

**INVESTIGATION OF COAL AND PETROLEUM COKE
OCCURRENCES IN RESTORATION PROJECTS USING
MISSISSIPPI RIVER SEDIMENT REPORT**

***Coastal Protection and Restoration Authority of Louisiana
Three Coastal Restoration Projects: BA-39, BA-40, & BA-42
Plaquemines and Jefferson Parish, Louisiana***

Project No. 153673

July 2015

Prepared for:

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CPRA Environmental Services Contract Number: 2503-13-44
CPRA Task Number: 13

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Acronyms and Abbreviations

| | |
|----------|--|
| AET | Apparent Effects Threshold |
| AR/COC | Analysis Request/Chain-of-Custody |
| CPRA | Coastal Protection and Restoration Authority |
| CWPPRA | Coastal Wetlands Planning, Protection, & Restoration Act |
| EPA | U.S. Environmental Protection Agency |
| ERL | Effects Range-Low |
| ERM | Effects Range-Median |
| FADL | Field Activity Daily Log |
| GC/MS | Gas Chromatograph/Mass Spectrometer |
| GRN | Gulf Restoration Network |
| HASP | Health and Safety Plan |
| JSA | Job Safety Analysis |
| LCS | Laboratory Control Sample |
| LDEQ | Louisiana Department of Environmental Quality |
| MS/MSD | Matrix spikes/Matrix spike duplicate |
| NOAA | National Oceanic and Atmospheric Administration |
| OSHA | Occupational Safety and Health Administration |
| PAH | Polycyclic Aromatic Hydrocarbons |
| PCB | Polychlorinated Biphenyls |
| Pet Coke | Petroleum Coke |
| QA/QC | Quality Assurance/Quality Control |
| SDG | Sample Delivery Group |
| SQIRTs | Screening Quick Reference Tables |
| TEL | Threshold Effects Level |
| TOC | Total Organic Carbon |
| TPH-DRO | Total Petroleum Hydrocarbons – Diesel Range Organics |
| TPH-ORO | Total Petroleum Hydrocarbons – Oil Range Organics |

Executive Summary

On behalf of Coastal Protection and Restoration Authority of Louisiana (CPRA), CB&I Environmental and Infrastructure, Inc. (CB&I) has prepared an Investigation Report for three coastal restoration projects: the Bayou Dupont Mississippi River Sediment Delivery System (CPRA Project Number BA-39), the Scofield Island Restoration Project (BA-40), and the Lake Hermitage Marsh Creation Project (BA-42) located in Plaquemines and Jefferson Parishes. The purpose of the investigation was to perform a reconnaissance-level survey to determine the extent of coal and petroleum coke (pet coke) and the presence and potential toxicological effects of polycyclic aromatic hydrocarbons (PAHs) and/or metals resulting from coal/pet coke present in the surface and subsurface media, along with evaluating the potential effects that such substances could have on receiving basin biota. The investigation activities consisted of a surface coal/pet coke survey that estimated the quantity and spatial extent, and physical characteristics of surficial expression (via visual survey) and subsurface occurrence (via soil borings), along with chemical and benthic toxicity analyses.

Investigation activities were conducted by CB&I personnel at the Bayou Dupont site from January 30 and 31 and on February 26, 2015; at the Scofield Island site on January 28 and 29, 2015; and at the Lake Hermitage site on January 26 to 28 and February 26, 2015. During the investigation activities, the restoration site locations were observed and soil borings were installed for collection of fill material samples for laboratory chemical and benthic toxicity testing.

Upon receipt, the chemical laboratory analytical results for the samples from all three sites were compared to the National Oceanic and Atmospheric Administration's (NOAA's) Screening Quick Reference Tables (SQuiRTs) Effects Range Low (ERL) and Effects Range Medium (ERM) for marine sediment where ERL and ERM values were available; otherwise, sampled concentrations were compared to the Apparent Effects Threshold (AET) for marine sediments. The ERL, ERM, and AET values are specific chemical concentrations that were derived from compiled biological toxicity assays and synoptic sampling of marine sediment. ERL and ERM values are guidelines to help categorize the range of concentration in sediment where effects are scarcely observed (below the ERL) and the range above which effects are generally observed (above the ERM). AET values are essentially equivalent to the concentration observed in the highest non-toxic sample, above which adverse biological impacts to the tested organism would be expected.

The results of the field observations, field testing, and laboratory analyses of the fill material samples indicated the following:

- The surface extent of coal/pet coke from the field observations at all three restoration sites is thinly sporadic and sparse in most areas.
- The subsurface occurrence and extent of coal/pet coke from the soil borings, field sieve testing, and gravimetric testing appears to be somewhat related to the surface occurrence of coal/pet coke. Almost all the sampling locations where gravimetric testing was completed exhibited the presence of coal/pet coke fines in the subsurface soil but typically at very low percentages. Sites with higher percentages of surface coal/pet coke cover appear to exhibit higher percentages of coal/pet coke fines in the subsurface fill material in at least two of the three sites (Lake Hermitage site and to a lesser extent at the Scofield Island site).
- The laboratory grain-size analysis results for all three sites indicate the fill material consisted predominately of fine-grained sand with silt and little to no clay.
- The laboratory results for metals and PAHs indicates an apparent relationship between the number and concentrations of the metals and PAH constituents with the higher percentages of coal/pet coke, specifically at the Lake Hermitage site where locations with the highest coal/pet coke percentages were observed and sampled. The results indicated the presence of more PAH constituents at concentrations above the SQuiRT ERLs but below the ERMs, at the sample locations with the higher coal/pet coke percentages from the Lake Hermitage site. It was also noted that there can be significant variability in the analytical results for soil samples due to the inherent variability in the individual aliquot of soil that is selected from the sample for analysis. Based on these results, it is likely that the samples with the higher concentrations of PAHs and metals were the results of coal/pet coke particles in the samples that were analyzed by the laboratory.
- The results of the Synthetic Precipitation Leaching Procedure (SPLP) testing at all three restoration sites indicated the metals and PAH constituents do not appear to be leachable to the environment. The lack of leachable constituents from the SPLP results is a strong indication that the fill material samples with the higher total PAH and metal constituent concentrations are likely the result of coal in the samples. If coal/pet coke particles were present in the samples analyzed by the SPLP method, the absence of leachable constituents from the SPLP tests strongly supports the low potential for these constituents to leach from the coal/pet coke to the fill material (sediments) and the environment.
- The results for the benthic toxicity testing indicated the fill material at all three sites is not acutely toxic to benthic organisms. Overall, the acute toxicity results appear to be similar from all three sites with no obvious increases at the sites with higher percentages of coal/pet coke or above background levels.

Based on the results of the investigation, PAH constituents were identified at the Lake Hermitage site that exceeded the SQuiRT ERLs (but were below the ERMs/AETs). None of the other sites (Bayou Dupont or Scofield Island) exhibited constituent concentrations above the SQuiRT

ERLs/ERMs or AETs. Application/comparison of the ERL/ERM criteria to the restoration sites is considered a rough tool for relating constituent concentrations in sediments/fill material to potential toxicity.

In general, the majority of the investigation data from the three project sites indicate the presence of coal/pet coke at the identified concentrations do not appear to represent an obvious environmental concern based on the results of the benthic toxicity testing, SPLP testing, and the comparison of the metals and PAH data to the SQuiRT ERLs, ERMs or AETs. Specifically, however, the investigation data from the sample locations at the Lake Hermitage site that exhibited higher surface and subsurface coal/pet coke content (primarily at three sample locations) may suggest a potential environmental concern based on the exceedances of the SQuiRT ERLs for the PAH constituents. The environmental concern is considered to be relatively low because the PAH concentrations in the referenced samples are above the range of where effects are scarcely observed (below the ERL) but below the range of which effects are generally observed (above the ERM). It is also important to note that numerous PAH constituents were detected in the Mississippi River borrow material samples (from Bayou Dupont site previous investigation) with one PAH constituent (fluorene) exceeding its respective ERL (but below the ERM). The source of the PAH constituents in the Mississippi River borrow samples is not known with certainty. There may be other potential sources of PAHs in the borrow sediments besides the coal/pet coke based on the historical and current industrial operations that are conducted on and near the Mississippi River and the runoff and sediments that are discharged into the river from these sources.

1.0 Introduction

On behalf of Coastal Protection and Restoration Authority of Louisiana (CPRA), CB&I Environmental and Infrastructure, Inc. (CB&I) has prepared this Investigation Report for three coastal restoration projects: the Bayou Dupont Mississippi River Sediment Delivery System (CPRA Project Number BA-39), the Scofield Island Restoration Project (BA-40), and the Lake Hermitage Marsh Creation Project (BA-42). These project sites are located in Plaquemines Parish and Jefferson Parish, Louisiana. The purpose of this investigation is to perform a reconnaissance-level survey to determine the extent of coal and petroleum coke (pet coke) and the presence and potential toxicological effects of polycyclic aromatic hydrocarbons (PAHs) and/or metals resulting from coal/pet coke present in the surface and subsurface media, along with evaluating the potential effects that such substances could have on receiving basin biota. The investigation activities consisted of a surface coal/pet coke survey that estimated the quantity and spatial extent, and physical characteristics of surficial expression (via visual survey) and subsurface occurrence (via soil borings), along with chemical and benthic toxicity analysis.

1.1 Site History and Description

CPRA has utilized Mississippi River sediment to restore wetlands in Plaquemines Parish and Jefferson Parish. On September 2, 2014 The Times Picayune reported that pieces of coal and pet coke were found on portions of the marsh platforms created by the pumping of sediment from the Mississippi River near the Lake Hermitage and the Bayou Dupont restoration projects located on the west side of the Mississippi River in Plaquemines Parish. During a site visit on August 28, 2014, coal and pet coke were observed at both sites including lumps of coal mixed with sediment flowing from the sediment pipeline at Lake Hermitage. The article also states that representatives of the Gulf Restoration Network (GRN) also observed coal and pet coke at the Lake Hermitage site on that same day. GRN filed a complaint with the National Response Center who forwarded information to the Louisiana Department of Environmental Quality (LDEQ) for investigation.

The LDEQ completed an incident report in response to the GRN's complaint after visually surveying approximately 100 acres of the Lake Hermitage project area and verified that the material was unburned coal. The LDEQ considered the coal to be inert and not an environmental threat, nor a threat to wildlife, and indicated that there were no plans to conduct any further analysis.

CPRA, however, has heard from some of its partners that there may still be some environmental concerns (whether real or perceived) regarding leaching of toxins from the coal and pet coke, and potential bioavailability of leachates. The Mississippi River is a critical borrow source for many

PRA Master Plan projects and without this source of material, a number of critical projects would be compromised. Therefore, CPRA was interested in empirically determining the characteristics and environmental threat of the coal and pet coke material found in its projects constructed with Mississippi River sediments.

This project encompassed work at three coastal restoration sites located in Plaquemines and Jefferson Parishes. The location of the three sites is presented on **Figure 1**.

1.1.1 Bayou Dupont

The Bayou Dupont Mississippi River Sediment Delivery System (BA-39) is located adjacent to Bayou Dupont and southeast of Cheniere Traverse Bayou, approximately 3.7 miles northwest of Myrtle Grove, Louisiana (**Figure 1**). Project features are located in Plaquemines and Jefferson Parishes. The area lies west of Louisiana Highway 23 and just north of the Myrtle Grove Marina within the Barataria Basin. The Site is located in Sections 16, 48, 49, and 50 of Township 16 South, Range 24 East. A site layout map with observation and soil sample locations is included as **Figure 2**.

The Bayou Dupont Project (BA-39) represented the first example of pipeline transport of sediment from the river to build marsh as a Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) project. The project involved dredging sediment from the Mississippi River for marsh creation and pumping it via pipeline into an area of open water and broken marsh west of the Plaquemines Parish flood protection levee in the rapidly eroding and subsiding section of the Barataria land bridge. This project created marsh using Mississippi River sediment as opposed to hydraulically dredging material from within the Barataria Basin.

1.1.2 Scofield Island

The Scofield Island Restoration Project (BA-40) is located on Scofield Island, which is a 2.4-mile long barrier island located between Scofield Bayou and the merger of Bay Coquette and the Gulf of Mexico, west of the active Mississippi River bird's foot delta in Plaquemines Parish, Louisiana. The Site is located outside of any currently designated Section, Township or Range. A site layout map with observation and soil sample locations is included as **Figure 3**.

The Scofield Island Restoration Project (BA-40) was conducted on Scofield Island, which has experienced substantial impacts from storms, relative sea level rise, and anthropogenic influences. The combined effects have caused landward transgression, island breaching, wetlands loss, and adverse impacts to fisheries. The project created 238 acres of beach and dune using Mississippi River sediment, and 398 acres of marsh using Gulf of Mexico sediment. The dune was constructed to a 6-foot crest elevation and approximately 640 feet wide along 11,400 feet of shoreline. It is expected to mature to approximately 434 acres of barrier island and wetland habitat by year 20 of the project design life.

1.1.3 Lake Hermitage

The Lake Hermitage Marsh Creation Project (BA-42) area is located in the Barataria Basin in Plaquemines Parish, and is currently the site of a coordinated series of marsh creation and shoreline restoration projects being conducted by CPRA. The site is located in Section 5 of Township 18 South, Range 26 East and Township 17 South, Range 26 East. A site layout map with observation and soil sample locations is included as **Figure 4**.

The Lake Hermitage Marsh Creation project (BA-42) was initially proposed for the CWPPRA program by the U.S. Fish and Wildlife, with the goal of creating approximately 550 acres of marsh creation and 6,500 ft. of shoreline restoration within the original project boundary by hydraulically dredging sediment from the Mississippi River and depositing that material in shallow open-water areas. Since initial conception, several additional fill sites were added for marsh creation as additional funding sources became available. This project is currently under construction.

1.2 Objectives

As previously stated, the purpose of this investigation is to perform a reconnaissance level survey to determine the extent and potential impacts of coal/pet coke in sediments utilized at three coastal restoration projects and the effects that such substances could have on receiving basin biota.

2.0 Previous Investigation into Bayou Dupont Dredged Sediment Quality

An evaluation of the Mississippi River sediment prior to dredging for the Bayou Dupont project was conducted by GEC, Inc. with results reported in GEC (2009). The evaluation included sediment sampling within the Mississippi River borrow area from three subsections within the borrow area, North, Center, & South. Each of these subsections were comprised of 3 discrete samples (Borrow North, Borrow Center, Borrow South), a reference sample (Reference) collected from a point upstream of a July 23, 2008 oil spill, and from six discrete locations composited into two samples (Fill 1 and Fill 2) within the Bayou Dupont marsh that had received fill material. The locations of the borrow area samples, reference sample, and the fill samples are presented on **Figure 5**.

Chemical concentrations of the sampled sediments were corrected to dry weight concentrations and compared with the National Oceanic and Atmospheric Administration's (NOAA's) Screening Quick Reference Tables (SQuiRTs) where SQuiRTs concentrations (based on dry weight) were available. Specifically, sampled sediment concentrations were compared to the SQuiRTs Threshold Effects Level (TEL) for marine sediment where the TEL was available; otherwise, sampled concentrations were compared to the Apparent Effects Threshold (AET) for marine sediments. SQuiRT TEL and AET values were not available for one constituent (1-methylnaphthalene). The TEL represents the geometric mean of the 15th percentile concentration of the toxic effects data set and the median of the no-effect data set; as such, it represents a concentration below which adverse effects are expected to occur only rarely. The AET relates chemical concentrations to synoptic biological indicators of injury. AET values are essentially equivalent to the concentration observed in the highest non-toxic sample, above which adverse biological impacts to the tested organism would be expected. AET values are therefore less conservative concentrations to compare results to than TELs.

Analytical results from sediment samples collected during the evaluation indicated that where sediment was being dredged from borrow areas, samples collected from the North (Borrow North) contained detectable concentrations of many of the analyzed PAHs, as well as lead, nickel, vanadium, and oil and grease, samples collected from the Center (Borrow Center) contained detectable concentrations lead, vanadium, TPH DRO, oil and grease and all of the analyzed PAHs except C-1 naphthobenzothiophenes, C-2 naphthobenzothiophenes, and C-3 naphthobenzothiophenes, and Total Organic Carbon (TOC). Samples collected from the South (Borrow South) contained detectable concentrations of many of the analyzed PAH's as well as lead, nickel vanadium and TOC.

The reference sediment composite sample (Reference) contained detectable concentrations of many PAHs, as well as lead, nickel, vanadium, and mercury. Mercury was not detected in any of

the other sediments sampled in conjunction with the investigation. The reference sediment also contained detectable concentrations of TPH-DRO, oil and grease, and TOC.

The two Bayou Dupont fill area composite samples (Fill 1 and Fill 2) were found to contain very high moisture content. The high moisture content translated into elevated detection limits when corrected for dry weight as was evidenced in the detection limits for the PAH constituent - dibenzo(a,h)anthracene, polychlorinated biphenyls (PCBs) and total petroleum hydrocarbons-oil range organics (TPH-ORO). None of these constituents were detected; however, the dry-weight corrected detection limit concentrations for dibenzo(a,h)anthracene and total PCBs were greater than the SQuiRTs TEL concentrations.

Both of the Bayou Dupont composite samples were found to contain detectable concentrations of many of the analyzed PAHs, as well as lead, nickel, vanadium, and TPH-diesel range organics (TPH-DRO). Oil and grease was detected in composite sample Fill 1. The PAH constituent - naphthalene exceeded the SQuiRT TEL in composite sample Fill 1. No PCBs were detected in either fill area sample. TOC concentrations were an order of magnitude higher in the Bayou Dupont area sediments than in the river sediments.

Biological analysis included two series of 10-day solid phase bioassay/benthic toxicity tests; one series with *L. plumulosus*, and the other series with *Mysidopsis* sp was performed on each of the six composited samples following procedures described in the Inland Testing Manual. Survival in the borrow material was found to be equal to or higher than survival in the reference, control and fill area sediments. EEUSA performed statistical analyses on the results of the bioassay data using internal software. GEC re-evaluated the bioassay data using the BENTOX program for SAS. Results of both bioassays indicated that mortality in the borrow material was not statistically different than in the reference sediment.

3.0 Investigation Methodology

To assess the surface and subsurface extent and chemical/toxicological characteristics of the borrow material and associated coal/pet coke, the following specific methodologies were implemented at all the restoration project sites.

3.1 Site Observations

Observations of the presence of coal/pet coke were performed by using a 1-meter by 1-meter square that was placed on the ground surface of each location. A photograph of the site location with an identifying sign was taken and the Photo Record can be found in **Appendix A**. CB&I personnel made visual observations and documented the quantity of coal/pet coke nuggets that were:

- Greater than 10 centimeters
- Between 5 centimeters and 10 centimeters
- Between 2 centimeters and 5 centimeters
- An approximation of the quantity of nuggets that are less than 2 centimeters
- An approximation of the area covered by coal/pet coke

All visual observations were documented on a location specific field data form and can be found in **Appendix B**.

3.2 Soil Borings

To evaluate the subsurface extent of the coal/pet coke, soil borings were performed using a 3.25-inch diameter, carbon steel, hand sand auger at 50 percent or more of the locations where the visual observations were performed. Borings were advanced to a maximum depth of 4 feet below ground surface due to site conditions, which was the bottom of the sediment layer. Once the boring was complete, the collected soil was then sieved on site using a commercially available steel mesh, with a 1-inch square mesh size, positioned over a collection basin.

Field gravimetric testing was conducted on representative samples that passed through the sieve. The representative sample was placed in a plastic graduated cylinder that was filled with site surface water. The cylinder was agitated and the contents were allowed to settle for approximately 5 minutes. The heavier unit weight sand typically separated from and settled more quickly than the coal/pet coke. The volume of sand and coal/pet coke was measured and recorded on the location specific field data forms that are provided in **Appendix B**. The gravimetric test was then replicated on a second representative sample.

Upon completion of the boring, the soil sample was returned to the bore hole.

3.3 Soil Sample Collection and Analysis

To evaluate the possibility of impact from coal/pet coke to vegetation and/or biota, it was presumed that the impact would be within soils of the top six inches of ground surface. Accordingly, surface samples were collected within the top six inches for chemical and biota toxicity testing using a hand trowel or other approved devices consistent with CB&I's standard operating procedures. All sampling equipment that came into contact with the soil samples were decontaminated prior to sampling following the procedures outlined in Section 3.5.

Each soil sample consisted of five grab samples; one collected from the center and one from each of the four corners of an approximate 3-foot square area at each sampling location. When possible the sample collector removed any material that was not pertinent to the analysis of the sample such as vegetation, insects, rocks, debris, etc. prior to sample collection. Samples were then placed in new, clean, laboratory supplied sample containers and placed on ice for submittal to the analytical laboratories. Any unusual details about weather, soil condition, or any other observations were noted on the location specific field data forms that are found in **Appendix B**.

3.4 Analyses of Soil Samples

Soil samples collected for chemical analyses and benthic toxicity testing were delivered by CB&I to the Test America Laboratories, Inc. (Test America) service center in Baton Rouge, Louisiana and to the CK Associates (CK) laboratory in Baton Rouge, Louisiana, respectively, under proper chain of custody procedures. All soil samples collected for chemical analysis were analyzed by Test America using Environmental Protection Agency (EPA) 1986 (and all subsequent updates) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Method 8270 with low level detection for polycyclic aromatic hydrocarbons (PAHs), and EPA SW-846 Method 6010 for arsenic, cadmium, lead, nickel, vanadium, and EPA SW-846 Method 7470 for mercury. This testing was used in the current investigation to determine the concentrations of metals and PAHs in the deposited fill materials that were associated with the occurrence of coal/pet coke.

Additionally, one sample from each project site having higher percentages of observed concentrations of coal/pet coke was also analyzed by Test America by the Synthetic Precipitation Leaching Procedure (SPLP) for metals and PAH constituents. The SPLP analysis was designed to determine the mobility of both organic and inorganic compounds present in soil, liquid, and waste. It was used in the current investigation to determine the potential for leaching of the fill material constituents into the environment by simulating leaching from precipitation under field conditions.

The benthic toxicity tests conducted by CK followed the procedures described in EPA/USACE (1998). Two series of ten-day solid phase bioassay/benthic test, one series with *Leptocheirus*

plumulosus and one series with *Mysidopsis* sp. were performed for each benthic sample. The benthic testing was designed to assess the potential impact of the fill material on appropriately sensitive benthic organisms to determine if there was a potential for unacceptable toxicity from the deposited fill material.

3.5 Criteria for Comparison of Analytical Results

During the previous investigation of the borrow and fill sediments for the Bayou Dupont project (GEC, 2009), the analytical results for the borrow and fill area samples were compared to the NOAA SQuiRTs TEL and AET values as described previously in Section 2.0 of this submittal. Based on CPRA's communication with the EPA, it was determined that the SQuiRTs TEL/AET criteria were not the most appropriate benchmark criteria for evaluating the sampling data. Accordingly, chemical concentrations of the sampled fill sediments from the current investigation are being compared to different SQuiRTs benchmark criteria that are more appropriate for evaluating data from this type of investigation.

Specifically, sampled sediment concentrations (based on dry weight) are being compared to the SQuiRTs Effects Range Low (ERL) and Effects Range Medium (ERM) for marine sediment where ERL and ERM values are available; otherwise, sampled concentrations are compared to the Apparent Effects Threshold (AET) for marine sediments. The ERL, ERM, and AET values are specific chemical concentrations that have been derived from compiled biological toxicity assays and synoptic sampling of marine sediment. ERL and ERM values are guidelines to help categorize the range of concentrations in sediment where effects are scarcely observed (below the ERL) and the range above which effects are generally observed (above the ERM). AET values are essentially equivalent to the concentration observed in the highest non-toxic sample, above which adverse biological impacts to the tested organism would be expected. AET values are therefore less conservative concentrations to compare results to than the ERL and ERM values. Based on data from the current investigation, one metal constituent and four PAH constituents were compared to the AETs because ERLs/ERMs were not available for these constituents in the SQuiRT Tables. Also, SQuiRT criteria (ERLs, ERMs, or AETs) were not available for one constituent (1-methylnaphthalene); therefore, no criteria are available for comparison to this constituent.

3.6 Equipment Decontamination

One purpose for defining an equipment decontamination procedure is to ensure adequate steps are taken to remove chemical residues before the equipment is used to collect a sample for environmental analysis. Decontamination procedures are also important in reducing cross-contamination and worker exposure.

Environmental samples are typically collected to measure trace level concentrations, adequate equipment decontamination must be completed. For this project, all chemical samples were collected from the 0 to 6 inch depth. To eliminate cross contamination and in field decontamination, single-use disposable scoops were used for the collection of soil sample for chemical analyses.

3.7 Site Access

Access to most of the sites in this project required travel by boat. In compliance with CPRA requests, any travelling related to observation/investigation while on any site was limited to foot and ATV travel. Access to private properties (such as for the purpose of collecting any reference or background samples) associated with this project was coordinated through authorized CPRA representative Richard ‘Rick’ Raynie.

