.7	MS
	Selenium	ug/kg	43500	43200		99.3	77.9−122.3	MS
	Thallium	ug/kg	146000	148000		101	81.5−119.2	MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3154

Contract: LANL00114

Aqueous LCS Source: GEL **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203074628								
	Mercury	ug/L	2	2.1		105	85−115	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3154

Contract: LANL00114

Aqueous LCS Source: **Solid LCS Source:** ERA

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203075639								
	Mercury	ug/kg	7690	6500		84.5	71.4−129	AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2014−3154

Contract: LANL00114

Aqueous LCS Source: O2Si **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1203078138								
	Antimony	ug/L	50	51.9		104	80−120	MS
	Arsenic	ug/L	50	52.8		106	80−120	MS
	Cadmium	ug/L	50	54.6		109	80−120	MS
	Chromium	ug/L	50	50.3		101	80−120	MS
	Lead	ug/L	50	53.5		107	80−120	MS
	Nickel	ug/L	50	56.8		114	80−120	MS
	Selenium	ug/L	50	49.9		99.9	80−120	MS
	Silver	ug/L	50	52.8		106	80−120	MS
	Thallium	ug/L	50	47.3		94.5	80−120	MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3154 **Client ID** CACB−14−75330L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 346539001 **Serial Dilution ID:** 1203070779

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	26800		26300		1.58		10	P
Antimony	5.44	J	16.5	U	100			P
Barium	547		555		1.42		10	P
Cadmium	1	U	5	U				P
Calcium	16100		15900		.766		10	P
Chromium	32.7		33.9		3.56			P
Cobalt	27		27.4		1.82			P
Copper	28.5		28.7	J	.667			P
Iron	63000		61800		2.05		10	P
Lead	60.4		60.4		.022			P
Magnesium	8060		7810		3.19		10	P
Manganese	2690		2770		2.7		10	P
Potassium	6330		6210		1.94		10	P
Silver	1.01	J	5	U	100			P
Sodium	417		498	J	19.2			P
Vanadium	103		106		2.92		10	P
Zinc	197		194		1.64			P

***Analytical Methods:**

P **SW846 3050B/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3154 **Client ID** CAPA−14−56394L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 346771006 **Serial Dilution ID:** 1203070841

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	1900		1990		4.35			P
Barium	57.5		56.9		1.15		10	P
Beryllium	1	U	5	U				P
Calcium	9610		9300		3.19		10	P
Cobalt	1	U	5	U				P
Copper	3.21	J	15	U	100			P
Iron	1310		1310		.195			P
Magnesium	2460		2500		1.7			P
Manganese	8.22	J	10	U	100			P
Potassium	5350		5390		.682		10	P
Sodium	28900		28700		.677		10	P
Vanadium	1.82	J	5	U	100			P
Zinc	13.1		16.5	U	100			P

***Analytical Methods:**

P **SW846 3005A/6010C**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3154 **Client ID** CAMO−14−75317L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 346403001 **Serial Dilution ID:** 1203072732

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Arsenic	4.83	J	5.19	J	7.28			MS
Beryllium	1.77		1.54	J	13.2			MS
Nickel	8.78		8.64	J	1.58			MS
Selenium	1.65	U	8.25	U				MS
Thallium	.466	J	1.5	U	100			MS

***Analytical Methods:**

MS **SW846 3050B/6020A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3154 **Client ID** CAWA−14−49282L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 346281002 **Serial Dilution ID:** 1203074631

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3154 **Client ID** CACH−14−56607L

Contract: LANL00114

Matrix: SOLID **Level:** Low

Sample ID: 346280001 **Serial Dilution ID:** 1203075642

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **SW846 7471A**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2014−3154 **Client ID** CAMO−14−75328L

Contract: LANL00114

Matrix: LIQUID **Level:** Low

Sample ID: 346403010 **Serial Dilution ID:** 1203078141

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	1	U	5	U				MS
Arsenic	1.7	U	8.5	U				MS
Cadmium	.11	U	.55	U				MS
Chromium	2	U	10	U				MS
Lead	.5	U	2.5	U				MS
Nickel	1.14	J	2.5	U	100			MS
Selenium	1.5	U	7.5	U				MS
Silver	.2	U	1	U				MS
Thallium	.45	U	23.5					MS

***Analytical Methods:**

MS **SW846 3005A/6020A**

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
05-MAY-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP/MS	SW846 3005A/6020A	Liquid	LANL
Batch ID:	**Sample Numbers:**		
1384028	See Below		

Potentially affected work order(s)(SDG): 346281(2014-3154),346403(2014-3161)

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203078140MS,1203079393PS	The matrix spike recovery failed outside of the control limits for Thallium. The post spike failed outside the required control limits for Thallium. This verifies the presence of a matrix interference for Thallium. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.

Originator's Name:

Paul Boyd 05-MAY-14

Data Validator/Group Leader:

Samantha Jacobs 05-MAY-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
06-MAY-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW846 3050B/6010C	Solid	LANL
Batch ID:	**Sample Numbers:**		
1381111	See Below		

Potentially affected work order(s)(SDG): 346281(2014-3154),346403(2014-3161),346412(2014-3162),346539(2014-3181)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for DUP

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203070778MS 2. Failed RPD for DUP: QC 1203070777DUP	1. The matrix spike recovery failed outside of the control limits for calcium and magnesium. The post spike passed the required control limits for all analytes. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. 2. The sample and sample duplicate % RPD failed outside the control limits for calcium due to possible sample non-homogeneity and/or matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported. Sample #346539001 is a light brown sand like substance.