3.8 Bayou Dupont

Bayou Dupont is an active site where construction is still ongoing. This site is also the home to a local duck hunting club, River Rest, LLC. The site is accessible by road on the northeast corner. Due to the recent replanting activities that have gone on throughout the site, CB&I did not utilize a four-wheel ATV for on-site travel in between sample points.

3.9 Scofield Island

Scofield Island is a 2.4-mile long barrier island where application of dredge materials has currently ceased. Access to the island is only possible from boat. A boat dock is located at the western end of the island. Access to the island can be limited during low tides. Travel on the island was limited to foot-travel and ATV. The sampling activities focused on the south side of the island because this was the area where the Mississippi River borrow material was placed as fill.

3.9.1 Lake Hermitage

Lake Hermitage can only be accessed by boat. CB&I utilized a local boat launch to gain access. Travel on the project site was limited to foot-travel to access observation and sample locations. The shoreline has recently been vegetated; CB&I and its subcontractors avoided any activities that could potentially damage any of the vegetation.

4.0 Investigation Description and Analytical Results

The investigation approach presumed that because borrow areas and constructed wetlands were similar for each of the sites, that the coal content and distribution for each of the sites would be similar. Further, since the concern is that toxins may be leaching from the coal and pet coke, the older project, Bayou Dupont (BA-39) with construction complete in March 2010, would be more heavily impacted. Therefore, CB&I proposed to establish a baseline of environmental conditions at the Bayou Dupont site and make a comparison to the conditions at Lake Hermitage while performing confirmatory observations/sampling at the Scofield Island project site. This approach was accomplished by more heavily observing and sampling the Bayou Dupont and Lake Hermitage project sites.

The analytical results for the samples from all three sites were reported by the laboratory on a wet weight basis but were subsequently converted to a dry weight basis to normalize the results for comparison to the SQuiRT criteria as previously described in Section 3.5, which were developed for comparison to sediments on a dry-weight basis, and for comparison of the results between sites. A representative percent solids of 80 percent (based on an average of the percent solids test results) was used for the dry-weight conversion of all the current investigation fill material sample results.

When reviewing the analytical results for the three sites, it is important to keep in mind that based on the field observations of coal/pet coke surface cover and the gravimetric testing, it is likely that a significant number of the samples submitted for laboratory analysis from the 0 to 6-inch depth interval at each site contained some percentage of coal/pet coke particles (depending on the aliquot of soil that the laboratory analyst selects for each individual analysis). Additional information concerning the potential significance of this is presented later under the Summary and Conclusions in Section 6.0.

4.1 Bayou Dupont

4.1.1 Investigation Description

Initial investigation activities were conducted by CB&I personnel at the Bayou Dupont Mississippi River Sediment Delivery System site from January 30 to January 31, 2015. During the investigation activities, a total of 14 site locations were observed (**Figure 2**) and soil borings were installed at seven of these locations (BD-01, BD-03, BD-05, BD-07, BD-09, BD-10, BD-13) following procedures outlined in section 3.2. Soil samples were also collected from these seven locations for chemical analysis presented in section 3.4. Four samples were also collected from these seven locations for benthic toxicity analysis based on three samples from locations having the highest observed coal/ pet coke concentrations (BD-05, BD-09, BD-10) and one sample from a location where no coal/pet coke was observed (BD-01). One sample was also

collected for benthic toxicity analysis from a background area of native marsh, outside of the project area (BD-BG).

An additional site investigation was conducted at the Bayou Dupont site on February 26, 2015 to further delineate areas believed to have higher coal/ pet coke concentrations. One additional sampling site was identified (BD-15). At the additional site, a soil boring was installed and a sample was collected for chemical analysis. Sample BD-15 was also tested for percent solids to identify representative moisture contents for the fill material. A site layout map with observation and soil sample locations is included as **Figure 2**.

4.2 Investigation Results

4.2.1 Field Observations

Based on the visual observations of 15 sample locations (plus one background location) at the Bayou Dupont site, 3 of the 15 locations contained measurable percentages of coal/ pet coke ground cover ranging from <1% at two sites to 2% at one site (**Table 1A and Figures 2 and 7**). The background sample location did not exhibit any surface coal/pet coke. No large areas of coal/ pet coke were observed during this investigation and the current distribution is thinly sporadic and sparse in most areas. Heavy vegetative cover was encountered at most site locations as seen from the photo record provided in **Appendix A**. However, it should be noted that pieces of coal (up to 2 to 3-inches in length) were infrequently observed during transit between observation locations.

As stated, soil borings were conducted at a total of 8 of the 15 site locations. As expected, the field observations and laboratory grain-size analysis at these locations indicated the fill material was found to consist mainly of fine-grained sand (approximately 77% to 94%) with silt and little to no clay. The field sieve analysis of the subsurface fill material at these eight locations indicated no coal/pet coke was retained in the 1-inch sieve. The field gravimetric analyses of the eight fill material samples indicated all eight locations exhibited the presence of coal/pet coke with the average percent coal fines ranging from <0.10% to 0.77% with a median of 0.2%. A complete summary of field data from site observations and soil borings is provided in **Table 1A** and on **Figure 2**. Graphs depicting the surface and subsurface extent of the coal/pet coke and grain size results are provided as **Figures 7, 8, and 9**.

4.2.1.1 Analytical Results

Chemical concentrations from the laboratory analyses of the samples collected at the Bayou Dupont site were also compared with NOAA SQuiRT ERLs/ERMs or AETs as previously described in Section 3.5 of this report. All eight sites sampled had detectable metal concentrations but no sites had a concentration that exceeded the SQuiRT ERLs or AETs. Sites BD-03, BD-07, BD-09, BD-10 and BD-13 had detectable concentrations of low level PAHs but

again no exceedances. Also of note, none of the detection limits for the PAH constituents exceeded the ERLs or AETs. A complete summary of analytical results is presented in **Table 2A**, graphs depicting the total metals and total detected PAH concentration for each sample location are presented on **Figures 10 and 11**, and the laboratory analytical report is provided in **Appendix C**.

4.2.1.2 Leach Testing Results

The results of the SPLP analysis that was completed on one of the fill material samples (sample location BD-05) with the higher observed content of coal/pet coke from the first field mobilization indicated none of the PAH or metals constituents were leachable from the fill at concentrations above the analytical detection limits. A summary of the SPLP analytical results is presented in **Table 3A** and the laboratory analytical report is provided in **Appendix C**. Based on these results, the metals and PAH constituents do not appear to be leaching to the environment.

4.2.1.3 Benthic Testing Results

Results of the benthic toxicity testing that was completed on fill samples from four boring locations, one background location, and one laboratory control sample indicated none of the samples exhibited acute toxicity to either of the test species (*Leptocheirus plumulosus* and *Mysidopsis* sp.) in the 10-day duration exposure. In accordance with EPA/USACE (1998), mortality in the site fill material samples did not exceed the mortality in the background (reference sediment) or the laboratory control sample by more than 10%. In fact, most of the samples exhibited mortality rates near or lower than the background sample, with total mortality rates in the four site samples ranged from a low of 0% to a high of 8%, which is significantly less than 10% above the background sample that exhibited mortality rates of 4% to 6%. A summary of the benthic toxicity testing results is presented in **Table 4A** and the laboratory analytical report is provide in **Appendix D**. Based on these results, the dredged fill material is not acutely toxic to benthic organisms.

4.2.2 Conclusions

The results of the field observations, field testing, and laboratory analyses of the fill material samples collected from the Bayou Dupont Mississippi River Sediment Delivery System site indicates the following:

- The surface extent of coal/pet coke from the field observations is thinly sporadic and sparse in most areas.
- The subsurface occurrence and extent of coal/pet coke from the soil borings, field sieve testing, and gravimetric testing indicate no coal fragments over 1-inch in diameter were present in the eight samples that were sieved. The gravimetric testing indicated relatively low percentages of coal/pet coke (<0.10% to <0.77%) in the subsurface soils but coal was identified at all eight of the sample locations where

gravimetric testing was completed. While the percentages of coal/pet coke in the gravimetric tests were very low, in general there was no clear relationship between the sample locations that exhibit higher percentages of coal fines in the subsurface fill material with the sample locations that exhibited higher percentages of coal surface cover (**Figure 12**).

- The laboratory grain-size analysis results indicate the fill material consisted predominately of fine-grained sand with silt and little to no clay.
- The results for the metals and PAH analyses indicated none of the samples exhibited metals or PAH constituent concentrations above the SQuiRT ERLs or AETs. In general, there was no clear relationship between the detected concentrations of the metals and PAHs with the samples that exhibited higher coal/pet coke contents (**Figures 10 and 13**).
- The results of the SPLP testing indicate the metals and PAH constituents are not leachable to the environment.
- The results of the benthic toxicity testing indicate fill material is not acutely toxic to benthic organisms.

4.3 Scofield Island

4.3.1 Investigation Description

Investigation activities were conducted by CB&I personnel at the Scofield Island Restoration Project site from January 28 to January 29, 2015. During the investigation activities, a total of nine site locations were observed (**Figure 3**) and soil borings were installed at five of these locations (SI-01, SI-03, SI-05, SI-07, SI-09) following procedures outlined in Section 3.2. Soil samples were also collected from these five locations for chemical analyses as presented in Section 3.4. Two samples were also collected from these five locations for benthic toxicity analysis based on the following criteria, one sample from the location having the highest observed coal/ pet coke concentration (SI-01) and one sample from a location where no coal/pet coke was observed (SI-09). One sample was also collected for benthic toxicity analysis from a background area of native beach sand, outside of the project area (SI-BG).

4.3.2 Investigation Results

4.3.2.1 Field Observations

Based on the visual observations of nine sample locations (plus one background location) at the Scofield Island site, seven of the nine locations contained a very small but measurable percentage of coal/ pet coke ground cover of <1% (**Table 1B and Figures 3 and 7**). The background sample location did not exhibit any surface coal/pet coke. No large areas of coal/ pet coke were observed during this investigation and the current distribution is thinly sporadic and sparse in most areas. However, it should be noted that pieces of coal (up to 2 to 3-inches in

length) were infrequently observed during transit between observation locations, A photo record of all observation sites is included in **Appendix A**. As stated, soil borings were conducted at a total of five of the nine sample locations. As expected, the field observations and laboratory grain-size analysis indicated the fill material consisted mainly of fine-grained sand (approximately 92% to 93%) with some silt and clay. The field sieve analysis of the subsurface fill material at these five locations indicated no coal/pet coke was retained in the 1-inch sieve. The field gravimetric analyses of these five samples indicated the presence of coal/pet coke in three of the five sample locations with very low average percent coal fines ranging from <0.17% to <0.25% with a median of 0.17%. A complete summary of field data from site observations and soil borings is presented in Table 1B and on Figure 3. Graphs depicting the surface and subsurface extent of the coal/pet coke and grain size results are provided as **Figures 7, 8, and 9**.

4.3.2.2 Analytical Results

Chemical concentrations from the laboratory analyses of the samples were also compared with NOAA SQuiRT ERLs/ERMs or AETs as previously described in Section 3.5 of this report. All five sites sampled had detectable metal concentrations but no sites had a concentration that exceeded the SQuiRT ERLs or AETs. Only sites SI-05 and SI-09 had detectable concentrations of low level PAHs but also no exceedances. Also of note, none of the detection limits for the PAH constituents exceeded the ERLs or AETs. A complete summary of analytical results is presented in **Table 2B**, graphs depicting the total metals and total detected PAH concentration for each sample location are presented on **Figures 10 and 11**, and the laboratory analytical report is provided in **Appendix C**.

4.3.2.3 Leach Testing Results

The results of the SPLP analysis that was completed on one of the fill material samples (sample location SI-01) with the higher content of coal/pet coke observed in the field indicated none of the PAH or metals constituents were leachable from the fill at concentrations above the analytical detection limits. A summary of the SPLP analytical results is presented in **Table 3B** and the laboratory analytical report is provided in **Appendix C**. Based on these results, the metals and PAH constituents do not appear to be leaching to the environment.

4.3.2.4 Benthic Testing Results

Results of the benthic toxicity testing that was completed on the fill material samples from two boring locations, one background location, and one laboratory control sample indicated none of the samples exhibited acute toxicity to either of the test species (*Leptocheirus plumulosus* and *Mysidopsis*) in the 10-day duration exposure. In accordance with EPA guidance for evaluating benthic toxicity results (Evaluation of Dredged Material Proposed for Discharge in Waters of the US – Testing Manual [Draft]), mortality in the site dredge material samples did not exceed the mortality in the background (reference sediment) or the laboratory control sample by more than

10%. In fact, most of the samples exhibited mortality rates lower than the background sample, with the total mortality rates in the two site samples ranging from a low of 0% to a high of 3%, which is significantly less than 10% above the background sample that exhibited mortality rates of 2% to 6%. A summary of the benthic toxicity testing results is presented in **Table 4B** and the laboratory analytical report is provided in **Appendix D**. Based on these results, the fill material is not acutely toxic to benthic organisms.

4.3.3 Conclusion

The results of the field observations, field testing, and laboratory analyses of the fill material samples collected from the Scofield Island Restoration Project site indicates the following:

- The surface extent of coal/pet coke from the field observations is mostly thinly sporadic and sparse in most areas.
- The subsurface occurrence and extent of coal/pet coke from the soil borings, field sieve testing, and gravimetric testing indicate no coal fragments over 1-inch in diameter were present in the five samples that were sieved. The gravimetric testing indicates relatively low percentages of coal/pet coke (<0.17% to <0.25%) in three of the five subsurface sample locations where gravimetric testing was completed. While the percentage of coal/pet coke surface cover and the percentage of coal/pet coke in the subsurface soil from the gravimetric testing are very low; in general, sample locations that exhibit higher percentages of coal fines in the subsurface fill material appear to be directly related to the sample locations with higher percentages of coal surface cover (**Figure 12**).
- The laboratory grain-size analysis results indicate the fill material consisted predominately of fine-grained sand with silt and little to no clay.
- The results for the metals and PAH analyses indicated none of the samples exhibited metals or PAH constituent concentrations above the SQuiRT ERLs or AETs. In general, there was no clear relationship between the detected concentrations of the metals and PAHs with the samples that exhibited higher coal/pet coke contents (**Figures 10 and 13**).
- The results of the SPLP testing indicate the metals and PAH constituents are not leachable to the environment.
- The results of the benthic toxicity testing indicate fill material is not acutely toxic to benthic organisms.

4.4 Lake Hermitage

4.4.1 Investigation Description

Initial investigation activities were conducted by CB&I personnel at the Lake Hermitage Marsh Creation Project site from January 26 to January 28, 2015. During the investigation activities, 18

site locations were observed (**Figure 4**) and soil borings were installed at nine of these locations (LH-03, LH-04, LH-05, LH-08, LH-13, LH-15, LH-16, LH-17, LH-18) following procedures outlined in section 3.2. Soil samples were also collected from these nine locations for chemical analysis as presented in Section 3.4. Four samples were also collected from these nine locations for benthic toxicity analysis based on the following criteria, three samples from locations having the highest observed coal/ pet coke concentrations (LH-04, LH-08, LH-17) and one sample from a location where no coal/pet coke was observed (LH-16). One sample was also collected for benthic toxicity analysis from a background area of native marsh, outside of the project area (LH-BG).

Additional site investigation was conducted at the Lake Hermitage site on February 26, 2015 to further delineate areas believed to have higher coal/ pet coke concentrations. Three additional sites were identified (LH-19, LH-20, LH-21). At each of the three sites, soil borings were installed and samples were collected for chemical and benthic toxicity analysis. A site layout map with observation and soil sample locations is included as **Figure 4**.

On April 1, 2015, additional laboratory analytical testing was requested on sample LH-21 for analysis of metals, PAHs, percent solids, SPLP metals, and SPLP PAHs to provide additional data on the leachability of these constituents to the environment. Samples LH-19 and LH-20 were also tested for percent solids to identify representative moisture contents for the fill material.

4.4.2 Investigation Results

4.4.2.1 Field Observations

Based on the visual observations of 21 sample locations (plus one background location) at the Lake Hermitage site, 9 of the 21 locations contained a measurable percentage (greater than 1 percent) of coal/ pet coke ground cover ranging from 1% to 75% and the remaining sites exhibited 0% to <1% cover (**Table 1C and Figures 4 and 7**). The background sample location did not exhibit any surface coal/pet coke. Despite the relatively high percentage of coal/pet coke observed at three of the locations (LH-19 at 40%, LH-20 at 75%, and LH-21 at 10%), no large contiguous areas of coal/ pet coke were observed during at the Lake Hermitage site during this investigation and the current distribution of coal is mostly sporadic and patchy in some areas. However, it should be noted that pieces of coal (up to 2 to 3-inches in length) were frequently observed during transit between observation locations. A photo record of all observation sites is provided in **Appendix A**. As stated, soil borings were conducted at a total of 12 site locations. As expected, field observations and laboratory grain-size analysis indicated the fill material was found to consist mainly of fine-grained sand (approximately 74% to 93%) with some silt and little to no clay. The field sieve analysis of the subsurface fill material at these 12 locations indicated coal/pet coke was retained in the 1-inch sieve at only one location (LH-17) and

comprised approximately 1% or less of the sieved sample. The field gravimetric analyses of the fill material samples from these same 12 locations indicated the presence of coal/pet coke in 11 of the 12 sample locations with the average percent coal fines ranging from approximately 0.09% to 2.9% with a median of 0.21%. A complete summary of field data from site observations and soil borings can be found in **Table 1C** and on **Figure 4**. Graphs depicting the surface and subsurface extent of the coal/pet coke and the grain size results are provided as **Figures 7, 8, and 9**.

4.4.2 Analytical Results

Chemical concentrations in this investigation were also compared with NOAA SQuiRT ERLs or AETs. All 12 sites sampled had detectable metal concentrations but none of the concentrations were greater than the SQuiRT ERLs or AETs. All sites except LH-13 had detectable concentrations of low level PAHs. Out of the 11 sites that had detectable low level PAH concentrations, four had concentrations that exceeded the NOAA SQuiRT ERLs (LH-05, LH-19, LH-20, and LH-21) for one or more PAHs but all 11 sites were below the ERLs. Also of note, none of the detection limits for the PAH constituents exceeded the ERLs or AETs. A complete summary of analytical results can be found in **Table 2C**, a map of the PAH constituents that exceeded their SQuiRT ERL concentrations is presented as **Figure 6**, graphs depicting the total metals and total detected PAH concentration for each sample location are presented on **Figures 10 and 11**, and the laboratory analytical report is provide in **Appendix C**.

4.4.3 Leach Testing Results

The results of the SPLP analysis that was completed on one of the fill material samples (sample location LH-17) with the higher content of coal/pet coke from the first field mobilization indicated none of the PAH or metals constituents were leachable from the fill at concentrations above the analytical detection limits. Additional SPLP testing was completed on sample LH-21 that was collected during the second field mobilization. Sample LH-21 was retested for total metals and total PAHs and SPLP metals and SPLP PAHs because this location exhibited the highest coal content for the samples collected during the second field mobilization and exhibited seven PAH constituent concentrations that exceeded the SQuiRT ERLs. The reanalysis for total metals indicated similar metals results and the reanalysis for total PAHs indicated lower total PAH concentrations than the original sample, with none of the PAH constituents exceeding the SQuiRT ERLs. This variability in the results for the total concentrations is not unexpected due to the inherent variability in the individual aliquot of soil that is selected form the sample for analysis. The SPLP results for sample LH-21, which exhibited the highest coal content for the samples collected during the second field mobilization (but lower total PAHs in the subsequent reanalysis), indicated none of the metals or PAH constituents were leachable at concentrations above the analytical detection limits. A summary of the SPLP analytical results is presented in

Table 3C and the laboratory analytical report is provided in **Appendix C**. Based on these results, the metals and PAH constituents do not appear to be leaching to the environment.

4.4.2.4 Benthic Testing Results

Results of the benthic toxicity testing that was completed on fill material samples from six boring locations with highest coal contents, one boring location with no coal content, two background locations, and two laboratory control samples indicated none of the samples exhibited acute toxicity for either of the test species (*Leptocheirus plumulosus* and *Mysidopsis*) in the 10-day duration exposure. In accordance with EPA guidance for evaluating benthic toxicity results (Evaluation of Dredged Material Proposed for Discharge in Waters of the US – Testing Manual [Draft]), mortality in the site fill material samples did not exceed the mortality in the background (reference sediment) or the laboratory control samples by more than 10%. In fact, most of the samples exhibited mortality rates lower than the background sample, with total mortality rates in the seven site samples (from two field mobilizations) ranged from a low of 0% to a high of 6%, which is significantly less than 10% above the background sample that also exhibited mortality rates of 0% to 6%. A summary of the benthic toxicity testing results is presented in **Table 4C** and the laboratory analytical report is provide in **Appendix D**. Based on these results, the fill material is not acutely toxic to benthic organisms.

4.4.3 Conclusion

The results of the field observations, field testing, and laboratory analyses of the fill material samples collected from the Lake Hermitage Marsh Creation Project site indicates the following:

- The surface extent of coal/pet coke from the field observations is mostly sporadic and patchy in some areas.
- The subsurface occurrence and extent of coal/pet coke from the soil borings, field sieve testing, and gravimetric testing indicate coal fragments over 1-inch in diameter were present at only one of the 12 sample locations where sieve testing was conducted. The gravimetric testing indicated relatively low percentages of coal/pet coke (0.09% to 2.9%) in 11 of the 12 subsurface sample locations where gravimetric testing was completed. In general, sample locations that exhibit higher percentages of coal fines in the subsurface fill material are directly related to the sample locations with higher percentages of coal surface cover (**Figure 12**).
- The laboratory grain-size analysis results indicate the fill material consisted predominately of fine-grained sand with silt and little to no clay.
- The results for the metals and PAH analyses indicated none of the 12 samples exhibited metal constituents at concentrations above the SQuiRT ERLs or AETs and 4 of the 12 samples exhibited one to seven PAHs with concentrations above the SQuiRT ERLs but below the ERMs. In general, the samples with the higher coal/pet coke content exhibited higher metals concentrations and a higher number of PAH

constituent detections and exceedances (**Figures 10, 12, and 13**). The majority of the PAH concentrations that exceeded the SQuIRT ERLs were less than or equal to twice the ERL values and the remaining concentrations were roughly 2.5 to 3.5 times higher than the ERL values, all of which were from one sample location (LH-21). The reanalysis of LH-21 indicated none of the PAH constituents exceeded the SQuIRT ERLs (**Table 2C and Figure 6**). It is important to note, as exhibited by the reanalysis of sample LH-21, there can be significant variability in the analytical results for soil samples due to the inherent variability in the individual aliquot of soil that is selected from the sample for analysis.

- The results of the SPLP testing indicate the metals and PAH constituents are not leachable to the environment.
- The results of the benthic toxicity testing indicate the fill material is not acutely toxic to benthic organisms.

5.0 Site Comparison

5.1 Bayou Dupont to Previous Investigation

The Bayou Dupont site is the oldest of the three sites currently being investigated. A comparison of the previous investigation data with the common data results from the current investigation for the Bayou Dupont site was completed to identify any significant changes in the constituents of potential concern that were analyzed for during both investigations. The previous investigation included sampling and analysis of the borrow material from its source area (Mississippi River) and sampling of the marsh at the site prior to the placement of the fill material. The current investigation focused on the physical and chemical characteristics of the site fill material after it was put in place and exposed to environmental conditions since the project was completed. The common data from both sites is summarized in **Table 5**.

The analytical results of the borrow material and marsh samples from the previous investigation were reported on a dry-weight basis for comparison to the SQuiRT ERLs/ERMs and AETs when ERLs/ERMs were not available. Prior to comparing the previous analytical data to the analytical data from the current investigation and to the referenced SQuiRT values, the analytical results for the current investigation were also converted from a wet-weight basis to a dry-weight basis using an average representative percent solids of 80 percent (or moisture content of 20 percent).

A comparison of the analytical data from the previous and current investigations indicates:

- The overall concentrations of metals in the borrow material from the previous investigation appear to be similar to those identified in the current fill material samples from the Bayou Dupont site.
- The metals concentrations of the native marsh area (Fill1 and Fill 2 samples) prior to placement of the fill were roughly two to eleven times higher than concentrations in the borrow and fill material from the previous and current investigations. Of note, one of the previous investigation fill samples (Fill 2) consisted of 30 % gravel size material, which indicates this sample may not have been representative of native sediments (depending on what the gravel size material consisted of).
- The number of detected PAHs and the concentrations of the PAHs appear to be slightly higher in the borrow material samples than in the current investigation fill material samples. It is also noted that one PAH constituent in one of the previous investigation borrow material samples exceeded the SQuiRT ERLs but was below the ERM, while none of the current investigation fill material samples exceeded the SQuiRT ERLs.
- The benthic toxicity test results for the borrow and fill area samples were predicted not to be acutely toxic to benthic organisms.

Overall, the marsh area (Fill 1 and Fill 2 samples) prior to placement of the fill appears to exhibit much higher metal concentrations than the fill material. These samples could be considered background samples for the marsh at the Bayou Dupont site assuming they are representative of the native marsh deposits. The apparent slightly higher number and concentrations of PAH constituents in the samples of borrow material from the previous investigation and the samples of the fill material from the current investigation may be an artifact of the sampling environment related to the depositional characteristics of the borrow sediment (river channel) versus the subsequent redistribution and mixing of the borrow material when it was placed as fill in the marsh.

5.2 Bayou Dupont to Scofield Island

The Bayou Dupont Mississippi River Sediment Delivery System site is the oldest of the three sites currently being investigated, while the Scofield Island Restoration Project site is the youngest of the sites. A comparison of the data from these two sites (**Tables 2A and 2B**) was completed to determine if there were any significant differences between the sites based on the length of time the fill material has been exposed to the environment. Similar to the analytical results for the above described Bayou Dupont site, the laboratory wet-weight analytical results for the Scofield Island site were converted to a dry-weight basis (based on a moisture content of 20 percent) for the data comparison between the two sites.

A comparison of the laboratory analytical data from these two sites indicates very similar metals concentrations and similar PAH constituent concentrations, with the only possible difference being an increase in the number of PAH constituents detected in the Bayou Dupont fill material (**Tables 2A and 2B** and **Figure 13**). Overall, there does not appear to be any significant difference in the analytical data between the two sites based on the length of time the fill material has been exposed to the environment.

5.3 Lake Hermitage to Bayou Dupont and Scofield Island

Comparison of the field and laboratory data for the Lake Hermitage site to the Bayou Dupont and Scofield Island sites indicates the following:

- The estimated percentage of coal/pet coke surface cover is greater at the Lake Hermitage site than at the Bayou Dupont and Scofield Island sites and the Scofield Island site distribution appears to be slightly greater than at the Bayou Dupont site in terms of the number of sample locations that exhibited coal/pet coke cover (**Figure 7**). There was no coal/pet coke identified at the background sample locations from all three sites.
- The field gravimetric analyses of the fill material samples indicated all three sites exhibited similar amounts of coal/pet coke in the subsurface, with the exception of the three sample locations at the Lake Hermitage site (LH-19 through LH-21) that

exhibited much higher coal/pet coke surface cover and much higher amounts of subsurface coal/pet coke fines (**Figure 8**).

- The laboratory grain-size analysis indicated the fill material was similar at all three sites consisting mainly of fine-grained sand (approximately 74% to 94%) with some silt and little to no clay (**Figure 9**).
- The Lake Hermitage metals concentrations are similar to the metal concentrations at the Bayou Dupont and Scofield Island sites for the sample locations with lower percentages of coal/pet coke. The samples with higher percentages of surface and subsurface coal/pet coke from the Lake Hermitage site (LH-19 through LH-21) exhibit total metals concentrations on the order of two to four times higher than the other two sites (**Figure 10**). None of the metals concentrations at any of the three sites were greater than the SQuiRT ERLs or AETs.
- The concentrations and number of PAH constituents detected in the Lake Hermitage site are much greater than at the Bayou Dupont site for the samples with the lower coal/pet coke content and the concentrations and number of PAH constituents detected in the Bayou Dupont site are greater than at the Scofield Island site (**Tables 2A through 2C and Figures 11**). The Lake Hermitage site was the only site with PAH constituent concentrations that were greater than the SQuiRT ERLs (but below the ERM). The SQuiRT ERL exceedances were all from samples with the highest percent coal/pet coke surface cover (LH-19 through LH-21), with the exception of one PAH constituent at sample location LH-05 (**Table 2C and Figure 6**).
- The results of the SPLP testing at all three sites indicate that despite the detected presence of metals and PAH constituents in the fill material samples, the metals and PAH constituents do not appear to be leachable to the environment (**Table 3A through 3C**).
- The benthic toxicity testing results indicate the fill material at all three sites is not acutely toxic to benthic organisms. Overall, the acute toxicity results appear to be similar from all three sites with no obvious increases at the sites with higher percentages of coal/pet coke (**Tables 4A through 4C**).

Overall, it is apparent that the sample locations with the highest percent of coal/pet coke exhibited the higher metals and PAH constituent concentrations. The lack of leachable metals and PAH constituents from the SPLP results is a strong indication that the samples with the higher total PAH and total metal constituent concentrations are likely the result of coal in the samples that were analyzed by the laboratory. If coal/pet coke particles were present in the samples analyzed by the SPLP method, which is likely based on the results of the field tests, the absence of leachable constituents from the SPLP tests strongly supports the low potential for these constituents to leach from the coal/pet coke to the fill material (sediments) and the environment.

6.0 Summary and Conclusions

6.1 Summary

An evaluation of three coastal restoration sites in Plaquemines Parish and Jefferson Parish, Louisiana (the Bayou Dupont Mississippi River Sediment Delivery System [BA-39], the Scofield Island Restoration Project [BA-40], and the Lake Hermitage Marsh Creation Project [BA-42]) was completed in January and February 2015 to determine the extent of coal/pet coke and the presence and potential toxicological effects of PAHs and/or metals resultant from the presence of coal/pet coke in the surface and subsurface media, along with an evaluation of the effects that such substances could have on receiving basin biota. The investigation activities consisted of surface coal/pet coke survey that estimate the quantity, the spatial extent, and physical characteristics of surficial expression (via visual survey) and subsurface occurrence (via soil borings), along with chemical and benthic toxicity analyses.

The results of the field observations, field testing, and laboratory analyses of the fill material samples collected from the three restoration project sites during the current investigation indicates the following:

- The surface extent of coal/pet coke from the field observations at all three restoration sites is thinly sporadic and sparse in most areas.
- The subsurface occurrence and extent of coal/pet coke from the soil borings, field sieve testing, and gravimetric testing appears to be somewhat related to the surface occurrence of coal/pet coke. Almost all the sampling locations where gravimetric testing was completed exhibited the presence of coal/pet coke fines in the subsurface soil but typically at very low percentages. Sites with higher percentages of surface coal/pet coke cover appear to exhibit higher percentages of coal/pet coke fines in the subsurface fill material in at least two of the three sites (Lake Hermitage site and to a lesser degree at the Scofield Island site) (**Figure 12**).
- The laboratory grain-size analysis results for all three sites indicate the fill material consisted predominately of fine-grained sand with silt and little to no clay.
- The laboratory results for metals and PAHs indicates an apparent relationship between the number and concentrations of the metals and PAH constituents with the higher percentages of coal/pet coke, specifically at the Lake Hermitage site where locations with the highest coal/pet coke percentages were observed and sampled (Figures 10, 12, and 13). Results of the current investigation indicate the presence of more PAH constituents at concentrations above the SQuiRT ERLs but below the ERM, at the sample locations with the higher coal/pet coke percentages from the Lake Hermitage site. It is also important to keep in mind that, as exhibited by the reanalysis of sample LH-21 for PAHs, there can be significant variability in the analytical results for soil

samples due to the inherent variability in the individual aliquot of soil that is selected from the sample for analysis. Based on these results, it is likely that the samples with the higher concentrations of PAHs and metals were the results of coal/pet coke particles in the samples that were analyzed by the laboratory.

- The results of the SPLP testing at all three sites indicate that despite the presence of metals and PAH constituents in the fill material samples, the metals and PAH constituents do not appear to be leachable to the environment. The lack of leachable constituents from the SPLP results is a strong indication that the fill material samples with the higher total PAH and metal constituent concentrations are likely the result of coal in the samples. If coal/pet coke particles were present in the samples analyzed by the SPLP method, which is likely based on the results of the field tests, the absence of leachable constituents from the SPLP tests strongly supports the low potential for these constituents to leach from the coal/pet coke to the fill material (sediments) and the environment.
- The results for the benthic toxicity testing indicated the fill material at all three sites is not acutely toxic to benthic organisms. Overall, the acute toxicity results appear to be similar from all three sites with no obvious increases at the sites with higher percentages of coal/pet coke or above background levels.

The comparison of the previous investigation data of the Bayou Dupont borrow source material and marsh area (prior to fill placement) with the current investigation data of the in-place fill material from the Bayou Dupont site indicates similar metals concentrations in the previous borrow material and the current fill material, higher concentrations of metals in the marsh prior to fill placement, and slightly higher concentrations and greater numbers of PAH constituents in the previous results of the borrow material with respect to the current fill material.

The comparison of the Bayou Dupont site data (oldest site) with the Scofield Island site (youngest site) indicates no significant difference in the analytical data between the two sites with respect to the length of time the fill material has been exposed to the environment.

The comparison of the Lake Hermitage site data to the data from the Bayou Dupont and Scofield Island sites indicates a couple of major noticeable differences between the sites including: the apparent higher coal/pet coke surface cover and subsurface coal/pet coke fines at the Lake Hermitage site, especially at locations LH-19 through LH-21, and the apparent direct relationship between the amount of coal/pet coke and the metals concentrations and the number and concentrations of the PAHs that exceed the SQiRT ERLs at the Lake Hermitage site based on the sample locations with a higher coal/pet coke content.

6.2 Conclusions

Based on the results of the current investigation, PAH constituents were identified at the Lake Hermitage site at concentrations that exceeded the SQiRT ERLs but were below the ERM

None of the other sites (Bayou Dupont or Scofield Island) exhibited constituent concentrations above the SQuiRT ERLs/ERMs or AETs. As previously discussed in Section 3.5, ERL and ERM values are guidelines to help categorize the range of concentration in sediment where effects are scarcely observed (below the ERL) and the range above which effects are generally observed (above the ERM). The AETs are essentially equivalent to the concentration observed in the highest non-toxic sample, above which adverse biological impacts to the tested organism would be expected. AETs are therefore less conservative concentrations to compare results to than ERLs and ERMs.

Additional research on the use of the SQuiRT ERLs and ERMs was reviewed to better understand the use and application of these criteria for evaluating sediments. The information reviewed (O'Connor, unknown date) states that "While it is being used as such, the sediment quality guideline ERL is not a threshold for any chemical concentration in sediment at which the probability of toxicity shows an abrupt increase. Similarly, while it has been done, there is no basis for assuming that multiple concentrations above the ERL increase the probability of toxicity" and "The ERL is simply a low point on a continuum of bulk chemical concentrations in sediment that roughly relates to sediment toxicity". It is also noted that it is well established that chemical concentrations in sediment vary inversely with particle size (finer-grained sediments tend to have more ERL exceedances) but that grain size is not necessarily related to toxicity, except that in some studies the coarsest-grained materials tended to show less frequent toxicity. This information is being provided to qualify the use of the SQuiRT ERLs and ERMs for comparison to the site sample concentrations from the current investigation, such that there is an appropriate understanding and awareness of the application of these criteria as a rough tool for relating constituent concentrations in sediments/fill material to potential toxicity.

With respect to the SQuiRT ERLs and ERMs at the Lake Hermitage site, only one ERL standard for 2-methylnaphthalene was exceeded at three sample locations (LH-05, LH-19 and LH-20). The remaining exceedances of the ERLs were for one additional PAH constituent (dibenz([a,h]anthracene) at one sample location (LH-19) and seven PAH constituents at one sample location (LH-21). None of the PAH constituent concentrations exceeded the AETs (when ERLs/ERMs were not available).

In general, the majority of the investigation data from the three project sites indicate the presence of coal/pet coke at the identified concentrations do not appear represent an obvious environmental concern based on the results of the benthic toxicity testing, SPLP testing, and the comparison of the metals and PAH data to the SQuiRT ERLs, ERMs or AETs. Specifically, however, the investigation data from the sample locations at the Lake Hermitage site that exhibited higher surface and subsurface coal/pet coke content (primarily sample locations LH-19 through LH-21) may suggest a potential environmental concern based on the exceedances of the SQuiRT ERLs for the PAH constituents at these sample locations. The environmental concern is

considered to be relatively low because the PAH concentrations in the referenced samples are above the range of where effects are scarcely observed (below the ERL) but below the range of which effects are generally observed (above the ERM). With that said, no background chemical data were available for review at the Lake Hermitage site to compare to the site results to determine if the fill material results were any different from the background. It is also important to note that numerous PAH constituents were detected in the Mississippi River borrow material samples (from Bayou Dupont site previous investigation – Table 5) with one PAH constituent (fluorene) exceeding its respective ERL (but below the ERM). The source of the PAH constituents in the Mississippi River borrow samples is not known with certainty. There may be other potential sources of PAHs in the borrow sediments besides the coal/pet coke based on the historical and current industrial operations that are conducted on and near the Mississippi River and the runoff and sediments that are discharged into the river from these sources.

7.0 References

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- GEC, Inc. January 2009. Sediment Testing of Dredging Material Proposed for the Mississippi River Sediment Delivery System – Bayou Dupont (BA-39) Project, ## pages.
- O'Connor, T. P. Unknown Date. The Sediment Quality Guidelines, ERL, is not a Chemical Concentration at the Threshold of Sediment Toxicity, NOAA/SCII, National Center for Coastal Ocean Science, 6 pages.
- United States Environmental Protection Agency/United States Army Corps of Engineers. 1998. Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. EPA-823-B-98-004, Washington, D.C.

Tables

TABLE 1A
SITE OBSERVATION AND BORING DATA - BAYOU DUPONT
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site Site Location Observation/ Sample Date | | Bayou Dupont Mississippi River Sediment Delivery System | | | | | | | |
|---|-------------------|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | | BD-01 1/31/2015 | BD-02 2/1/2015 | BD-03 1/30/2015 | BD-04 1/31/2015 | BD-05 1/31/2015 | BD-06 1/30/2015 | BD-07 1/31/2015 | BD-08 1/30/2015 |
| Latitude | | 29.65125 | 29.65189 | 29.65343 | 29.64979 | 29.64998 | 29.65021 | 29.64707 | 29.64727 |
| Longitude | | 90.02224 | 90.01804 | 90.01413 | 90.02020 | 90.01682 | 90.01274 | 90.01850 | 90.01533 |
| 3-Foot Square Visual Observation Coal/ Pet Coke Size and Cover | >4 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 4 - 2 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 2 - 0.75 inches | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| | <0.75 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Estimated % Cover | 0 | 0 | 0 | 0 | <1 | 0 | 0 | 0 |
| Boring Depth ft-bgs | | 2.5 | | 3 | | 2.5 | | 2.75 | |
| Soil Description | 0 - 1 ft-bgs | sand/ silt | NA | silt/ clay | NA | silt/ sand | NA | silt/clay/sand | NA |
| | 1 - 2 ft-bgs | sand/ silt | | sand/ silt | | silt/ sand | | silt/ sand | |
| | 2 - 3 ft-bgs | sand/ silt | | sand/ silt | | silt/ sand | | sand/ silt | |
| | 3 - 4 ft-bgs | NA | | NA | | NA | | NA | |
| Field Sieve Analysis | | Estimated % Coal passing 1-inch sieve (mass of retained coal in grams) | 100 | NA | 100 | NA | 100 | NA | 100 |
| Gravimetric Test 1 | Sand Volume (ml) | 565 | NA | 660 | NA | 510 | NA | 440 | NA |
| | Coal Volume (ml) | <1 | | <1 | | <1 | | <1 | |
| Gravimetric Test 2 | Sand Volume (ml) | 560 | NA | 540 | NA | 530 | NA | 610 | NA |
| | Coal Volume (ml) | <1 | | <1 | | <1 | | 0 | |
| Average Percent Coal Fines | | <0.18 | NA | <0.17 | NA | <0.19 | NA | <0.10 | NA |
| Benthic Toxicity Sample Rational (High Coal, No/ Low Coal, Background) | | No/Low Coal | NA | NA | NA | High Coal | NA | NA | NA |
| | | | | | | | | | |
| Site Location Observation/ Sample Date | | BD-09 1/30/2015 | BD-10 1/30/2015 | BD-11 2/1/2015 | BD-12 1/30/2015 | BD-13 2/1/2015 | BD-14 2/1/2015 | BD-15 2/26/2015 | BD-BG 1/31/2015 |
| Latitude | | 29.64689 | 29.64785 | 29.65160 | 29.65223 | 29.65433 | 29.65757 | 29.65245 | 29.65223 |
| Longitude | | 90.01135 | 90.00712 | 90.00364 | 90.00980 | 90.00748 | 90.01158 | 90.01932 | 90.02512 |
| 3-Foot Square Visual Observation Coal/ Pet Coke Size and Cover | >4 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 4 - 2 inches | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| | 2 - 0.75 inches | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| | <0.75 inches | 1 | 0 | 0 | 0 | 0 | 0 | 30 | 0 |
| | Estimated % Cover | <1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Boring Depth ft-bgs | | 3 | 2.5 | | | 2.5 | | 3 | |
| Soil Description | 0 - 1 ft-bgs | sand | sand | NA | NA | sand/ silt | NA | sand/ silt | NA |
| | 1 - 2 ft-bgs | sand | sand | | | sand/ silt | | sand/ silt | |
| | 2 - 3 ft-bgs | sand | sand | | | sand/ silt | | sand/ silt | |
| | 3 - 4 ft-bgs | NA | NA | | | NA | | NA | |
| Field Sieve Analysis | | Estimated % Coal passing 1-inch sieve (mass of retained coal in grams) | 100 | 100 | NA | NA | 100 | NA | 100 |
| Gravimetric Test 1 | Sand Volume (ml) | 530 | 510 | NA | NA | 430 | NA | 460 | NA |
| | Coal Volume (ml) | 5 | <1 | | | <1 | | <1 | |
| Gravimetric Test 2 | Sand Volume (ml) | 440 | 490 | NA | NA | 500 | NA | 420 | NA |
| | Coal Volume (ml) | 2.5 | <1 | | | <1 | | <1 | |
| Average Percent Coal Fines | | 0.77 | <0.20 | NA | NA | <0.21 | NA | <0.23 | NA |
| Benthic Toxicity Sample Rational (High Coal, No/ Low Coal, Background) | | High Coal | High Coal | NA | NA | NA | NA | NA | Background |

Notes:
 cm=centimeter
 ft-bgs=feet below ground surface
 ml=milliliter
 NA=not applicable/ not available

TABLE 1B
SITE OBSERVATION AND BORING DATA - SCOFIELD ISLAND
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site Site Location Observation/ Sample Date | | Scofield Island Restoration Project | | | | | | | | | |
|---|---|-------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | | SI-01 1/28/2015 | SI-02 1/28/2015 | SI-03 1/28/2015 | SI-04 1/28/2015 | SI-05 1/29/2015 | SI-06 1/29/2015 | SI-07 1/29/2015 | SI-08 1/29/2015 | SI-09 1/29/2015 | SI-BG 1/29/2015 |
| Latitude | | 29.24807 | 29.45140 | 29.24294 | 29.24159 | 29.24029 | 29.23897 | 29.23767 | 29.23663 | 29.23510 | 29.23455 |
| Longitude | | 89.56367 | 89.56109 | 89.55695 | 89.55232 | 89.54768 | 89.54305 | 89.53815 | 89.53292 | 89.52708 | 89.52339 |
| 3-Foot Square Visual Observation Coal/ Pet Coke Size and Cover | >4 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 4 - 2 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 2 - 0.75 inches | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| | <0.75 inches | 20 | 3 | 5 | 3 | 3 | 0 | 3 | 20 | 0 | 0 |
| | Estimated % Cover | <1 | <1 | <1 | <1 | <1 | 0 | <1 | <1 | 0 | 0 |
| Boring Depth ft-bgs | | 3 | | 3 | | 4 | | 3 | | 1 | |
| Soil Description | 0 - 1 ft-bgs | silt/ sand | NA | silt/ sand | NA | silt/ sand | NA | silt/ sand | NA | silt/ sand | NA |
| | 1 - 2 ft-bgs | silt/ sand | | silt/ sand | | silt/ sand | | silt/ sand | | NA | |
| | 2 - 3 ft-bgs | silt/ sand | | silt/ sand | | silt/ sand | | silt/ sand | | NA | |
| | 3 - 4 ft-bgs | NA | | NA | | silt/ sand | | NA | | NA | |
| Field Sieve Analysis | Estimated % Coal passing 1-inch sieve (mass of retained coal in grams) | 100 | NA | 100 | NA | 100 | NA | 100 | NA | 100 | NA |
| Gravimetric Test 1 | Sand Volume (ml) | 540 | NA | 580 | NA | 450 | NA | 490 | NA | 540 | NA |
| | Coal Volume (ml) | <1 | | <1 | | <1 | | 0 | | 0 | |
| Gravimetric Test 2 | Sand Volume (ml) | 255 | NA | 580 | NA | 570 | NA | 650 | NA | 490 | NA |
| | Coal Volume (ml) | <1 | | <1 | | <1 | | 0 | | 0 | |
| Average Percent Coal Fines | | <0.25 | NA | <0.17 | NA | <0.20 | NA | 0 | NA | 0 | NA |
| Benthic Toxicity Sample Rational (High Coal, No/ Low Coal, Background) | | High Coal | NA | NA | NA | NA | NA | NA | NA | No/ Low Coal | Background |

Notes:
 cm=centimeter
 ft-bgs=feet below ground surface
 ml=milliliter
 NA=not applicable/ not available

TABLE 1C
SITE OBSERVATION AND BORING DATA - LAKE HERMITAGE
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site Site Location Observation/ Sample Date | | Lake Hermitage Marsh Creation Project | | | | | | | | | | |
|---|--|---------------------------------------|----------|------------|------------|----------------|------------|------------|------------|------------|------------|------------|
| | | LH-01 | LH-02 | LH-03 | LH-04 | LH-05 | LH-06 | LH-07 | LH-08 | LH-09 | LH-10 | LH-11 |
| Latitude | | 29.54560 | 29.54799 | 29.55064 | 29.55078 | 29.55425 | 29.55419 | 29.55829 | 29.55793 | 29.55724 | 29.55429 | 29.55380 |
| Longitude | | 89.85861 | 89.85410 | 89.86261 | 89.85670 | 89.86611 | 89.86218 | 89.85403 | 89.84727 | 89.84310 | 89.85384 | 89.84995 |
| 3-Foot Square Visual Observation Coal/ Pet Coke Size and Cover | >4 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 4 - 2 inches | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 |
| | 2 - 0.75 inches | 0 | 2 | 0 | 4 | 0 | 1 | 1 | 3 | 3 | 4 | 4 |
| | <0.75 inches | 0 | 3 | 4 | 45 | 9 | 6 | 60 | 50 | 12 | 17 | 25 |
| | Estimated % Cover | <1 | <1 | <1 | 2 | <1 | 1 | 1 | 2 | <1 | <1 | 3 |
| Boring Depth ft-bgs | | | | 3 | 3 | 3 | | | 3 | | | |
| Soil Description | 0 - 1 ft-bgs | NA | NA | silt/ sand | silt/ sand | silt/sand/clay | NA | NA | silt/ sand | NA | NA | NA |
| | 1 - 2 ft-bgs | | | silt/ sand | silt/ sand | silt/sand/clay | | | silt/ sand | | | |
| | 2 - 3 ft-bgs | | | silt/ sand | silt/ sand | silt/ sand | | | silt/ sand | | | |
| | 3 - 4 ft-bgs | | | NA | NA | NA | | | NA | | | |
| Field Sieve Analysis | Estimated % Coal passing 1-inch sieve (mass of retained coal in grams) | NA | NA | 100 | 100 | 100 | NA | NA | 100 | NA | NA | NA |
| Gravimetric Test 1 | Sand Volume (ml) | NA | NA | 450 | 530 | 580 | NA | NA | 570 | NA | NA | NA |
| | Coal Volume (ml) | | | <1 | <1 | 0 | | | 1 | | | |
| Gravimetric Test 2 | Sand Volume (ml) | NA | NA | 510 | 560 | 540 | NA | NA | 600 | NA | NA | NA |
| | Coal Volume (ml) | | | <1 | <1 | 1 | | | 1 | | | |
| Average Percent Coal Fines | | NA | NA | <0.21 | <0.18 | 0.09 | NA | NA | 0.17 | NA | NA | NA |
| Benthic Toxicity Sample Rational (High Coal, No/ Low Coal, Background) | | NA | NA | NA | High Coal | NA | NA | NA | High Coal | NA | NA | NA |
| Site Location Observation/ Sample Date | | LH-12 | LH-13 | LH-14 | LH-15 | LH-16 | LH-17 | LH-18 | LH-19 | LH-20 | LH-21 | LH-BG |
| Latitude | | 29.55422 | 29.55463 | 29.55457 | 29.54965 | 29.55030 | 29.55137 | 29.55197 | 29.55347 | 29.55153 | 29.55390 | 29.55850 |
| Longitude | | 89.84444 | 89.83984 | 89.83550 | 89.84685 | 89.84226 | 89.83838 | 89.83387 | 89.83766 | 89.83727 | 89.86270 | 89.86016 |
| 3-Foot Square Visual Observation Coal/ Pet Coke Size and Cover | >4 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 |
| | 4 - 2 inches | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 7 | 0 |
| | 2 - 0.75 inches | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 30 | 40 | 0 |
| | <0.75 inches | 100 | 2 | 0 | 0 | 0 | 1 | 1 | 20 | >1000 | >100 | 0 |
| | Estimated % Cover | 5 | <1 | 0 | 0 | 0 | 5 | <1 | 40 | 75 | 10 | 0 |
| Boring Depth ft-bgs | | | 3 | | 2.5 | 2 | 4 | 3 | 2.5 | 3 | 3 | |
| Soil Description | 0 - 1 ft-bgs | NA | NA | silt/ sand | silt/ sand | silt/ sand | silt/ sand | silt/ sand | silt | silt/ sand | silt/ sand | NA |
| | 1 - 2 ft-bgs | | | silt/ sand | silt/ sand | silt/ sand | silt/ sand | silt | silt/ sand | silt/ sand | | |
| | 2 - 3 ft-bgs | | | silt/ sand | NA | silt/ sand | silt/ sand | silt | silt/ sand | silt/ sand | | |
| | 3 - 4 ft-bgs | | | NA | NA | silt/ sand | NA | NA | NA | NA | | |
| Field Sieve Analysis | Estimated % Coal passing 1-inch sieve (mass of retained coal in grams) | NA | 100 | NA | 100 | 100 | 99 (3) | 100 | 100 | 100 | 100 | NA |
| Gravimetric Test 1 | Sand Volume (ml) | NA | 520 | NA | 500 | 440 | 570 | 560 | 570 | 530 | 540 | NA |
| | Coal Volume (ml) | | 1 | | <1 | 1 | 2 | 1 | 20 | 15 | 15 | |
| Gravimetric Test 2 | Sand Volume (ml) | NA | 550 | NA | 450 | 440 | 590 | 530 | 570 | 540 | 480 | NA |
| | Coal Volume (ml) | | 0 | | <1 | 1 | 1 | <1 | 10 | 10 | 15 | |
| Average Percent Coal Fines | | NA | 0.09 | NA | <0.21 | 0.23 | 0.26 | <0.18 | 2.6 | 2.3 | 2.9 | NA |
| Benthic Toxicity Sample Rational (High Coal, No/ Low Coal, Background) | | NA | NA | NA | NA | No/ Low Coal | High Coal | NA | High Coal | High Coal | High Coal | Background |