Originator's Name:

Helen Camello 06-MAY-14

Data Validator/Group Leader:

Louise Smith 06-MAY-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
06-MAY-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW846 3005A/6010C	Liquid	ESHL, LANL
Batch ID:	**Sample Numbers:**		
1381143	See Below		

Potentially affected work order(s)(SDG): **346281(2014-3154),346403(2014-3161),346430(2014-3163),346447(2014-3165),346510(2014-3176),346514(2014-3179),346533(2014-3180),346539(2014-3181),346610(2014-3191),346613(2014-3194),346676(2014-3198),346679(2014-3200),346771(2014-3209),346986(201-3232)**

Application Issues:

Failed Recovery for MS/PS

Failed Recovery for MSD/PSD

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203070840MS 2. Failed Recovery for MSD/PSD: QC 1203070842MSD	1./2. The matrix spike and matrix spike duplicate recovery failed outside of the control limits for aluminum and silica. The post spike passed the required control limits for all analytes. This verifies the absence of a matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.

Originator's Name:
Helen Camello 06-MAY-14

Data Validator/Group Leader:
Jerry Wigfall 06-MAY-14

Field Sample Result Record No	Chain Of Custody No	Field Sample ID	Excavated Flag	Sampling Method	Sample Usage Code	Field Prep Code	Sample Purpose	Location ID	Start Depth	End Depth	Depth Units	Sample Type	Background Comparison Class Code	Parameter Code	Parameter Name	Percent Moisture	Lab MDA	Dilution Factor	Report Result	Report Units	Validation Qualifier	Report Detection Limit	Method Detection Limit	Report MDA	Report Uncertainty	Best Value Flag	Method Category	Analytical Method	Lab ID	Analysis Date	Date Sampled

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Field Sample Result Record No	Chain Of Custody No	Field Sample ID	Excavated Flag	Sampling Method	Sample Usage Code	Field Prep Code	Sample Purpose	Site ID	Location ID	Start Depth	End Depth	Depth Units	Sample Type	Background Comparison Class Code	Parameter Code	Parameter Name	Percent Moisture	Lab MDA	Dilution Factor	Report Result	Report Units	Validation Qualifier	Report Detection Limit	Method Detection Limit	Report MDA	Report Uncertainty	Best Value Flag	Method Category	Analytical Method	Lab ID	Analysis Date	Date Sampled

1144852	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	As	Arsenic	10	1	1.96	ug/L	U	U	5	1.7	Y	INORGANIC	SW-846:602	GELC	5/1/2014	4/4/201
11448522	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Ba	Barium	10	1	5	ug/L	U	U	5	1	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448523	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Be	Beryllium	10	1	5	ug/L	U	U	5	1	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448525	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Ca	Calcium	10	1	0.062	mg/L	J	J	0.2	50	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448524	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Cd	Cadmium	10	1	1	ug/L	U	U	1	0.11	Y	INORGANIC	SW-846:602	GELC	5/1/2014	4/4/201
11448527	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Co	Cobalt	10	1	5	ug/L	U	U	5	1	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448526	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Cr	Chromium	10	1	10	ug/L	U	U	10	2	Y	INORGANIC	SW-846:602	GELC	5/1/2014	4/4/201
11448528	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Cu	Copper	10	1	10	ug/L	U	U	10	3	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448529	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Fe	Iron	10	1	36.4	ug/L	J	J	100	30	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448530	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Hg	Mercury	10	1	0.2	ug/L	U	U	0.2	0.067	Y	INORGANIC	EPA:245.1	GELC	4/23/201	4/4/201
11448535	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	K	Potassium	10	1	0.15	mg/L	U	U	0.15	50	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
1144853	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Mg	Magnesium	10	1	0.3	mg/L	U	U	0.3	110	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448532	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Mn	Manganese	10	1	10	ug/L	U	U	10	2	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448536	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Na	Sodium	10	1	0.19	mg/L	J	J	0.3	100	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
11448534	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Ni	Nickel	10	1	2	ug/L	U	U	2	0.5	Y	INORGANIC	SW-846:602	GELC	5/1/2014	4/4/201
11448538	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Pb	Lead	10	1	2	ug/L	U	U	2	0.5	Y	INORGANIC	SW-846:602	GELC	5/1/2014	4/4/201
11448529	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Sb	Antimony	10	1	3	ug/L	U	U	3	1	Y	INORGANIC	SW-846:602	GELC	5/2/2014	4/4/201
11448539	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Se	Selenium	10	1	5	ug/L	U	U	5	1.5	Y	INORGANIC	SW-846:602	GELC	5/1/2014	4/4/201
11448538	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Tl	Thallium	10	1	2	ug/L	U	U	2	0.45	Y	INORGANIC	SW-846:602	GELC	5/1/2014	4/4/201
11448540	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	V	Vanadium	10	1	5	ug/L	U	U	5	1	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201
1144854	2014-313	CAWA-14-4928	N	DC	QC	NA	FR	LANL	WA-6149	W	Zn	Zinc	10	1	10	ug/L	U	U	10	3.3	Y	INORGANIC	SW-846:6010	GELC	5/1/2014	4/4/201