Notes:
 cm=centimeter
 ft-bgs=feet below ground surface
 ml=milliliter
 NA=not applicable/ not available

TABLE 2A
SURFACE SOIL ANALYTICAL RESULTS - BAYOU DUPONT
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site | Bayou Dupont Mississippi River Sediment Delivery System | | | | | | | | |
|-----------------------------|---|-----------|-----------|-----------|-----------|-----------|----------|-----------|---------|
| | Site Location | BD-01 | BD-03 | BD-05 | BD-07 | BD-09 | BD-10 | BD-13 | BD-15 |
| Sample Date | 1/31/2015 | 1/30/2015 | 1/31/2015 | 1/31/2015 | 1/30/2015 | 1/30/2015 | 2/1/2015 | 2/26/2015 | |
| Parameter | SQ <i>u</i> IRT ERL / ERM | | | | | | | | |
| Grain Size (%) | | | | | | | | | |
| Sand | Not Applicable | 82.7 | NA | 92.2 | NA | 93.6 | 77.3 | NA | NA |
| Silt, Clay, Colloids | Not Applicable | 17.3 | NA | 7.8 | NA | 6.1 | 22.7 | NA | NA |
| Metals (mg/dry kg) | | | | | | | | | |
| Arsenic | 8.2 / 70 | 1.5 | 1.5 | 0.88 | 1.8 | 1.4 | 2.1 | 2.1 | 1.9 |
| Cadmium | 1.2 / 9.6 | <0.59 | <0.60 | <0.61 | <0.59 | <0.58 | <0.60 | <0.60 | <0.60 |
| Nickel | 20.9 / 51.6 | 5.8 | 5.6 | 5.0 | 5.9 | 6.8 | 8.3 | 5.6 | 7.1 |
| Lead | 46.7 / 218 | 4.6 | 4.6 | 2.5 | 5.9 | 4.6 | 5.4 | 4.1 | 3.6 |
| Vanadium | 57* | 5.1 | 6.1 | 3.1 | 7.0 | 4.9 | 6.9 | 3.9 | 5.3 |
| Mercury | 0.15 / 0.71 | <0.019 | <0.019 | <0.019 | 0.020 | <0.019 | 0.030 | <0.019 | <0.020 |
| PAH - Low Level (mg/dry kg) | | | | | | | | | |
| 1-Methylnaphthalene | Not Available | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| 2-Methylnaphthalene | 0.07 / 0.67 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Acenaphthene | 0.016 / 0.5 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Acenaphthylene | 0.044 / 0.64 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Anthracene | 0.0853 / 1.1 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Benzo[a]anthracene | 0.261 / 1.6 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Benzo[a]pyrene | 0.43 / 1.6 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | 0.016 | 0.012 | <0.0081 |
| Benzo[b]fluoranthene | 1.8* | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | 0.010 | <0.0081 | <0.0081 |
| Benzo[g,h,i]perylene | 0.67* | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Benzo[k]fluoranthene | 1.8* | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Chrysene | 0.384 / 2.8 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | 0.010 | <0.0081 | <0.0081 |
| Dibenz(a,h)anthracene | 0.0634 / 0.26 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Fluoranthene | 0.6 / 5.1 | <0.0081 | 0.028 | <0.0083 | 0.016 | 0.013 | 0.023 | 0.018 | <0.0081 |
| Fluorene | 0.019 / 0.54 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Indeno[1,2,3-cd]pyrene | 0.6* | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Naphthalene | 0.16 / 2.1 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Phenanthrene | 0.24 / 1.5 | <0.0081 | 0.021 | <0.0083 | <0.0080 | <0.0083 | 0.025 | 0.014 | <0.0081 |
| Pyrene | 0.665 / 2.6 | <0.0081 | 0.015 | <0.0083 | <0.0080 | 0.010 | 0.018 | 0.019 | <0.0081 |

Notes:

SQ*u*IRT ERL / ERM = NOAA Screening Quick Reference Table Effects Range Low (ERL) / Effects Range Median (ERM) for marine sediment

* = NOAA SQ*u*IRT Apparent Effects Threshold (AET) - ERL / ERM not available

** = Sample LH-21 was reanalyzed a second time approximately one month after the initial analysis

< = Concentration below indicated laboratory reporting limit

NA = Not Analyzed

mg/dry kg = milligrams per dry kilogram (wet weight results were converted to a dry weight basis using the average soil moisture content)

Result evaluation color key: <ERL or AET "Good" >ERL & <ERM "Intermediate" >ERM or AET "Poor"

TABLE 2B
SURFACE SOIL ANALYTICAL RESULTS - SCOFIELD ISLAND

Coastal Protection and Restoration Authority
Investigation of Coal and Petroleum Coke Occurrences in
Restoration Projects Using Mississippi River Sediment

| Project Site | Scofield Island Restoration Project | | | | | | | |
|-----------------------------|-------------------------------------|-----------|---------|-----------|-----------|---------|-----------|-----------|
| | Site Location | SI-01 | DUP-1 | SI-03 | SI-05 | SI-07 | DUP-2 | SI-09 |
| Sample Date | | 1/28/2015 | | 1/28/2015 | 1/29/2015 | | 1/29/2015 | 1/29/2015 |
| Parameter | SQuiRT ERL / ERM | | | | | | | |
| Grain Size (%) | | | | | | | | |
| Sand | Not Applicable | 91.9 | NA | NA | NA | NA | NA | 93.4 |
| Silt, Clay, Colloids | Not Applicable | 8.1 | NA | NA | NA | NA | NA | 6.6 |
| Metals (mg/dry kg) | | | | | | | | |
| Arsenic | 8.2 / 70 | 1.4 | 1.5 | 1.5 | 2.1 | 1.4 | 1.6 | 2.1 |
| Cadmium | 1.2 / 9.6 | <0.59 | <0.60 | <0.63 | <0.63 | <0.59 | <0.61 | <0.60 |
| Nickel | 20.9 / 51.6 | 6.6 | 6.1 | 6.9 | 8.5 | 6.4 | 6.8 | 8.6 |
| Lead | 46.7 / 218 | 3.4 | 3.3 | 3.5 | 4.8 | 3.1 | 3.4 | 4.4 |
| Vanadium | 57* | 3.8 | 3.9 | 5.1 | 5.4 | 4.4 | 4.4 | 5.4 |
| Mercury | 0.15 / 0.71 | <0.019 | <0.020 | <0.020 | <0.019 | <0.020 | <0.019 | <0.020 |
| PAH - Low Level (mg/dry kg) | | | | | | | | |
| 1-Methylnaphthalene | Not Available | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | 0.010 |
| 2-Methylnaphthalene | 0.07 / 0.67 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | 0.011 |
| Acenaphthene | 0.016 / 0.5 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Acenaphthylene | 0.044 / 0.64 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Anthracene | 0.0853 / 1.1 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Benzo[a]anthracene | 0.261 / 1.6 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Benzo[a]pyrene | 0.43 / 1.6 | <0.0081 | 0.0091 | <0.0084 | 0.010 | <0.0081 | <0.0083 | <0.0084 |
| Benzo[b]fluoranthene | 1.8* | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Benzo[g,h,i]perylene | 0.67* | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Benzo[k]fluoranthene | 1.8* | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Chrysene | 0.384 / 2.8 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Dibenz[a,h]anthracene | 0.0634 / 0.26 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Fluoranthene | 0.6 / 5.1 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Fluorene | 0.019 / 0.54 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Indeno[1,2,3-cd]pyrene | 0.6* | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Naphthalene | 0.16 / 2.1 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | 0.0094 |
| Phenanthrene | 0.24 / 1.5 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |
| Pyrene | 0.665 / 2.6 | <0.0081 | <0.0083 | <0.0084 | <0.0083 | <0.0081 | <0.0083 | <0.0084 |

Notes:

SQuiRT ERL / ERM = NOAA Screening Quick Reference Table Effects Range Low (ERL) / Effects Range Median (ERM) for marine sediment

* = NOAA SQuiRT Apparent Effects Threshold (AET) - ERL / ERM not available

** = Sample LH-21 was reanalyzed a second time approximately one month after the initial analysis

< = Concentration below indicated laboratory reporting limit

NA = Not Analyzed

mg/dry kg = milligrams per dry kilogram (wet weight results were converted to a dry weight basis using the average soil moisture content)

Result evaluation color key: <ERL or AET "Good" >ERL & <ERM "Intermediate" >ERM or AET "Poor"

TABLE 2C
SURFACE SOIL ANALYTICAL RESULTS - LAKE HERMITAGE
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Parameter | SQuiRT ERL / ERM | Lake Hermitage Marsh Creation Project | | | | | | | | | | | | |
|-----------------------------|------------------|---------------------------------------|---------|---------------|---------|---------|---------|---------|---------|---------|-------------|--------------|--------------|---------|
| | | Project Site | | Site Location | | | | | | | | | | |
| | | Sample Date | LH-03 | LH-04 | LH-05 | LH-08 | LH-13 | LH-15 | LH-16 | LH-17 | LH-18 | LH-19 | LH-20 | LH-21 |
| Grain Size (%) | | | | | | | | | | | | | | |
| Sand | Not Applicable | NA | 92.8 | NA | 92.2 | NA | NA | 74.1 | 86.5 | NA | NA | NA | NA | NA |
| Silt, Clay, Colloids | Not Applicable | NA | 7.2 | NA | 7.8 | NA | NA | 25.9 | 13.5 | NA | NA | NA | NA | NA |
| Metals (mg/dry kg) | | | | | | | | | | | | | | |
| Arsenic | 8.2 / 70 | 1.4 | 1.9 | 3.6 | 2.4 | 1.2 | 2.8 | 2.9 | 3.9 | 1.4 | 3.4 | 6.4 | 7.4 | 4.3 |
| Cadmium | 1.2 / 9.6 | <0.58 | <0.59 | <0.59 | <0.60 | <0.58 | <0.59 | <0.61 | <0.61 | <0.59 | <0.63 | <0.59 | 0.85 | <0.59 |
| Nickel | 20.9 / 51.6 | 7.5 | 7.8 | 9.6 | 8.5 | 6.5 | 7.5 | 9.1 | 10.4 | 6.8 | 11.1 | 11.4 | 16.3 | 12.1 |
| Lead | 46.7 / 218 | 3.5 | 3.9 | 7.9 | 4.9 | 3.4 | 5.6 | 6.5 | 7.3 | 3.4 | 6.6 | 9.3 | 12.5 | 9.3 |
| Vanadium | 57* | 5.3 | 5.0 | 7.9 | 5.4 | 4.8 | 5.6 | 7.1 | 7.3 | 4.5 | 7.8 | 8.9 | 16.3 | 20.0 |
| Mercury | 0.15 / 0.71 | <0.020 | <0.020 | <0.019 | <0.020 | <0.019 | <0.019 | <0.019 | <0.019 | <0.019 | <0.019 | <0.019 | 0.048 | 0.028 |
| PAH - Low Level (mg/dry kg) | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | Not Available | <0.0083 | 0.023 | 0.066 | 0.0088 | <0.0084 | 0.026 | 0.016 | <0.0085 | <0.0080 | 0.071 | 0.051 | 0.040 | 0.015 |
| 2-Methylnaphthalene | 0.07 / 0.67 | <0.0083 | 0.029 | 0.093 | 0.010 | <0.0084 | 0.033 | 0.019 | <0.0085 | <0.0080 | 0.11 | 0.073 | 0.054 | 0.024 |
| Acenaphthene | 0.016 / 0.5 | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | <0.0083 | <0.0083 | <0.0085 | <0.0080 | <0.0080 | <0.0081 | 0.043 | <0.0081 |
| Acenaphthylene | 0.044 / 0.64 | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | <0.0083 | <0.0083 | <0.0085 | <0.0080 | <0.0080 | <0.0081 | 0.013 | <0.0081 |
| Anthracene | 0.0853 / 1.1 | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | <0.0083 | <0.0083 | <0.0085 | 0.021 | 0.012 | 0.0081 | 0.20 | 0.0091 |
| Benzo[a]anthracene | 0.261 / 1.6 | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | 0.015 | <0.0083 | <0.0085 | 0.080 | 0.041 | 0.015 | 0.44 | 0.028 |
| Benzo[a]pyrene | 0.43 / 1.6 | 0.018 | 0.016 | 0.013 | 0.020 | <0.0084 | 0.010 | 0.070 | 0.086 | 0.068 | 0.043 | 0.019 | 0.31 | 0.028 |
| Benzo[b]fluoranthene | 1.8* | <0.0083 | 0.010 | <0.0084 | <0.0084 | <0.0084 | 0.015 | 0.012 | 0.012 | 0.103 | 0.038 | 0.013 | 0.36 | 0.020 |
| Benzo[g,h,i]perylene | 0.67* | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | <0.0083 | <0.0083 | <0.0085 | 0.050 | 0.028 | 0.014 | 0.15 | 0.023 |
| Benzo[k]fluoranthene | 1.8* | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | 0.015 | <0.0083 | <0.0085 | 0.036 | <0.0080 | <0.0081 | <0.0081 | <0.0081 |
| Chrysene | 0.384 / 2.8 | <0.0083 | 0.010 | 0.018 | <0.0084 | <0.0084 | 0.016 | 0.0090 | <0.0085 | 0.083 | 0.051 | 0.018 | 0.41 | 0.034 |
| Dibenz[a,h]anthracene | 0.0634 / 0.26 | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | <0.0083 | <0.0083 | <0.0085 | 0.014 | 0.13 | <0.0081 | <0.0081 | 0.012 |
| Fluoranthene | 0.6 / 5.1 | <0.0083 | 0.013 | 0.029 | <0.0084 | <0.0084 | 0.020 | 0.014 | 0.018 | 0.18 | 0.040 | 0.020 | 0.99 | 0.021 |
| Fluorene | 0.019 / 0.54 | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | <0.0083 | <0.0083 | <0.0085 | <0.0080 | <0.0080 | <0.0081 | 0.065 | <0.0081 |
| Indeno[1,2,3-cd]pyrene | 0.6* | <0.0083 | <0.0081 | <0.0084 | <0.0084 | <0.0084 | <0.0083 | <0.0083 | <0.0085 | 0.061 | 0.013 | 0.010 | 0.16 | 0.013 |
| Naphthalene | 0.16 / 2.1 | <0.0083 | 0.018 | 0.053 | <0.0084 | <0.0084 | 0.025 | 0.013 | <0.0085 | <0.0080 | 0.070 | 0.054 | 0.041 | 0.019 |
| Phenanthrene | 0.24 / 1.5 | <0.0083 | 0.012 | 0.046 | <0.0084 | <0.0084 | 0.024 | 0.015 | 0.0091 | 0.089 | 0.048 | 0.030 | 0.60 | 0.016 |
| Pyrene | 0.665 / 2.6 | <0.0083 | 0.018 | 0.039 | 0.012 | <0.0084 | 0.028 | 0.025 | 0.036 | 0.15 | 0.066 | 0.034 | 0.86 | 0.039 |

Notes:

SQuiRT ERL / ERM = NOAA Screening Quick Reference Table Effects Range Low (ERL) / Effects Range Median (ERM) for marine sediment

* = NOAA SQuiRT Apparent Effects Threshold (AET) - ERL / ERM not available

** = Sample LH-21 was reanalyzed a second time approximately one month after the initial analysis

< = Concentration below indicated laboratory reporting limit

NA = Not Analyzed

mg/dry kg = milligrams per dry kilogram (wet weight results were converted to a dry weight basis using the average soil moisture content)

Result evaluation color key: <ERL or AET "Good" >ERL & <ERM "Intermediate" >ERM or AET "Poor"

TABLE 3A
SURFACE SOIL SPLP ANALYTICAL RESULTS - BAYOU DUPONT
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site Site Location Sample Date | Bayou Dupont | |
|--|--|-----------|
| | Mississippi River Sediment Delivery System | |
| | | BD-05 |
| | | 1/31/2015 |
| Metals (mg/L) | | |
| Arsenic | | <0.0050 |
| Cadmium | | <0.0050 |
| Nickel | | <0.0050 |
| Lead | | <0.010 |
| Vanadium | | <0.0050 |
| Mercury | | <0.0016 |
| PAH - Low Level (mg/L) | | |
| 1-Methylnaphthalene | | <0.00025 |
| 2-Methylnaphthalene | | <0.00025 |
| Acenaphthene | | <0.00025 |
| Acenaphthylene | | <0.00025 |
| Anthracene | | <0.00025 |
| Benzo[a]anthracene | | <0.00025 |
| Benzo[a]pyrene | | <0.00025 |
| Benzo[b]fluoranthene | | <0.00025 |
| Benzo[g,h,i]perylene | | <0.00025 |
| Benzo[k]fluoranthene | | <0.00025 |
| Chrysene | | <0.00025 |
| Dibenz(a,h)anthracene | | <0.00025 |
| Fluoranthene | | <0.00025 |
| Fluorene | | <0.00025 |
| Indeno[1,2,3-cd]pyrene | | <0.00025 |
| Naphthalene | | <0.00025 |
| Phenanthrene | | <0.00025 |
| Pyrene | | <0.00025 |

Notes:

mg/L = milligrams per liter

SPLP = Synthetic Precipitation Leaching Procedure

< = Concentration below indicated laboratory reporting limit

TABLE 3B
SURFACE SOIL SPL ANALYTICAL RESULTS - SCOFIELD ISLAND
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site Site Location Sample Date | Scofield Island |
|--|---------------------|
| | Restoration Project |
| | SI-01 |
| | 1/28/2015 |
| Metals (mg/L) | |
| Arsenic | <0.0050 |
| Cadmium | <0.0050 |
| Nickel | <0.0050 |
| Lead | <0.010 |
| Vanadium | <0.0050 |
| Mercury | <0.0016 |
| PAH - Low Level (mg/L) | |
| 1-Methylnaphthalene | <0.00033 |
| 2-Methylnaphthalene | <0.00033 |
| Acenaphthene | <0.00033 |
| Acenaphthylene | <0.00033 |
| Anthracene | <0.00033 |
| Benzo[a]anthracene | <0.00033 |
| Benzo[a]pyrene | <0.00033 |
| Benzo[b]fluoranthene | <0.00033 |
| Benzo[g,h,i]perylene | <0.00033 |
| Benzo[k]fluoranthene | <0.00033 |
| Chrysene | <0.00033 |
| Dibenz(a,h)anthracene | <0.00033 |
| Fluoranthene | <0.00033 |
| Fluorene | <0.00033 |
| Indeno[1,2,3-cd]pyrene | <0.00033 |
| Naphthalene | <0.00033 |
| Phenanthrene | <0.00033 |
| Pyrene | <0.00033 |

Notes:
 mg/L = milligrams per liter
 SPLP = Synthetic Precipitation Leaching Procedure
 < = Concentration below indicated laboratory reporting limit

TABLE 3C
SURFACE SOIL SPL ANALYTICAL RESULTS - LAKE HERMITAGE
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site Site Location Sample Date | Lake Hermitage Marsh Creation Project | |
|--|--|-----------|
| | LH-17 | LH-21 |
| | 1/26/2015 | 2/26/2015 |
| Metals (mg/L) | | |
| Arsenic | <0.0050 | <0.0050 |
| Cadmium | <0.0050 | <0.0050 |
| Nickel | <0.0050 | <0.0050 |
| Lead | <0.010 | <0.010 |
| Vanadium | <0.0050 | <0.0050 |
| Mercury | <0.0016 | <0.0016 |
| PAH - Low Level (mg/L) | | |
| 1-Methylnaphthalene | <0.00025 | <0.00025 |
| 2-Methylnaphthalene | <0.00025 | <0.00025 |
| Acenaphthene | <0.00025 | <0.00025 |
| Acenaphthylene | <0.00025 | <0.00025 |
| Anthracene | <0.00025 | <0.00025 |
| Benzo[a]anthracene | <0.00025 | <0.00025 |
| Benzo[a]pyrene | <0.00025 | <0.00025 |
| Benzo[b]fluoranthene | <0.00025 | <0.00025 |
| Benzo[g,h,i]perylene | <0.00025 | <0.00025 |
| Benzo[k]fluoranthene | <0.00025 | <0.00025 |
| Chrysene | <0.00025 | <0.00025 |
| Dibenz(a,h)anthracene | <0.00025 | <0.00025 |
| Fluoranthene | <0.00025 | <0.00025 |
| Fluorene | <0.00025 | <0.00025 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | <0.00025 |
| Naphthalene | <0.00025 | <0.00025 |
| Phenanthrene | <0.00025 | <0.00025 |
| Pyrene | <0.00025 | <0.00025 |

Notes:
 mg/L = milligrams per liter
 SPLP = Synthetic Precipitation Leaching Procedure
 < = Concentration below indicated laboratory reporting limit

TABLE 4A
BENTHIC TOXICITY TESTING RESULTS - BAYOU DUPONT
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site | Bayou Dupont Mississippi River Sediment Delivery System | | | | | |
|--------------------------------|---|-----------|-----------|-----------|-----------|-------|
| | Site Location | BD-01 | BD-05 | BD-09 | BD-10 | BD-BG |
| Sample Date | 1/31/2015 | 1/31/2015 | 1/30/2015 | 1/30/2015 | 1/31/2015 | - |
| Parameter | | | | | | |
| Mysidopsis bahia | | | | | | |
| % Survival | 100 | 94 | 96 | 92 | 96 | 96 |
| % Mortality | 0 | 6 | 4 | 8 | 4 | 4 |
| Difference from Background | +4 | -2 | 0 | -4 | - | 0 |
| Difference from Lab Control | +4 | -2 | 0 | -4 | 0 | - |
| Toxicity Indicated? | No | No | No | No | No | No |
| Leptocheirus plumulosus | | | | | | |
| % Survival | 94 | 98 | 96 | 95 | 94 | 95 |
| % Mortality | 6 | 2 | 4 | 5 | 6 | 5 |
| Difference from Background | 0 | +4 | +2 | +1 | - | +1 |
| Difference from Lab Control | -1 | +3 | +1 | 0 | -1 | - |
| Toxicity Indicated? | No | No | No | No | No | No |

Notes:

Positive difference from background/lab control indicates decreased toxicity exhibited by sample

Negative difference from background/lab control indicates increased toxicity exhibited by sample

TABLE 4B
BENTHIC TOXICITY TESTING RESULTS - SCOFIELD ISLAND

Coastal Protection and Restoration Authority
Investigation of Coal and Petroleum Coke Occurrences in
Restoration Projects Using Mississippi River Sediment

| Project Site | Scofield Island Restoration Project | | | |
|--------------------------------|-------------------------------------|-----------|-----------|-------------|
| | SI-01 | SI-09 | SI-BG | Lab Control |
| Sample Date | 1/28/2015 | 1/29/2015 | 1/29/2015 | - |
| Parameter | | | | |
| Mysidopsis bahia | | | | |
| % Survival | 98 | 100 | 94 | 96 |
| % Mortality | 2 | 0 | 6 | 4 |
| Difference from Background | +4 | +6 | - | +2 |
| Difference from Lab Control | +2 | +4 | -2 | - |
| Toxicity Indicated? | No | No | No | No |
| Leptocheirus plumulosus | | | | |
| % Survival | 97 | 100 | 98 | 99 |
| % Mortality | 3 | 0 | 2 | 1 |
| Difference from Background | -1 | +2 | - | +1 |
| Difference from Lab Control | -2 | +1 | -1 | - |
| Toxicity Indicated? | No | No | No | No |

Notes:

Positive difference from background/lab control indicates decreased toxicity exhibited by sample

Negative difference from background/lab control indicates increased toxicity exhibited by sample

TABLE 4C
BENTHIC TOXICITY TESTING RESULTS - LAKE HERMITAGE
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site | Lake Hermitage Marsh Creation Project | | | | | | |
|--------------------------------|---------------------------------------|-----------|-----------|-----------|-----------|-------|-------------|
| | Site Location | LH-04 | LH-08 | LH-16 | LH-17 | LH-BG | Lab Control |
| Sample Date | 1/27/2015 | 1/27/2015 | 1/26/2015 | 1/26/2015 | 1/28/2015 | - | - |
| Parameter | | | | | | | |
| Mysidopsis bahia | | | | | | | |
| % Survival | 98 | 100 | 96 | 94 | 94 | 96 | |
| % Mortality | 2 | 0 | 4 | 6 | 6 | 4 | |
| Difference from Background | +4 | +6 | +2 | 0 | - | +2 | |
| Difference from Lab Control | +2 | +4 | 0 | -2 | -2 | - | |
| Toxicity Indicated? | No | No | No | No | No | No | |
| Leptocheirus plumulosus | | | | | | | |
| % Survival | 98 | 94 | 97 | 99 | 96 | 96 | |
| % Mortality | 2 | 6 | 3 | 1 | 4 | 4 | |
| Difference from Background | +2 | -2 | +1 | +3 | - | 0 | |
| Difference from Lab Control | +2 | -2 | +1 | +3 | 0 | - | |
| Toxicity Indicated? | No | No | No | No | No | No | |

| Project Site | Lake Hermitage Marsh Creation Project | | | | | |
|--------------------------------|---------------------------------------|-----------|-----------|-----------|-----------|-------------|
| | Site Location | LH-19 | LH-20 | LH-21 | LH-BG | Lab Control |
| Sample Date | 2/26/2015 | 2/26/2015 | 2/26/2015 | 2/26/2015 | 2/26/2015 | - |
| Parameter | | | | | | |
| Mysidopsis bahia | | | | | | |
| % Survival | 96 | 94 | 96 | 100 | 98 | |
| % Mortality | 4 | 6 | 4 | 0 | 2 | |
| Difference from Background | -4 | -6 | -4 | - | -2 | |
| Difference from Lab Control | -2 | -4 | -2 | +2 | - | |
| Toxicity Indicated? | No | No | No | No | No | |
| Leptocheirus plumulosus | | | | | | |
| % Survival | 95 | 98 | 96 | 98 | 96 | |
| % Mortality | 5 | 2 | 4 | 2 | 4 | |
| Difference from Background | -3 | 0 | -2 | - | -2 | |
| Difference from Lab Control | -1 | +2 | 0 | +2 | - | |
| Toxicity Indicated? | No | No | No | No | No | |

Notes:

Positive difference from background/lab control indicates decreased toxicity exhibited by sample

Negative difference from background/lab control indicates increased toxicity exhibited by sample

TABLE 5
ANALYTICAL RESULTS COMPARISON TO PREVIOUS INVESTIGATION
 Coastal Protection and Restoration Authority
 Investigation of Coal and Petroleum Coke Occurrences in
 Restoration Projects Using Mississippi River Sediment

| Project Site | | Previous Investigation | | | | | | Bayou Dupont Mississippi River Sediment Delivery System | | | | | | | |
|-------------------------------------|---------------|------------------------|---------------|--------------|-----------|---------|---------|---|---------|---------|---------|---------|---------|---------|---------|
| Site Location | | Borrow North | Borrow Center | Borrow South | Reference | Fill 1 | Fill 2 | BD-01 | BD-03 | BD-05 | BD-07 | BD-09 | BD-10 | BD-13 | BD-15 |
| Parameter | SQIRT | | | | | | | | | | | | | | |
| Metals (mg/ dry kg) | | | | | | | | | | | | | | | |
| Arsenic | 8.2 / 70 | NA | NA | NA | NA | NA | NA | 1.5 | 1.5 | 0.88 | 1.8 | 1.4 | 2.1 | 2.1 | 1.9 |
| Cadmium | 1.2 / 9.6 | NA | NA | NA | NA | NA | NA | <0.59 | <0.60 | <0.61 | <0.59 | <0.58 | <0.60 | <0.60 | <0.60 |
| Nickel | 20.9 / 51.6 | 5.0 | 7.4 | 5.0 | 10.5 | 24.0 | 27.0 | 5.8 | 5.6 | 5.0 | 5.9 | 6.8 | 8.3 | 5.6 | 7.1 |
| Lead | 46.7 / 218 | 2.1 | 4.1 | 2.3 | 7.55 | 21.0 | 22.0 | 4.6 | 4.6 | 2.5 | 5.9 | 4.6 | 5.4 | 4.1 | 3.6 |
| Vanadium | 57* | 5.8 | 7.0 | 4.6 | 17.5 | 44.0 | 41.0 | 5.1 | 6.1 | 3.1 | 7.0 | 4.9 | 6.9 | 3.9 | 5.3 |
| Mercury | 0.15 / 0.71 | <0.0092 | <0.0013 | <0.0013 | 0.0135 | <0.0012 | <0.0014 | <0.019 | <0.019 | <0.019 | 0.020 | <0.019 | 0.030 | <0.019 | <0.020 |
| PAH - Low Level (mg/ dry kg) | | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | Not Available | NA | NA | NA | NA | NA | NA | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| 2-Methylnaphthalene | 0.07 / 0.67 | NA | NA | NA | NA | NA | NA | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Acenaphthene | 0.016 / 0.5 | NA | NA | NA | NA | NA | NA | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Acenaphthylene | 0.044 / 0.64 | NA | NA | NA | NA | NA | NA | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Anthracene | 0.0853 / 1.1 | 0.009 | 0.01 | 0.002 | 0.004 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Benzo[a]anthracene | 0.261 / 1.6 | 0.002 | 0.045 | 0.005 | 0.009 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Benzo[a]pyrene | 0.43 / 1.6 | <0.003 | 0.045 | 0.004 | 0.01 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | 0.016 | 0.012 | <0.0081 |
| Benzo[b]fluoranthene | 1.8* | <0.003 | 0.055 | 0.003 | 0.01 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | 0.010 | <0.0081 | <0.0081 |
| Benzo[g,h,i]perylene | 0.67* | <0.003 | 0.042 | 0.002 | 0.009 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Benzo[k]fluoranthene | 1.8* | <0.003 | 0.055 | 0.003 | 0.01 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Chrysene | 0.384 / 2.8 | 0.002 | 0.049 | 0.005 | 0.012 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | 0.010 | <0.0081 | <0.0081 |
| Dibenz[a,h]anthracene | 0.0634 / 0.26 | <0.003 | 0.014 | <0.003 | 0.003 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Fluoranthene | 0.6 / 5.1 | 0.006 | 0.088 | 0.01 | 0.019 | 0.022 | 0.017 | <0.0081 | 0.028 | <0.0083 | 0.016 | 0.013 | 0.023 | 0.018 | <0.0081 |
| Fluorene | 0.019 / 0.54 | 0.031 | 0.004 | 0.001 | 0.004 | 0.021 | 0.02 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Indeno[1,2,3-cd]pyrene | 0.6* | <0.003 | 0.077 | 0.002 | 0.006 | <0.024 | <0.031 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Naphthalene | 0.16 / 2.1 | 0.0115 | 0.007 | 0.001 | 0.016 | 0.035 | 0.025 | <0.0081 | <0.0080 | <0.0083 | <0.0080 | <0.0083 | <0.0081 | <0.0081 | <0.0081 |
| Phenanthrene | 0.24 / 1.5 | 0.086 | 0.031 | 0.007 | 0.017 | 0.055 | 0.057 | <0.0081 | 0.021 | <0.0083 | <0.0080 | <0.0083 | 0.025 | 0.014 | <0.0081 |
| Pyrene | 0.665 / 2.6 | 0.007 | 0.044 | 0.006 | 0.012 | 0.071 | <0.031 | <0.0081 | 0.015 | <0.0083 | <0.0080 | 0.010 | 0.018 | 0.019 | <0.0081 |

Notes:

SQIRT ERL / ERM = NOAA Screening Quick Reference Table Effects Range Low (ERL) / Effects Range Median (ERM) for marine sediment

* = NOAA SQIRT Apparent Effects Threshold (AET) - ERL / ERM not available

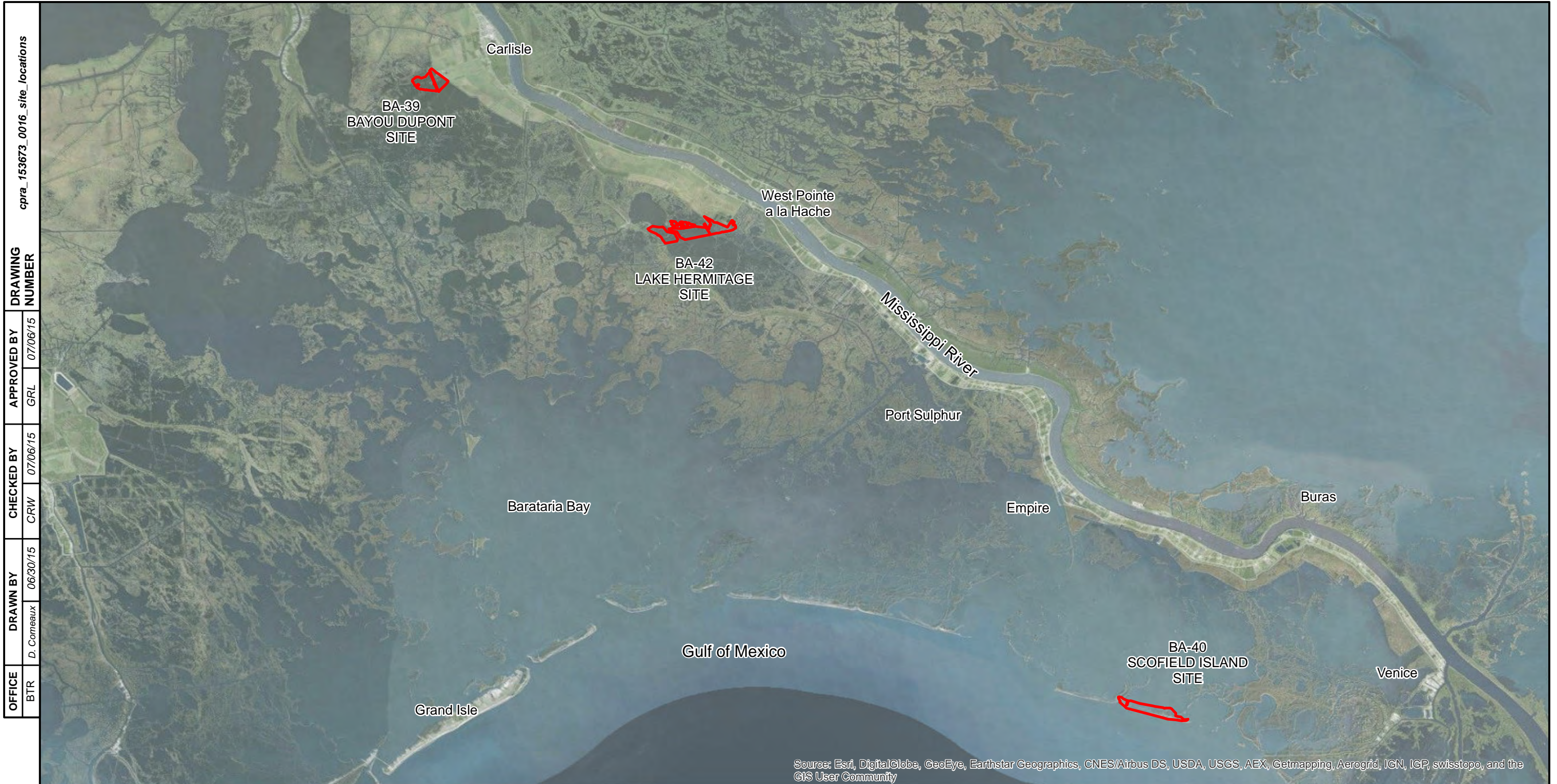
< = Concentration below indicated laboratory reporting limit

NA = Not Analyzed

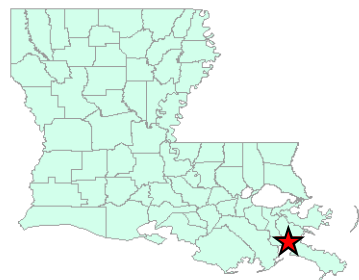
mg/dry kg = milligrams per dry kilogram (current wet weight results were converted to a dry weight basis using the average soil moisture content)

Result evaluation color key: <ERL or AET "Good" >ERL & <ERM "Intermediate" >ERM or AET "Poor"


Figures

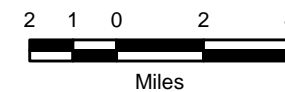
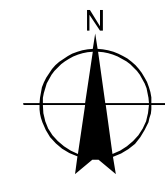


| | |
|---------------------------------|------------|
| OFFICE | BTR |
| DRAWN BY | D. Comeaux |
| CHECKED BY | CRW |
| APPROVED BY | GRL |
| DRAWING NUMBER | 07/06/15 |
| cpra_153673_0016_site_locations | |



Legend

 Boundary of Restoration Sites



COASTAL PROTECTION AND RESTORATION AUTHORITY

INVESTIGATION OF COAL AND PETROLEUM COKE OCCURRENCES IN RESTORATION PROJECTS UTILIZING MISSISSIPPI RIVER SEDIMENT

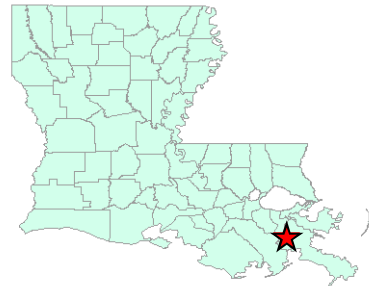
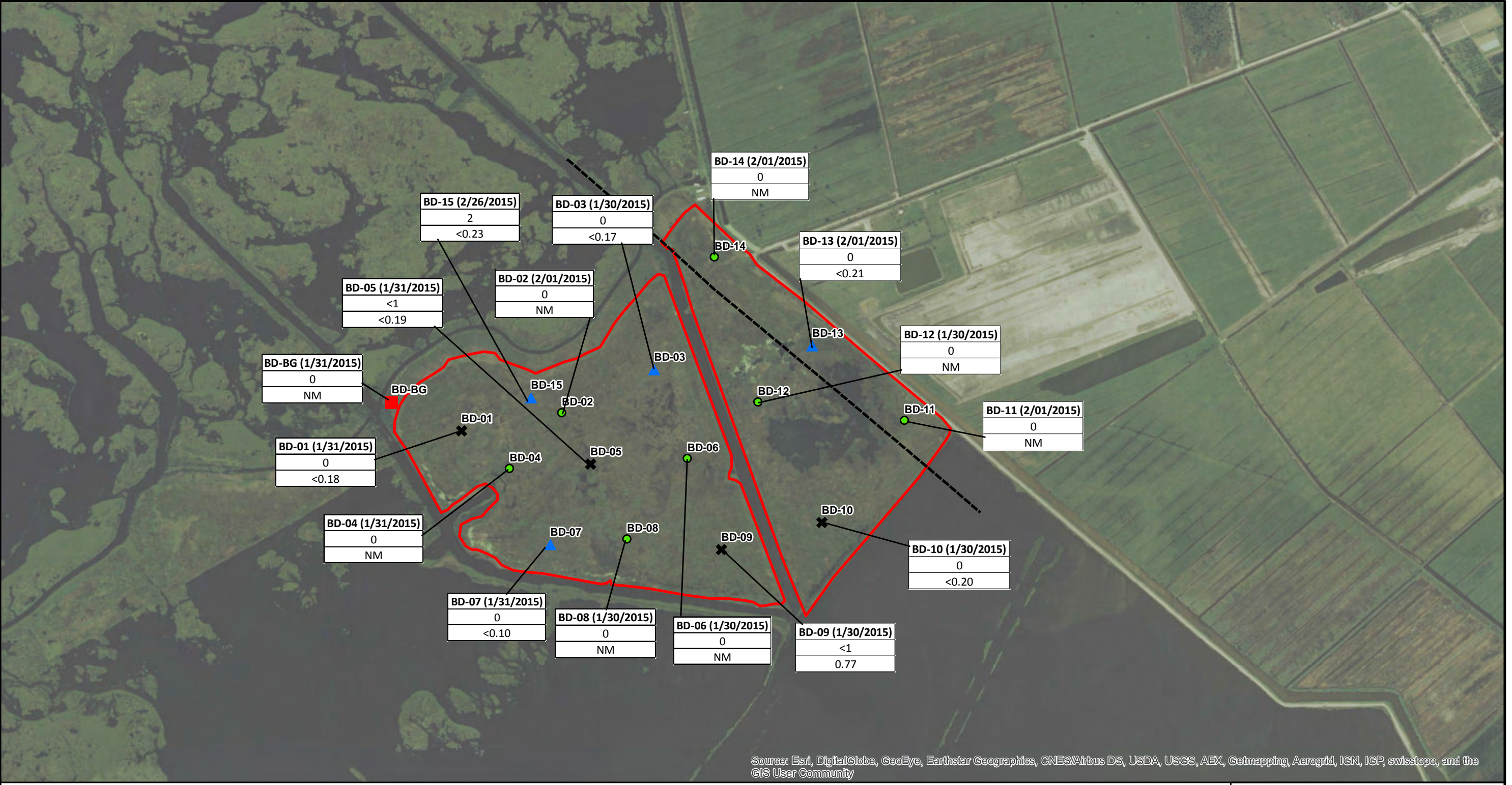
FIGURE NUMBER
1

CURRENT INVESTIGATION SITE LOCATIONS



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| | |
|-------------------------------|------------|
| OFFICE | BTR |
| DRAWN BY | D. Comeaux |
| CHECKED BY | CRW |
| APPROVED BY | GRL |
| DRAWING NUMBER | 07/06/15 |
| cpra_153673_0010_bayou_dupont | |

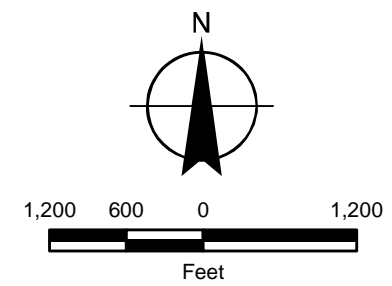


Legend

- Observation Location
- ▲ Observation & Analytical Sample Location
- ✕ Observation, Benthic & Analytical Sample Location
- Background Observation & Benthic Sample Location
- Shell Oil Pipeline
- Ⓢ Bayou Dupont Boundary

| Sample ID (Date Observed) |
|------------------------------------|
| Estimated Coal Surface Cover (%) |
| Measured Subsurface Coal Fines (%) |

NM = Not Measured



COASTAL PROTECTION AND RESTORATION AUTHORITY

INVESTIGATION OF COAL AND PETROLEUM COKE OCCURRENCES IN RESTORATION PROJECTS UTILIZING MISSISSIPPI RIVER SEDIMENT

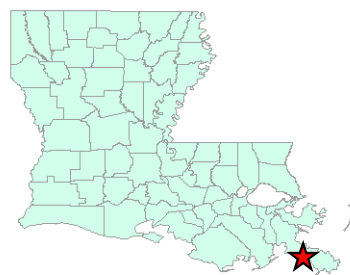
FIGURE NUMBER
2

**BA-39 - BAYOU DUPONT
MISSISSIPPI RIVER SEDIMENT
DELIVERY SYSTEM**



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| | | | | |
|--------|------------------------|-----------------|-----------------|----------------------------------|
| OFFICE | DRAWN BY | CHECKED BY | APPROVED BY | DRAWING NUMBER |
| BTR | D. Comeaux 04/29/15 | CRW 07/06/15 | GRL 07/06/15 | cpra_153673_0012_scofield_island |

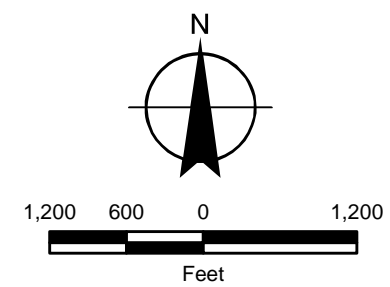


Legend

- Observation Location
- ▲ Observation & Analytical Sample Location
- ✕ Observation, Benthic & Analytical Sample Location
- Background Observation & Benthic Sample Location
- Ⓢ Scofield Island Boundary

| Sample ID (Date Observed) |
|------------------------------------|
| Estimated Coal Surface Cover (%) |
| Measured Subsurface Coal Fines (%) |

NM = Not Measured



COASTAL PROTECTION AND RESTORATION AUTHORITY

INVESTIGATION OF COAL AND PETROLEUM COKE OCCURRENCES IN RESTORATION PROJECTS UTILIZING MISSISSIPPI RIVER SEDIMENT

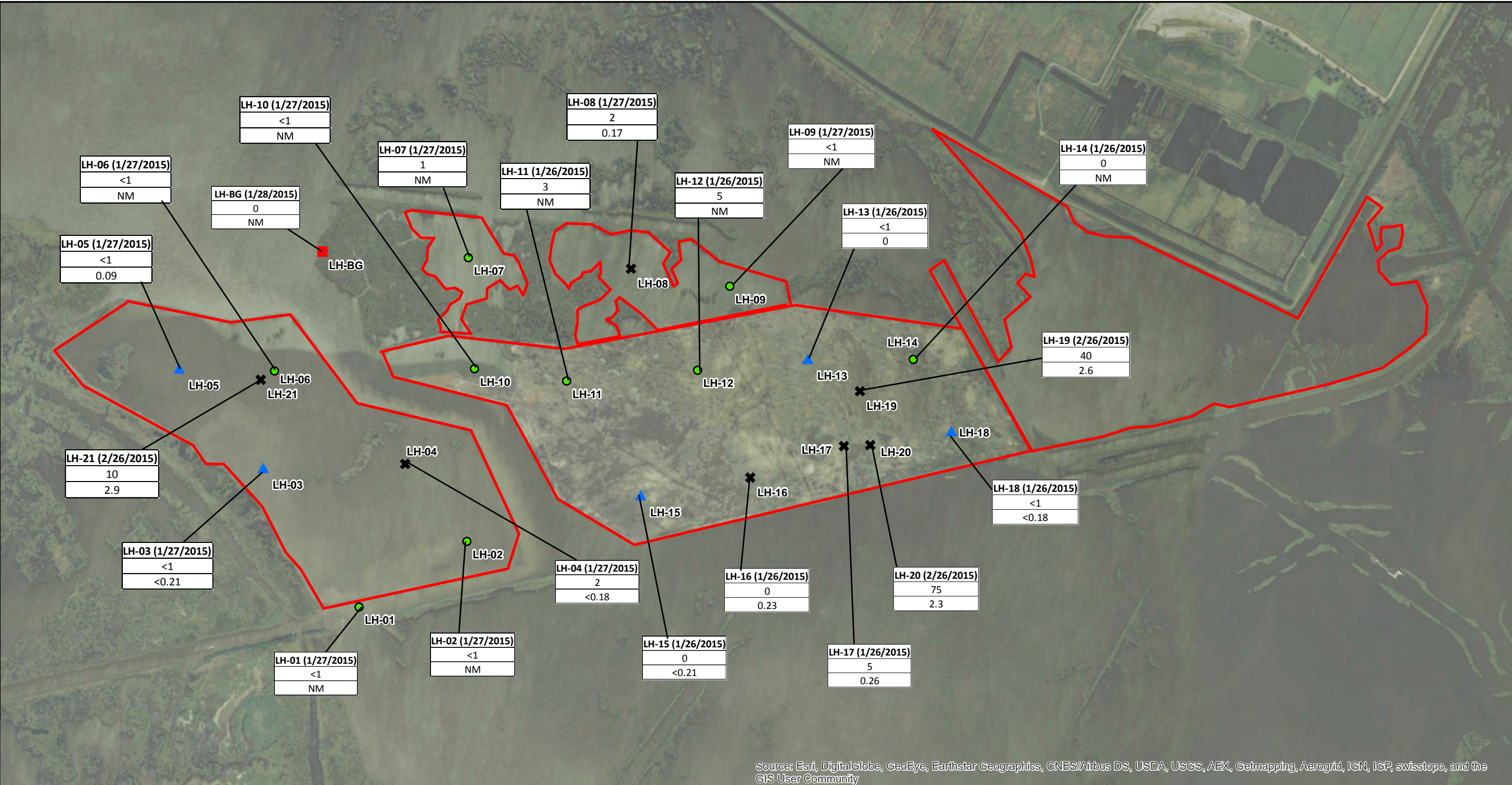
FIGURE NUMBER
3

BA-40 - SCOFIELD ISLAND RESTORATION PROJECT

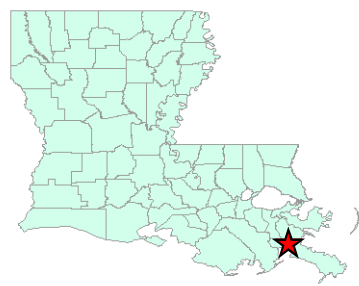


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OFFICE: BTR
 DRAWN BY: D. Comeaux (04/29/15)
 CHECKED BY: CRW (07/06/15)
 APPROVED BY: GRL (07/06/15)
 DRAWING NUMBER: cpra_153673_0014_lake_hermitage



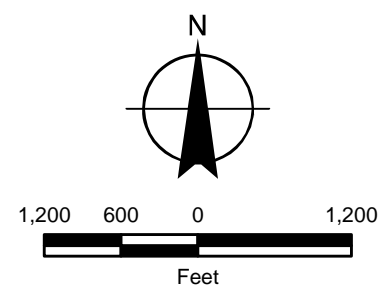
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend**
- Observation Location
 - ▲ Observation & Analytical Sample Location
 - ✕ Observation, Benthic & Analytical Sample Location
 - Background Observation & Benthic Sample Location
 - ⬢ Lake Hermitage Boundary

| Sample ID (Date Observed) |
|------------------------------------|
| Estimated Coal Surface Cover (%) |
| Measured Subsurface Coal Fines (%) |

NM = Not Measured



COASTAL PROTECTION AND RESTORATION AUTHORITY

INVESTIGATION OF COAL AND PETROLEUM COKE OCCURRENCES IN RESTORATION PROJECTS UTILIZING MISSISSIPPI RIVER SEDIMENT

FIGURE NUMBER: **4**

BA-42 - LAKE HERMITAGE MARSH CREATION PROJECT

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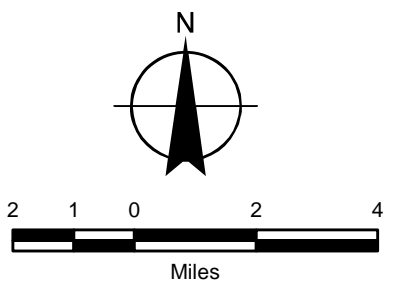
| | | | | |
|--------|------------|------------|-------------|-------------------------------|
| OFFICE | DRAWN BY | CHECKED BY | APPROVED BY | DRAWING NUMBER |
| BTR | D. Comeaux | CRW | GRL | cpra_153673_0008_bayou_dupont |
| | 01/13/15 | 07/06/15 | 07/06/15 | |



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend
 ● Approximate (Composite) Sample Location



COASTAL PROTECTION AND RESTORATION AUTHORITY

INVESTIGATION OF COAL AND PETROLEUM COKE OCCURRENCES IN RESTORATION PROJECTS UTILIZING MISSISSIPPI RIVER SEDIMENT

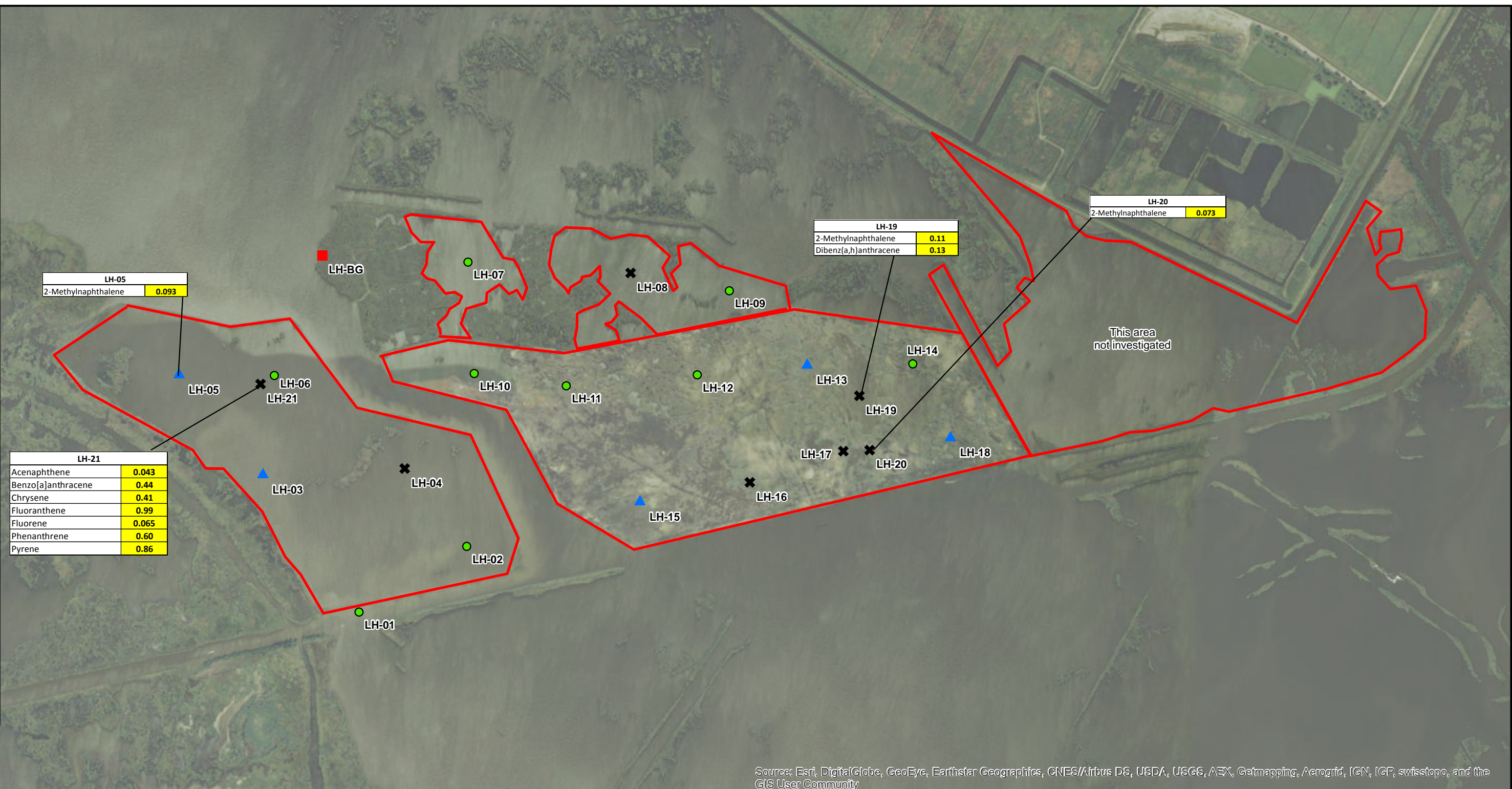
FIGURE NUMBER
5

BAYOU DUPONT PREVIOUS INVESTIGATION SAMPLE LOCATIONS

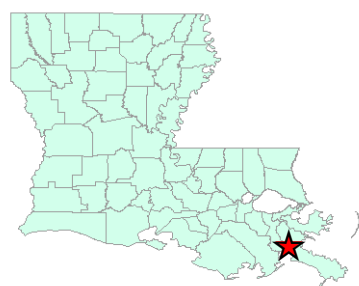


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 APPROVED BY: GRL 07/06/15
 DRAWING NUMBER: cpra_153673_0017_lake_hermitage_sur_soil

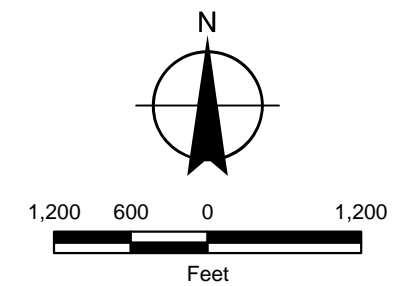


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend**
- Observation Location
 - ▲ Observation & Analytical Sample Location
 - ✕ Observation, Benthic & Analytical Sample Location
 - Background Observation & Benthic Sample Location
 - 🔴 Lake Hermitage Boundary

| Sample ID | |
|---|--------|
| Parameter | Result |
| Units in mg/Kg | |
| Results highlighted in yellow are greater than the SQUIRT Effects Range Low (ERL) but less than the Effects Range Medium (ERM) criteria | |



COASTAL PROTECTION AND RESTORATION AUTHORITY

INVESTIGATION OF COAL AND PETROLEUM COKE OCCURRENCES IN RESTORATION PROJECTS UTILIZING MISSISSIPPI RIVER SEDIMENT

FIGURE NUMBER: 6

LAKE HERMITAGE SITE SURFACE SOIL ANALYTICAL RESULTS

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NOTE: Sample LH-21 was reanalyzed a second time approximately one month after initial analysis.

Figure 7

Estimated Coal/Pet Coke Surface Cover

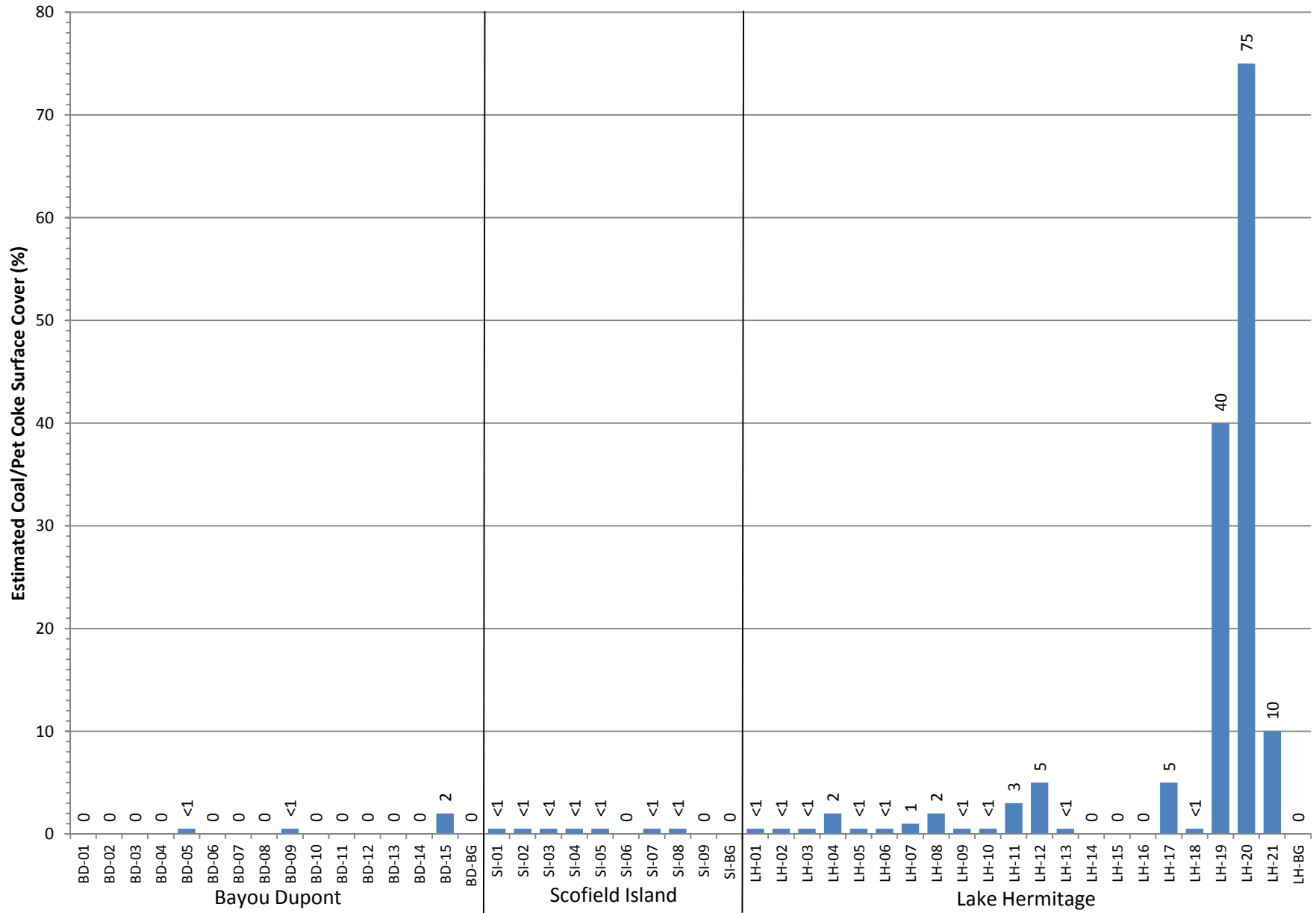


Figure 8

Measured Subsurface Coal/Pet Coke

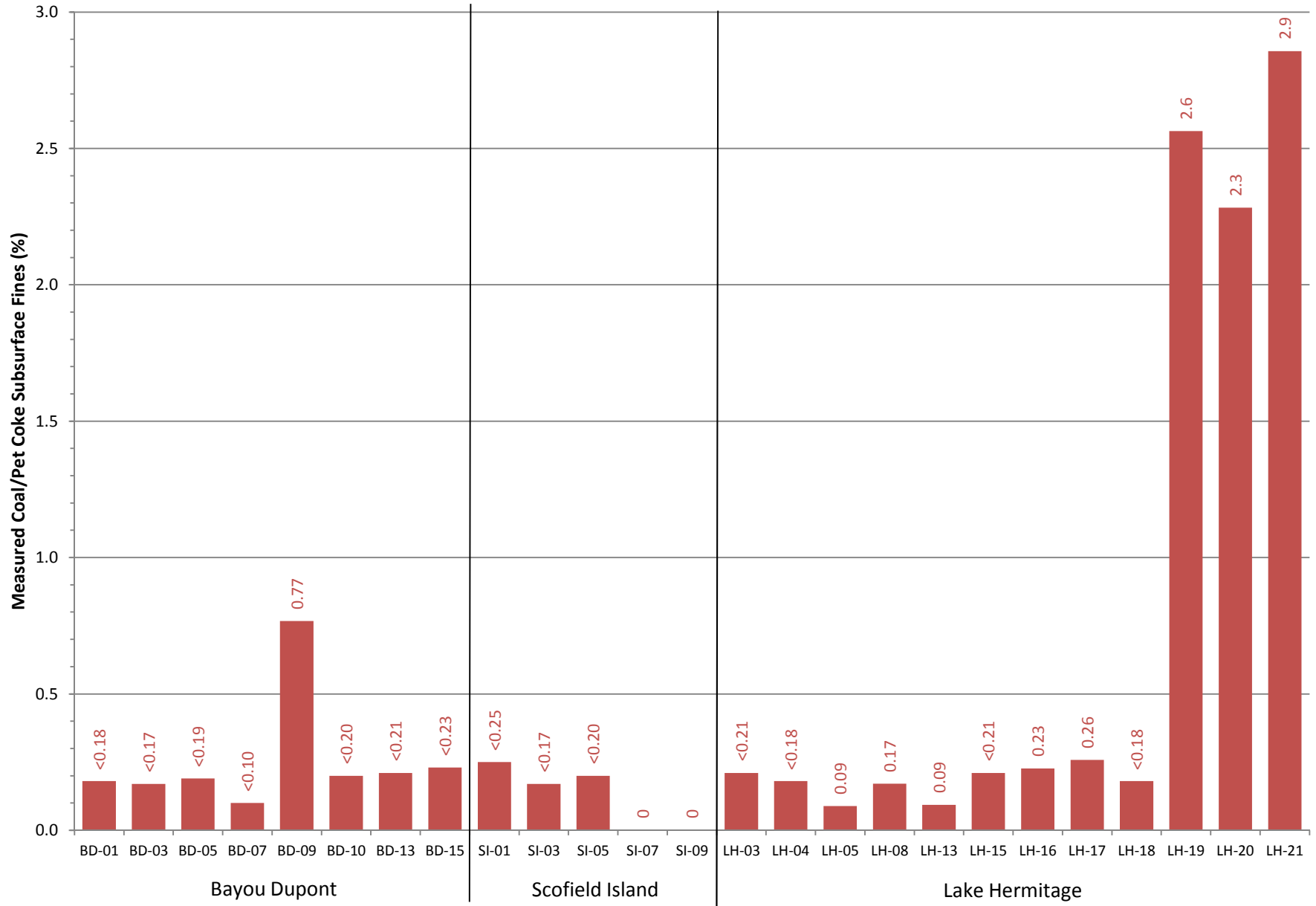


Figure 9

Grain Size

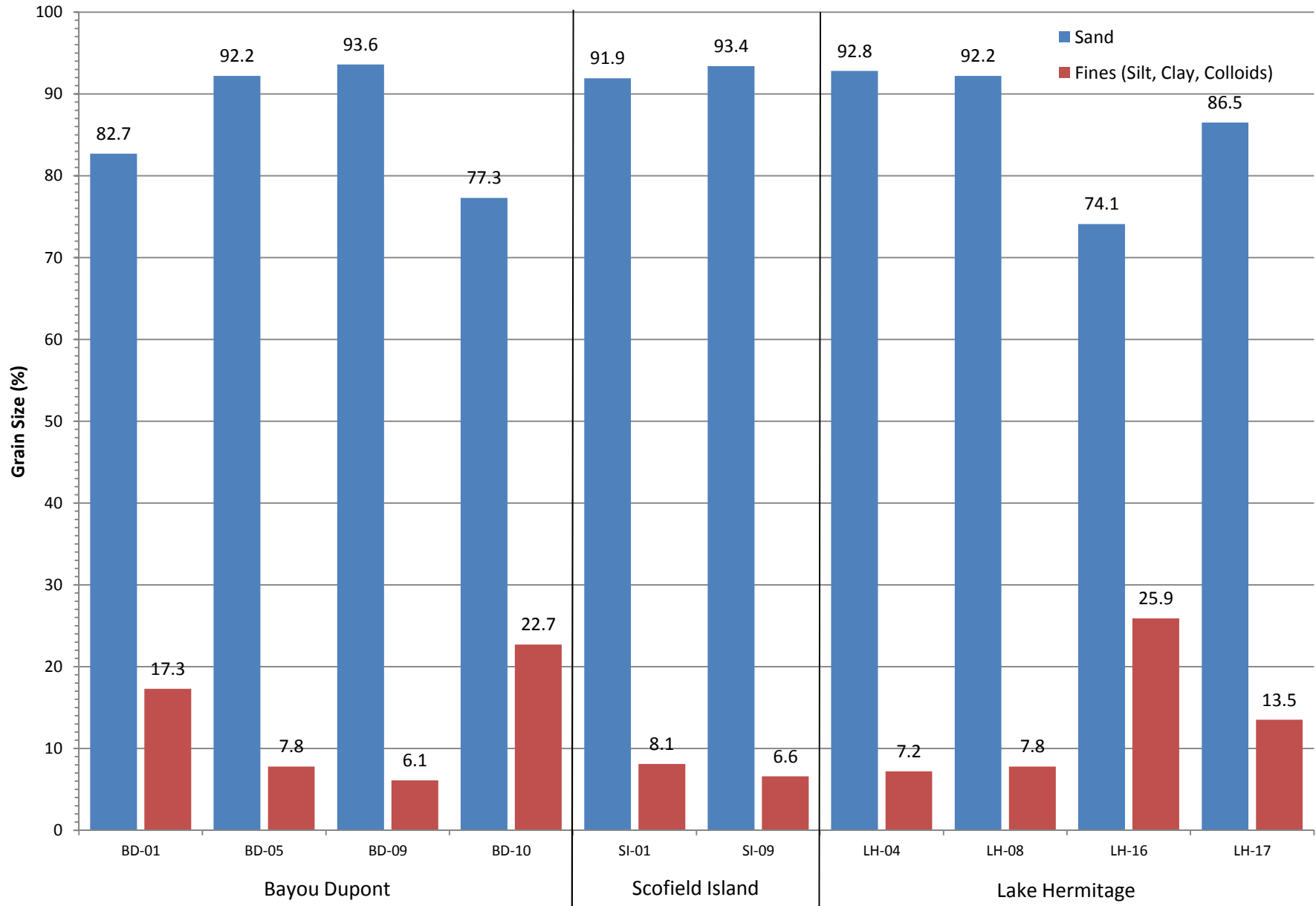


Figure 10

Total Metals Concentrations

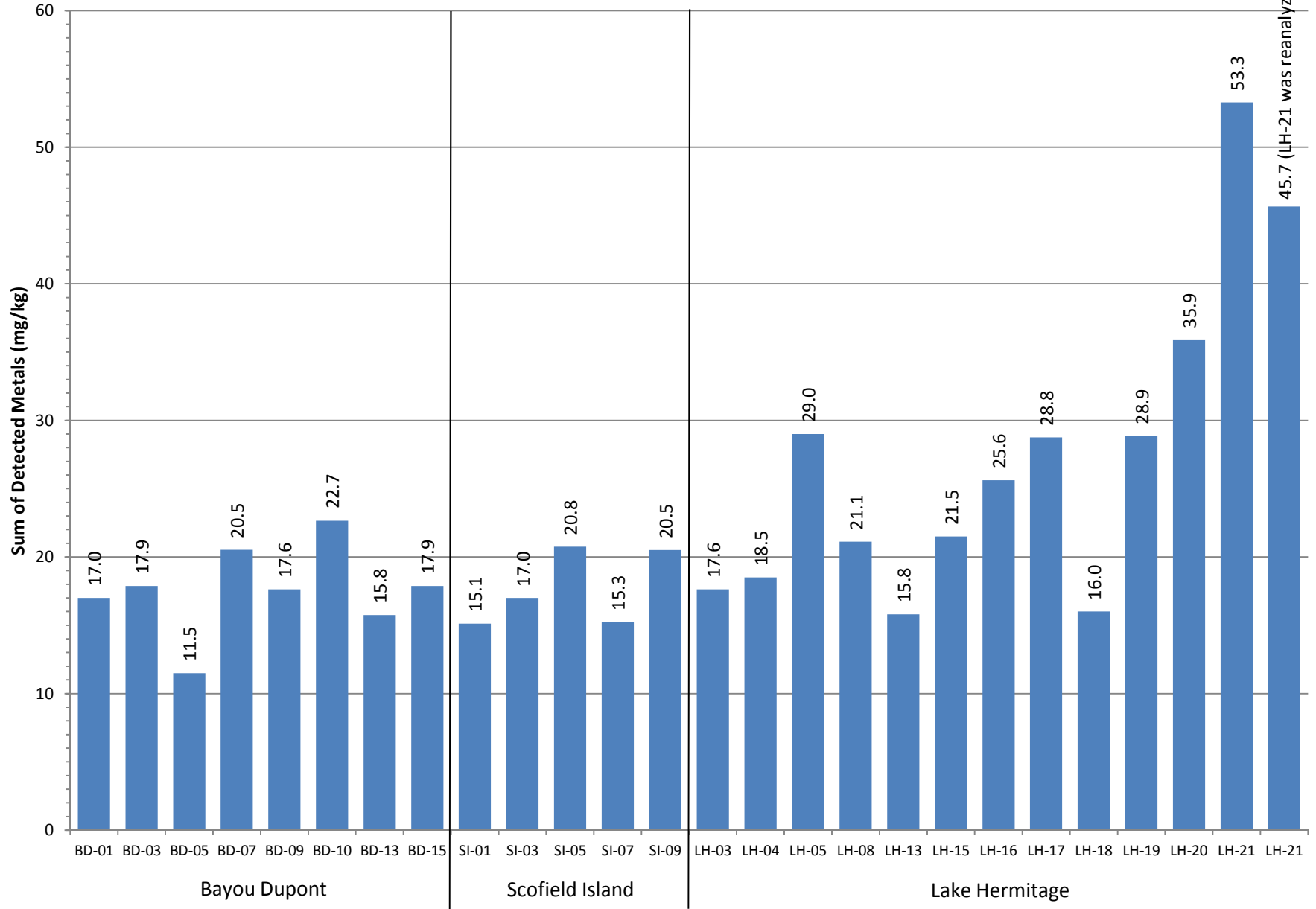


Figure 11

Total PAH Concentrations

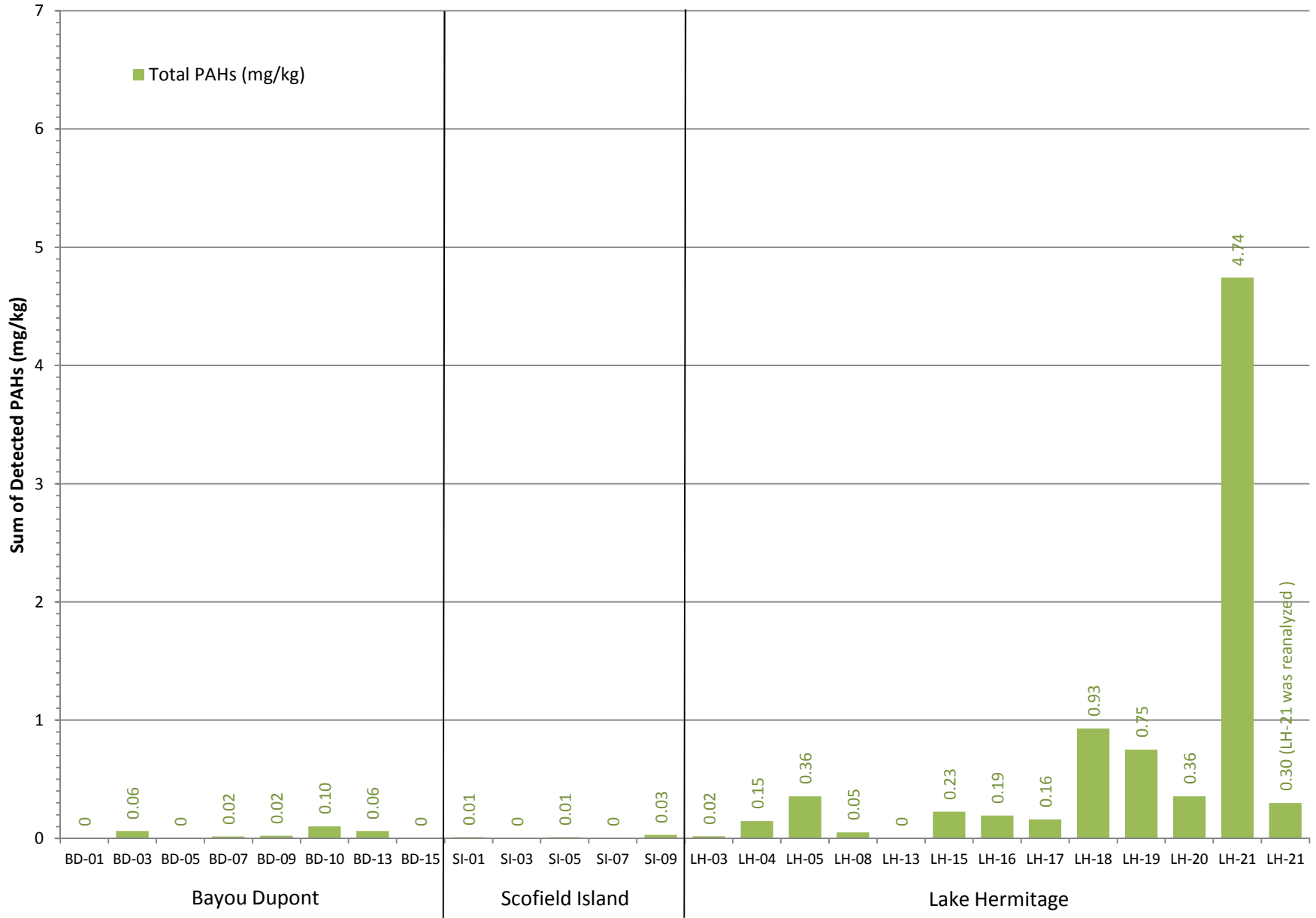


Figure 12

Surface and Subsurface Extent of Coal/Pet Coke

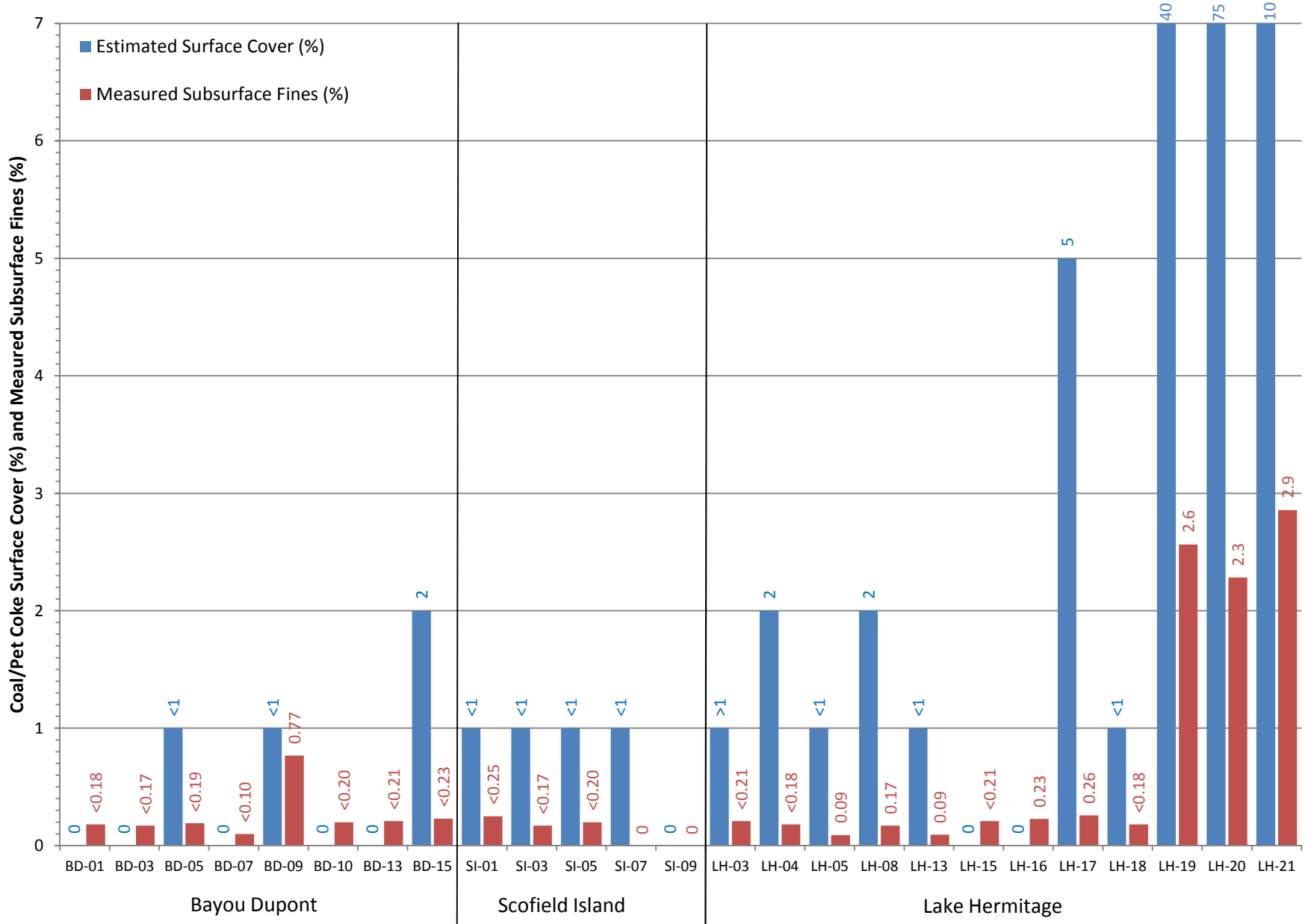
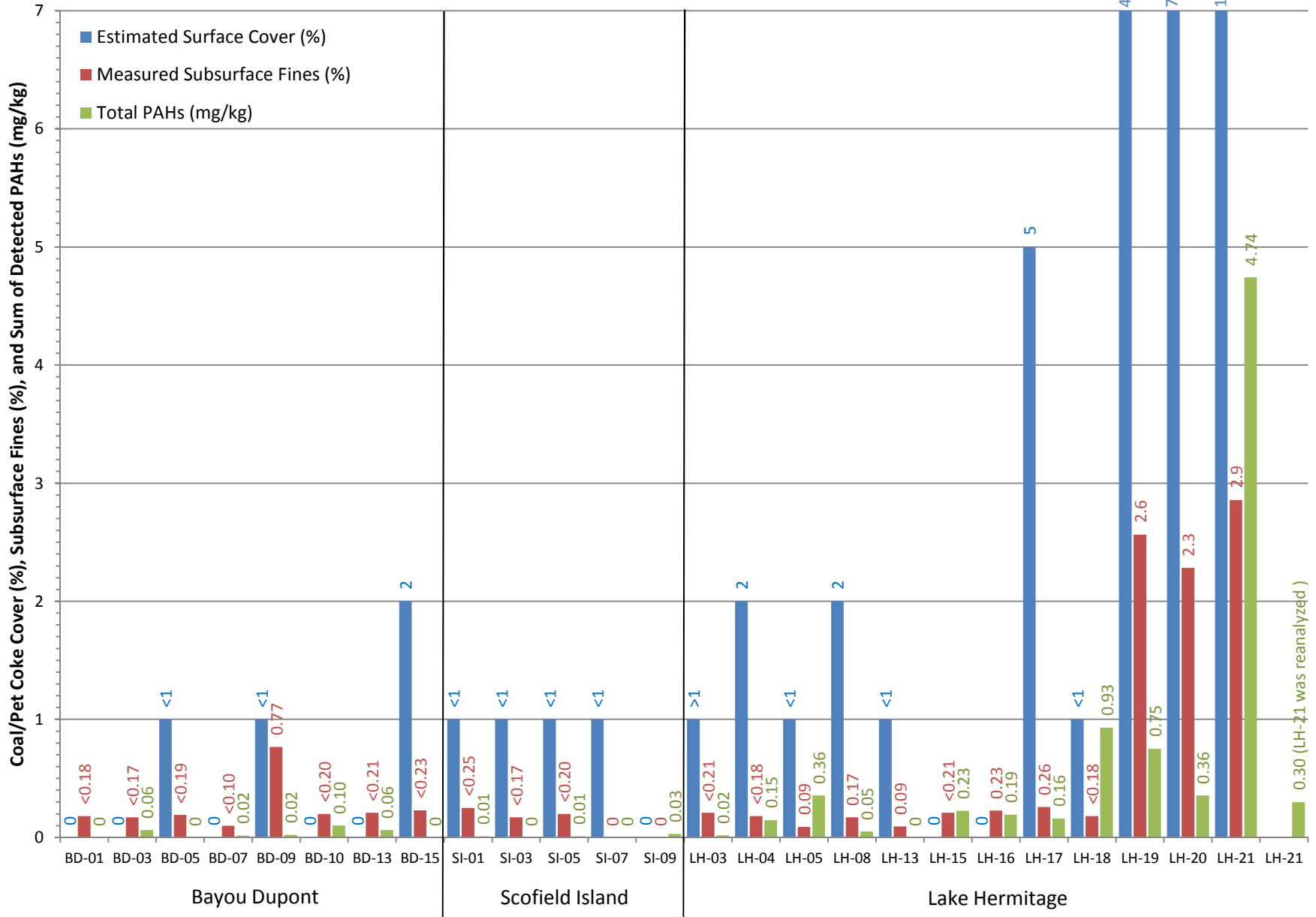


Figure 13

Extent of Coal/Pet Coke and Total PAH Concentrations



Appendix A
Site Photo Record



Photographic Record

Client: CPRA
Project Site: Bayou Dupont Mississippi River
Sediment Delivery System

Photographer: Cody Bruhl
Project No.: 153673



Site Location: BD-01

Date: 1/31/15



Site Location: BD-02

Date: 2/1/15



Site Location: BD-03

Date: 1/30/15

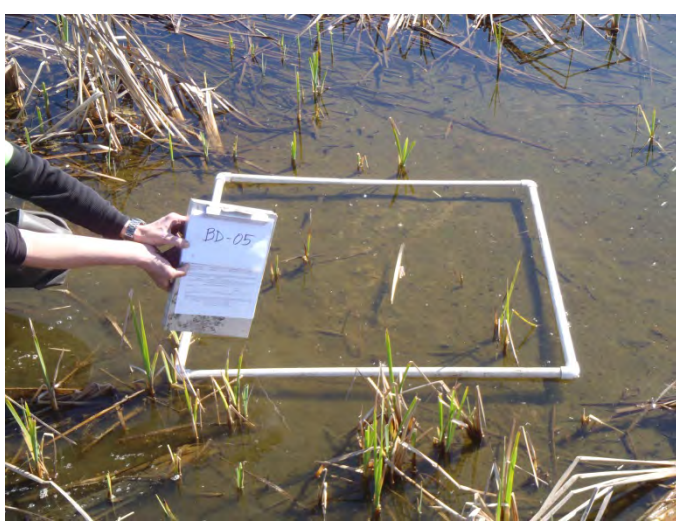


Site Location: BD-04

Date: 1/31/15

Client: CPRA
Project Site: Bayou Dupont Mississippi River
 Sediment Delivery System

Photographer: Cody Bruhl
Project No.: 153673



Site Location: BD-05

Date: 1/31/15



Site Location: BD-06

Date: 1/30/15



Site Location: BD-07

Date: 1/31/15



Site Location: BD-08

Date: 1/30/15

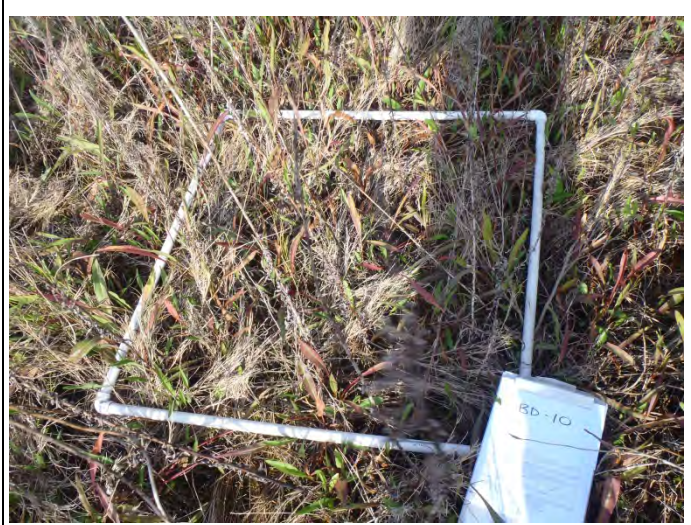
Client: CPRA
Project Site: Bayou Dupont Mississippi River
 Sediment Delivery System

Photographer: Cody Bruhl
Project No.: 153673



Site Location: BD-09

Date: 1/30/15



Site Location: BD-10

Date: 1/30/15



Site Location: BD-11

Date: 2/1/15



Site Location: BD-12

Date: 1/30/15



Photographic Record

Client: CPRA
Project Site: Bayou Dupont Mississippi River
Sediment Delivery System

Photographer: Cody Bruhl
Project No.: 153673



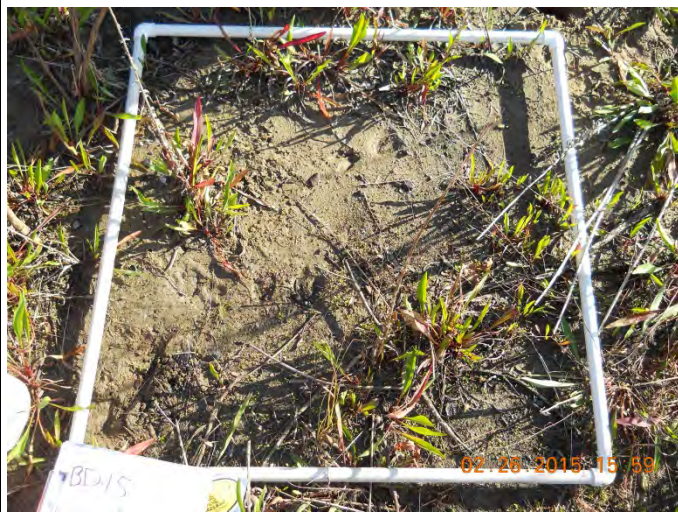
Site Location: BD-13

Date: 2/1/15



Site Location: BD-14

Date: 2/1/15



Site Location: BD-15

Date: 2/26/15



Site Location: BD-BG

Date: 1/31/15

Client: CPRA
Project Site: Scofield Island
Restoration Project

Photographer: Kevin Simoneaux
Project No.: 153673



Site Location: SI-01

Date: 1/28/15



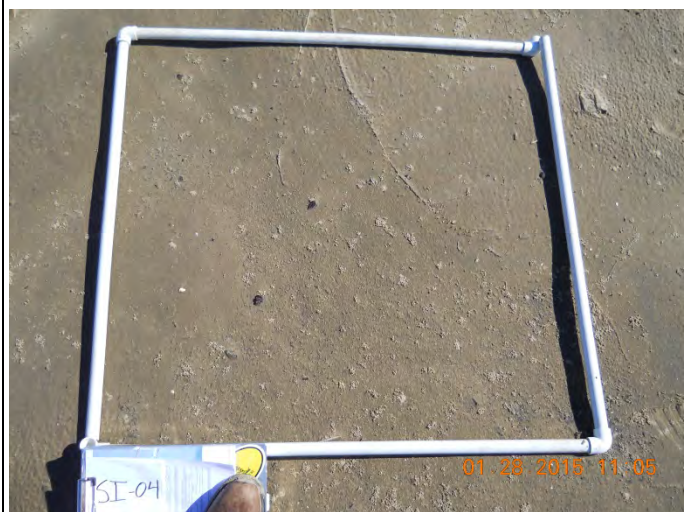
Site Location: SI-02

Date: 1/28/15



Site Location: SI-03

Date: 1/28/15



Site Location: SI-04

Date: 1/28/15



Photographic Record

Client: CPRA
Project Site: Scofield Island
Restoration Project

Photographer: Kevin Simoneaux
Project No.: 153673



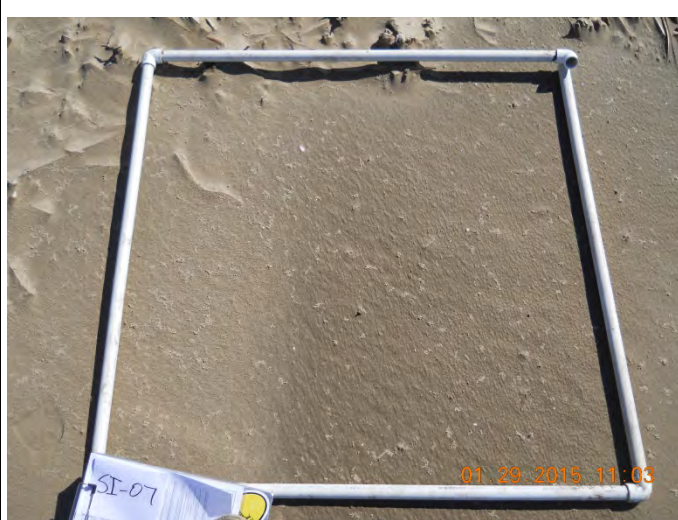
Site Location: SI-05

Date: 1/29/15



Site Location: SI-06

Date: 1/29/15



Site Location: SI-07

Date: 1/29/15



Site Location: SI-08

Date: 1/29/15



Photographic Record

Client: CPRA
Project Site: Scofield Island
Restoration Project

Photographer: Kevin Simoneaux
Project No.: 153673



Site Location: SI-09

Date: 1/29/15



Site Location: SI-BG

Date: 1/29/15

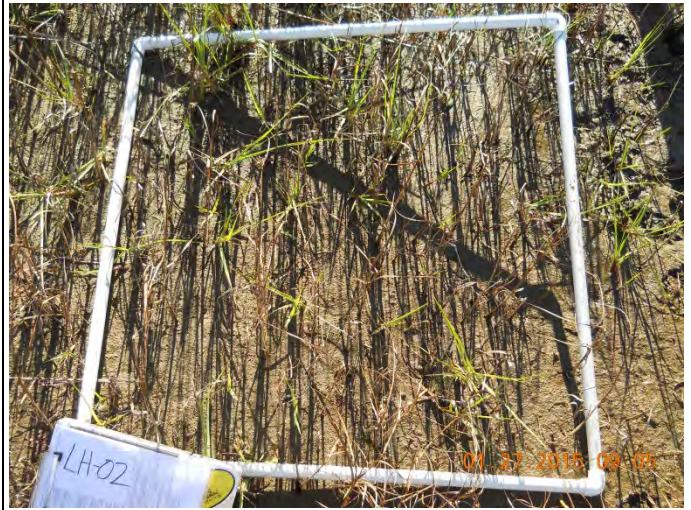
Client: CPRA
Project Site: Lake Hermitage
Marsh Creation Project

Photographer: Kevin Simoneaux
Project No. 153673



Site Location: LH-01

Date: 1/27/15



Site Location: LH-02

Date: 1/27/15



Site Location: LH-03

Date: 1/27/15



Site Location: LH-04

Date: 1/27/15

Client: CPRA
Project Site: Lake Hermitage
Marsh Creation Project

Photographer: Kevin Simoneaux
Project No. 153673



Site Location: LH-05

Date: 1/27/15



Site Location: LH-06

Date: 1/27/15



Site Location: LH-07

Date: 1/28/15



Site Location: LH-08

Date: 1/27/15

Client: CPRA
Project Site: Lake Hermitage
 Marsh Creation Project

Photographer: Kevin Simoneaux
Project No. 153673



Site Location: LH-09

Date: 1/27/15



Site Location: LH-10

Date: 1/27/15



Site Location: LH-11

Date: 1/26/15

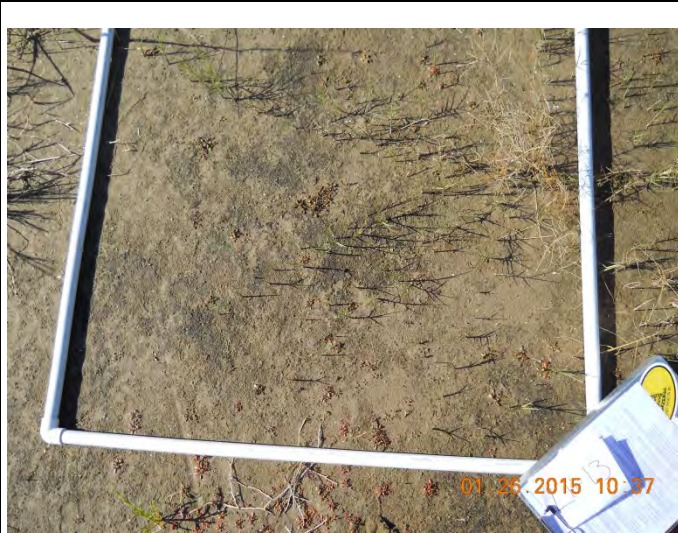


Site Location: LH-12

Date: 1/26/15

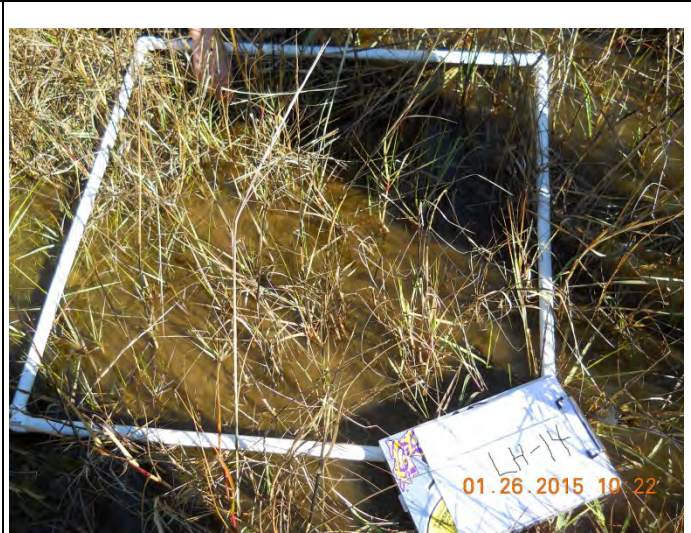
Client: CPRA
Project Site: Lake Hermitage
 Marsh Creation Project

Photographer: Kevin Simoneaux
Project No. 153673



Site Location: LH-13

Date: 1/26/15



Site Location: LH-14

Date: 1/26/15



Site Location: LH-15

Date: 1/26/15



Site Location: LH-16

Date: 1/26/15

Client: CPRA
Project Site: Lake Hermitage
 Marsh Creation Project

Photographer: Kevin Simoneaux
Project No. 153673



Site Location: LH-17

Date: 1/26/15



Site Location: LH-18

Date: 1/26/15



Site Location: LH-19

Date: 2/26/15



Site Location: LH-20

Date: 2/26/15



Photographic Record

Client: CPRA
Project Site: Lake Hermitage
Marsh Creation Project

Photographer: Kevin Simoneaux
Project No. 153673



Site Location: LH-21

Date: 2/26/15



Site Location: LH-BG

Date: 1/28/15

Appendix B
Field Documentation



Field Activity Daily Log

| | | | |
|-------|--------|----|----|
| DATE | 1 | 26 | 15 |
| NO. | | | |
| SHEET | / OF / | | |

Project Name: CPR Project No. 153673

Field Activity Subject: Coal + Pet Coke Investigation

Description of Daily Activities and Events:

0630 - Meet with team in Gretna / Depart for marina
 0730 - Arrive at Myrtle Grove Marina / meet with Boat operators
 0800 - Depart for Launch
 0830 - On the water / Depart for Lake Hermitage
 0850 - Arrive at site / begin investigation (see data sheets)
 0955 - Sample LH-18(0-6)
 1045 - Sample LH-13(0-6)
 1120 - Sample LH-17(0-6)
 1240 - Sample LH-16(0-6)
 1355 - Sample LH-15(0-6)
 1425 - Leave site
 1440 - Return to Launch / off load samples + equipment
 1530 - Depart launch
 1630 - Arrive at hotel

~~11/26~~

VISITORS ON SITE:

CHANGES FROM PLANS AND SPECIFICATIONS AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:

WEATHER CONDITIONS:
 Sunny + clear, windy
 warming mid-upper 50s

IMPORTANT TELEPHONE CALLS:

CB&I PERSONNEL ON SITE: K. Simoneaux, G. Pittman, C. Bruhl, C. Paul, M. Scriver, L. Davis

SIGNATURE: [Signature]

DATE: 11/26/15



Field Activity Daily Log

| | | | |
|-------|---|----|----|
| DATE | 1 | 27 | 15 |
| NO. | | | |
| SHEET | 1 | OF | 1 |

Project Name: CPRA Project No. 153673

Field Activity Subject: Coal / Pet Coke Investigation

Description of Daily Activities and Events:

0630 - Depart hotel for launch
 0729 - Arrive at Launch / load up equipment + supplies
 0745 - Tailgate safety meeting + JSA review
 0855 - Depart launch for site
 0815 - Arrive at Lake Hermitage / begin investigation (see data sheets)
 0830 - Sample LH-04(0-6)
 1030 - Sample LH-03(0-6)
 1130 - Sample LH-05(0-6)
 1315 - Sample LH-08(0-6)
 1400 - Unable to get to LH-07, will return later from alternate route / Leave for launch
 1415 - Return to launch / offload supplies + equipment.
 1455 - Depart launch for hotel
 1600 - Return to hotel

~~11/27~~

VISITORS ON SITE: Mike Crossen

CHANGES FROM PLANS AND SPECIFICATIONS AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:

WEATHER CONDITIONS: Sunny + clear, warming, mid-upper 50s, windy

IMPORTANT TELEPHONE CALLS:

CB&I PERSONNEL ON SITE: K. Simoneaux, C. Paul, L. Davis, M. Sevier

SIGNATURE: [Signature] DATE: 1/27/16



Field Activity Daily Log

| | | | |
|-------|---|----|----|
| DATE | 1 | 28 | 15 |
| NO. | | | |
| SHEET | 1 | OF | 1 |

Project Name: CPRA Project No. 153673

Field Activity Subject: Coal/Pet Coke Investigation

Description of Daily Activities and Events:

- 0605 - Depart hotel for launch
- 0700 - Arrive at Myrtle Grove marina / Meet up with M. Crossen to swap out boats
- 0730 - Depart for boat launch at Joshua's Marina
- 0815 - Arrive at Launch / tailgate safety meeting + JSA review
- 0830 - Depart for site
- 0920 - Arrive at Skaffeld Island / begin investigation (see data sheets)
- 0940 - Sample SI-01 (0-6) / collect DUP-1 / submit for SPLP
- 1030 - Sample SI-03 (0-6)
- 1125 - Depart site for launch - unsafe getting on/off boat due to increasing swells
- 1155 - Return to Joshua's Launch / head to Myrtle Grove
- 1245 - Swap boats at Myrtle Grove marina
- 1330 - Arrive at launch / Depart for Lake Hermitage
- 1345 - Arrive at Lake Hermitage / continue investigation
- 1410 - Sample LH-B6 (0-6) - Benthic only *
- 1500 - Complete investigation at Hermitage / Leave site
- 1515 - Arrive back at launch
- 1540 - Leave site launch for hotel
- 1630 - Return to hotel

~~11/28~~

VISITORS ON SITE: Mike Crossman

CHANGES FROM PLANS AND SPECIFICATIONS AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:

WEATHER CONDITIONS: Sunny + clear, warm, windy

IMPORTANT TELEPHONE CALLS:

CB&I PERSONNEL ON SITE: K. Simons, C. Paul

SIGNATURE: _____ DATE: 1/28/15



Field Activity Daily Log

| | | | |
|-------|---|----|----|
| DATE | 1 | 29 | 15 |
| NO. | | | |
| SHEET | 1 | OF | 1 |

Project Name: CPRA Project No. 153673

Field Activity Subject: Coal / Pet Coke Investigation

Description of Daily Activities and Events:

0700 - Depart hotel for site
 0825 - Arrive at Joshua's Marina / meet up with boat operator / Tailgate safety meeting
 0900 - Launch boat for Skofield Island
 0950 - Arrive at Skofield Island / Continue investigation
 1025 - Sample SI-05(0-6)
 1105 - Sample SI-07(0-6) / collect DVP-2
 1200 - Sample SI-09(0-6)
 1225 - Sample SI-BG(0-6) * Benthic only
 1355 - Complete investigation at Skofield. / Depart site for lunch
 1415 - Off the water, return to launch
 1515 - Leave launch for hotel
 1645 - Return to hotel

1/29

| | |
|---|--|
| VISITORS ON SITE: <u>Mike Crossen</u> <u>Ryan Clement</u> | CHANGES FROM PLANS AND SPECIFICATIONS AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS: <hr/> |
| WEATHER CONDITIONS: <u>Sunny + clear</u> <u>warm, windy</u> | IMPORTANT TELEPHONE CALLS: <hr/> |
| CB&I PERSONNEL ON SITE: <u>K. Simonian</u> , <u>C. Paul</u> | |
| SIGNATURE: <u>[Signature]</u> | DATE: <u>1/29/15</u> |



Field Activity Daily Log

| | | | |
|-------|---|----|----|
| DATE | 1 | 30 | 15 |
| NO. | | | |
| SHEET | 1 | OF | 1 |

Project Name: CORA COAL/COKE STUDY Project No. 153673

Field Activity Subject: COAL/PET COKE STUDY

Description of Daily Activities and Events:

1/30/15

6:30 - LEFT HOTEL
 7:20 - ARRIVE @ MARINA
 8:15 - LEFT MARINA
 8:45 - ARRIVE @ jobsite
 9:00 - ARRIVE @ BD-10; sample taken
 9:45 - ARRIVE @ BD-06; observation only; photo labeled BD-10 by mistake
 10:25 - ARRIVE @ BD-05; sample collected
 11:20 - ARRIVE @ BD-08; OBSERVATION ONLY
 11:45-12:30 - ATTEMPTED ACCESS TO BD-07 & BD-04. AREAS IMPASSIBLE BY FOOT
 1:05 - ARRIVE @ BD-03; sample taken
 2:05 - ARRIVE @ BD-12; observation only
 3:30 - ARRIVE @ MYRTLE GROVE MARINA
 3:30-4:10 LABELED & packaged samples
 4:20 - purchased ice for samples
 4:53 - ARRIVE @ HOTEL
 5:00 - conference call

[Signature]
1-30-15

| | |
|---|---|
| VISITORS ON SITE: <i>[Signature]</i> | CHANGES FROM PLANS AND SPECIFICATIONS AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS: <i>[Signature]</i> |
| WEATHER CONDITIONS: partly cloudy, windy 50° | IMPORTANT TELEPHONE CALLS: <i>[Signature]</i> |
| CB&I PERSONNEL ON SITE: Chris Paul, CODY BRANK, GREGORY PUTTMAN | SIGNATURE: <i>[Signature]</i> DATE: 1-30-15 |



Field Activity Daily Log

| | | | |
|-------|---|----|----|
| DATE | 1 | 31 | 15 |
| NO. | | | |
| SHEET | 1 | OF | 7 |

Project Name: MARSH COAL/COKE STUDY Project No. _____

Field Activity Subject: _____

Description of Daily Activities and Events:

1/31/15

- 7:30 - DEPART HOLIDAY INN GREENA
- 8:30 - ARRIVE @ MYRTLE GROVE MARINA
- 9:00 - DEPART AIRPORT
- 9:30 - ARRIVE @ BD-04 - OBSERVATION ONLY
- 10:10 - ARRIVE @ BD-07 - sample taken
- 11:00 - ARRIVE @ BD-05 - sample taken
- 12:30 - ARRIVE @ BD-BC - benthic taken
- 1:15 - ARRIVE @ MYRTLE GROVE MARINA
- 2:00 - ARRIVE @ BD-01 - sample taken
- 2:30 - SCOUTED ACCESS to ~~the~~ remaining sites
- 3:00 - ICED samples
- 3:30 - ARRIVE @ HOTEL

[Signature]
1-31-15

VISITORS ON SITE:
[Signature]

CHANGES FROM PLANS AND SPECIFICATIONS AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
[Signature]

WEATHER CONDITIONS:
SUNNY 40-50°

IMPORTANT TELEPHONE CALLS:
[Signature]

CB&I PERSONNEL ON SITE: Chris Paul, Cody Branch, GARDIN PITTMAN

SIGNATURE: *[Signature]*

DATE: 1-31-15



Field Activity Daily Log

| | | | |
|-------|---|----|----|
| DATE | 2 | 26 | 15 |
| NO. | | | |
| SHEET | / | OF | / |

Project Name: CPRA Project No. 153673

Field Activity Subject: Coal + Pest Coke Investigation

Description of Daily Activities and Events:

0500 - Arrive at office to load up supplies + equipment
 0540 - Leave B.R. office for site / heavy traffic due to accident on I-10.
 0830 - Arrive at Launch / Meet up with Mike Crossen of KBR
 0840 - Tailgate safety meeting + JSA review
 0850 - Leave Launch for site
 0910 - Arrive at Lake Hermitage and begin additional investigation
 1050 - Sample LH-19 (0-6)
 1120 - Sample LH-20 (0-6)
 1315 - Sample LH-21 (0-6)
 1345 - Return to boat, leave site for launch
 1400 - Return to Launch / Park samples + equipment
 1445 - Arrive at Bayou Dupont / begin additional investigation
 1600 - Sample BD-15 (0-6)
 1630 - Leave site
 1900 - Return to B.R. office

~~_____~~
 2/26

| | |
|--|--|
| VISITORS ON SITE: <u>Mike Crossen - KBR</u> | CHANGES FROM PLANS AND SPECIFICATIONS AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS: _____ |
| WEATHER CONDITIONS: <u>cold, windy, cloudy</u> | IMPORTANT TELEPHONE CALLS: _____ |
| CB&I PERSONNEL ON SITE: <u>K. Simoneaux, A. Smith, C. Paul, L. Davis</u> SIGNATURE: <u>[Signature]</u> DATE: <u>2/26/15</u> | |

Site # SI-01 Initial Arrival Date / Time photo #3000
1/28/15 - 0932
 Initial Departure Date / Time 1/28/15 - 0953
 Personnel K. Simoneaux, C. Paul, M. Sevier Weather Conditions Sunny + clear
cool

Target Latitude _____ Actual Latitude N 29.24807
 Target Longitude _____ Actual Longitude W 89.56367
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|-----------|---------|-----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>1</u> | 2>X cm | <u>20</u> | % Cover | <u>41</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 3 SA/SI/CL SM SM _____

Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
 Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|-----------|--------|-------|
| Gravimetric Sample 1 | Sand Volume | <u>540</u> | Coal Volume | <u>41</u> | % Coal | _____ |
| Gravimetric Sample 2 | Sand Volume | <u>525</u> | Coal Volume | <u>41</u> | % Coal | _____ |

Comment: _____

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time NA
 Sample Collection Departure Date / Time NA
 Personnel Same as above Weather Conditions Same as above

Sample ID SI-01(0-6) Ben / Tox Collection Date/Time 1/28/15 - 0940

Comment: _____ *Submit for SPLP

- Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 3001

Site # SL02 Initial Arrival Date / Time 1/28/15 - 1002
 Initial Departure Date / Time _____
 Personnel V. Simoneaux, C. Paul, M. Sevier Weather Conditions Sunny & clear, windy, cool

Target Latitude _____ Actual Latitude N 29.24514
 Target Longitude _____ Actual Longitude W 89.86109
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|--------------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>3</u> | % Cover | <u><1</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes No
 Auger Diameter _____ Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth _____ SA/SI/CL _____ ILD

Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|-------|-------------|-------|--------|-------|
| Gravimetric Sample 1 | Sand Volume | _____ | Coal Volume | _____ | % Coal | _____ |
| Gravimetric Sample 2 | Sand Volume | _____ | Coal Volume | _____ | % Coal | _____ |
| Comment: _____ | | | | | | |

Does Site Require Benthic Sampling? Yes / No _____
 Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____
 Personnel _____ Weather Conditions _____

Sample ID _____ Ben / Tox _____ Collection Date/Time _____
 Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # SI-03 Initial Arrival Date / Time 1/28/15 - 1025 *photo # 3002*
 Initial Departure Date / Time 1/28/15 - 1042

Personnel V. Simoncay, C. Paul, M. Sevier Weather Conditions Sunny + clear, windy, cold

Target Latitude _____ Actual Latitude N 29.24294
 Target Longitude _____ Actual Longitude W 89.55695

Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|-----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>5</u> | % Cover | <u>41</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes/No
 Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 3 SA/SI/CL SM SM

Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
 Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume 580 Coal Volume 41 % Coal _____
 Gravimetric Sample 2 Sand Volume 580 Coal Volume 41 % Coal _____

Comment: trace coal particles on both grav tests

Does Site Require Benthic Sampling? Yes/No
 Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time NA
 Sample Collection Departure Date / Time NA

Personnel Same as above Weather Conditions same as above

Sample ID SI-03(0-6) Ben Tox Collection Date/Time 1/28/15 - 1030

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 3003

Site # SI-04 Initial Arrival Date / Time 1/28/15 - 1104
 Initial Departure Date / Time 1/28/15 - 1109
 Personnel K. Simoneaux, C. Paul, M. Sevier Weather Conditions sunny + clear, windy, cool

Target Latitude _____ Actual Latitude N 29.24159
 Target Longitude _____ Actual Longitude W 089.55232
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>4</u> | 2>X cm | <u>3</u> | % Cover | <u>4</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter _____ Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth _____ SA/SI/CL _____ 1/2
 Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|-------|-------------|-------|--------|-------|
| Gravimetric Sample 1 | Sand Volume | _____ | Coal Volume | _____ | % Coal | _____ |
| Gravimetric Sample 2 | Sand Volume | _____ | Coal Volume | _____ | % Coal | _____ |
| Comment: _____ | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____
 Personnel _____ Weather Conditions _____
 Sample ID _____ Ben / Tox _____ Collection Date/Time _____
 Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Photo # 3008

Site # SI-05 Initial Arrival Date / Time 1/29/15 - 1020
 Initial Departure Date / Time 1/29/15 - 1039
 Personnel L. Simonewicz, C. Paul Weather Conditions Sunny & clear warm, windy

Target Latitude _____ Actual Latitude N 29.24029
 Target Longitude _____ Actual Longitude W 089.54768
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|---|-----------|---|----------|---|--------|---|---------|----|
| X>10 cm | 0 | 10>X>5 cm | 0 | 5>X>2 cm | 0 | 2>X cm | 3 | % Cover | <1 |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No

| | | | | | |
|----------------|---|------------------|--------|--------|--------|
| Auger Diameter | 3 | Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
| Auger Depth | 4 | SA/SI/CL | SM | SM | |

| | | | | | |
|------------------|---|-----------------|---|--------------------------|---|
| Total Weight (1) | / | Soil Weight (1) | / | Retained Coal Weight (1) | / |
| Total Weight (2) | / | Soil Weight (2) | / | Retained Coal Weight (2) | / |

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|-----|-------------|----|--------|--|
| Gravimetric Sample 1 | Sand Volume | 450 | Coal Volume | <1 | % Coal | |
| Gravimetric Sample 2 | Sand Volume | 570 | Coal Volume | <1 | % Coal | |

Comment: plot falls on dune ridge

Does Site Require Benthic Sampling? Yes / No

| | |
|--------|--|
| Reason | Reference Site / No-or- Least Coal Found / High Coal Found |
|--------|--|

| | |
|---|----------------------|
| Sample Collection Arrival Date / Time | NA |
| Sample Collection Departure Date / Time | NA |
| Personnel | Weather Conditions |
| <u>Same as above</u> | <u>Same as above</u> |

Sample ID SI-05(0-6) Ben / Tox Collection Date/Time 1/29/15-1025

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # SI-06 Initial Arrival Date / Time 1/29/15-1048 *photo # 3009*
 Initial Departure Date / Time 1/29/15-1053

Personnel K. Simoneaux
C. Paul Weather Conditions Sunny + clear
warm + windy

Target Latitude _____ Actual Latitude N 29.23897
 Target Longitude _____ Actual Longitude W 089.84305
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>0</u> | % Cover | <u>0</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes No
 Auger Diameter _____ Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth _____ SA/SI/CL _____

Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume _____ Coal Volume _____ % Coal _____
 Gravimetric Sample 2 Sand Volume _____ Coal Volume _____ % Coal _____

Comment: _____

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____

Personnel _____ Weather Conditions _____

Sample ID _____ Ben / Tox _____ Collection Date/Time _____

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # **SI-07**

Initial Arrival Date / Time **1/29/15 - 1101**

Initial Departure Date / Time **1/29/15 - 1125**

Personnel **K. Simoncaux, C. Paul**

Weather Conditions **sunny + clear warm + windy**

Target Latitude

Actual Latitude **N 29.23767**

Target Longitude

Actual Longitude **W 89.53815**

Reason for difference

approx. 10m offset to get off dune ridge

Coal Visual Observation of 1 Meter Square

| | | | | | | | | | |
|---------|--------------------------|-----------|--------------------------|----------|--------------------------|--------|----------|---------|-----------|
| X>10 cm | <input type="checkbox"/> | 10>X>5 cm | <input type="checkbox"/> | 5>X>2 cm | <input type="checkbox"/> | 2>X cm | 3 | % Cover | 4/ |
|---------|--------------------------|-----------|--------------------------|----------|--------------------------|--------|----------|---------|-----------|

Comment:

Does Site Require Soil Bore and Tox Testing? Yes / No

Auger Diameter **3**

Soil Description **0-2 ft** **2-4 ft** **4-6 ft**

Auger Depth **3**

SA/SI/CL **SM** **S/M**

Total Weight (1)

Soil Weight (1)

Retained Coal Weight (1)

Total Weight (2)

Soil Weight (2)

Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|----------|--------|--|
| Gravimetric Sample 1 | Sand Volume | 490 | Coal Volume | 0 | % Coal | |
| Gravimetric Sample 2 | Sand Volume | 650 | Coal Volume | 0 | % Coal | |

Comment:

Does Site Require Benthic Sampling? Yes / No

Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time **NA**

Sample Collection Departure Date / Time **NA**

Personnel **same as above**

Weather Conditions **same as above**

Sample ID **SI-07(0-6)** Ben Tox Collection Date/Time **1/29/15 - 1105**

Comment:

- Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 3011

Site # SI-08 Initial Arrival Date / Time 1/29/15 - 1132
 Initial Departure Date / Time 1/29/15 - 1138
 Personnel K. Simoneaux, C. Paul Weather Conditions Sunny + clear, warm + windy

Target Latitude _____ Actual Latitude N 29.23663
 Target Longitude _____ Actual Longitude W 89.53292
 Reason for difference off 6m to get off dune ridge

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|---|-----------|---|----------|---|--------|----|---------|----|
| X>10 cm | ○ | 10>X>5 cm | ○ | 5>X>2 cm | ○ | 2>X cm | 20 | % Cover | <1 |
| Comment: | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes No

| | | | | |
|----------------|------------------|--------|--------|--------|
| Auger Diameter | Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
| Auger Depth | SA/SI/CL | | | |

Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample

| | | | |
|----------------------|-------------|-------------|--------|
| Gravimetric Sample 1 | Sand Volume | Coal Volume | % Coal |
| Gravimetric Sample 2 | Sand Volume | Coal Volume | % Coal |
| Comment: | | | |

Does Site Require Benthic Sampling? Yes / No Yes No

Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____
 Personnel _____ Weather Conditions _____

Sample ID _____ Ben / Tox _____ Collection Date/Time _____
 Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # SI-09 Initial Arrival Date / Time photo #3012
1/29/15 - 1150
 Initial Departure Date / Time 1/29/15 - 1205

Personnel K. Simercaunt, C. Paul Weather Conditions sunny + clear
warm + windy

Target Latitude _____ Actual Latitude N 29.23510
 Target Longitude _____ Actual Longitude W 89.52708
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>0</u> | % Cover | <u>0</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 1 SA/SI/CL SM

Total Weight (1) 540 Soil Weight (1) 5 Retained Coal Weight (1) 0
 Total Weight (2) 490 Soil Weight (2) 5 Retained Coal Weight (2) 0

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|----------|--------|-------|
| Gravimetric Sample 1 | Sand Volume | <u>540</u> | Coal Volume | <u>0</u> | % Coal | _____ |
| Gravimetric Sample 2 | Sand Volume | <u>490</u> | Coal Volume | <u>0</u> | % Coal | _____ |

Comment: very silty sand

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time NA
 Sample Collection Departure Date / Time NA
 Personnel Same Weather Conditions Same

Sample ID SI-09 (0-6) Ben / Tox Collection Date/Time 1/29/15 - 1200

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # SI-BG Initial Arrival Date / Time 1/29/15 - 1220 photo # 3013
Initial Departure Date / Time 1/29/15 - 1227

Personnel K. Simoneaux, C. Paul Weather Conditions sunny + clear warm + windy

Target Latitude Actual Latitude N 29.23455
Target Longitude Actual Longitude W 89.52339
Reason for difference offset 8m due to heavy vegetation

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|-----------------------|-----------|-----------------------|----------|-----------------------|--------|-----------------------|---------|-----------------------|
| X>10 cm | <input type="radio"/> | 10>X>5 cm | <input type="radio"/> | 5>X>2 cm | <input type="radio"/> | 2>X cm | <input type="radio"/> | % Cover | <input type="radio"/> |
| Comment: | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes/No
Auger Diameter Soil Description 0-2 ft 2-4 ft 4-6 ft
Auger Depth SA/SI/CL

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume Coal Volume % Coal
Gravimetric Sample 2 Sand Volume Coal Volume % Coal

Comment:

Does Site Require Benthic Sampling? Yes/No
Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time NA
Sample Collection Departure Date / Time NA

Personnel Same Weather Conditions Same

Sample ID SI-BG(0-6) Ben/Tox Collection Date/Time 1/29/15 - 1225

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-01 Initial Arrival Date / Time 1/22/15 - 0932
 Initial Departure Date / Time 1/27/15 - 0937
 Personnel K. Simoneaux, C. Paul, L. Davis Weather Sunny + clear,
M. Sevier Conditions windy, warm, mid-upper 80s

Target Latitude _____ Actual Latitude N 29.54650
 Target Longitude _____ Actual Longitude W 089.85861
 Reason for difference 56m offset due to inaccessible marsh

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|--------------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>1</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>0</u> | % Cover | <u><1</u> |
| Comment: <u>appears to be native soil, no sand, dredge material</u> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter _____ Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth _____ SA/SI/CL _____ VA
 Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|-------|-------------|-------|--------|-------|
| Gravimetric Sample 1 | Sand Volume | _____ | Coal Volume | _____ | % Coal | _____ |
| Gravimetric Sample 2 | Sand Volume | _____ | Coal Volume | _____ | % Coal | _____ |
| Comment: _____ | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No-or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____
 Personnel _____ Weather Conditions _____

Sample ID _____ Ben / Tox _____ Collection Date/Time _____
 Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2992

| | | | |
|-----------|--|-------------------------------|--|
| Site # | LA-02 | Initial Arrival Date / Time | 1/27/15 - 0905 |
| | | Initial Departure Date / Time | 1/27/15 - 0910 |
| Personnel | K. Simoneaux, C. Paul, L. Davis, M. Sevier | | Weather Conditions |
| | | | sunny + clear, windy cold, mid-80's |

| | | | |
|-----------------------|-----------------------------|------------------|-------------|
| Target Latitude | | Actual Latitude | N 29.54799 |
| Target Longitude | | Actual Longitude | W 089.85410 |
| Reason for difference | 2m offset due to open water | | |

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|---|-----------|---|----------|---|--------|---|---------|----|
| X>10 cm | 0 | 10>X>5 cm | 0 | 5>X>2 cm | 7 | 2>X cm | 3 | % Cover | 41 |
| Comment: | | | | | | | | | |

| | | | |
|--|---|--------------------------|----------------------------|
| Does Site Require Soil Bore and Tox Testing? | Yes / <input checked="" type="radio"/> No | | |
| Auger Diameter | | Soil Description | 0-2 ft 2-4 ft 4-6 ft |
| Auger Depth | | SA/SI/CL | |
| Total Weight (1) | | Soil Weight (1) | |
| Total Weight (2) | | Soil Weight (2) | |
| | | Retained Coal Weight (1) | |
| | | Retained Coal Weight (2) | |

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|--|-------------|--|--------|--|
| Gravimetric Sample 1 | Sand Volume | | Coal Volume | | % Coal | |
| Gravimetric Sample 2 | Sand Volume | | Coal Volume | | % Coal | |
| Comment: | | | | | | |

Does Site Require Benthic Sampling? Yes / No

| | |
|--------|---|
| Reason | Reference Site / No -or- Least Coal Found / High Coal Found |
|--------|---|

| | | |
|---|-----------|----------------------|
| Sample Collection Arrival Date / Time | | |
| Sample Collection Departure Date / Time | | |
| Personnel | | |
| Weather Conditions | | |
| Sample ID | Ben / Tox | Collection Date/Time |
| Comment: | | |

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-03 Initial Arrival Date / Time photo # 7995
1/27/15-1025
 Initial Departure Date / Time 1/27/15-1045
 Personnel K. Simons, C. Paul, L. Davis, M. Lewis Weather Conditions Sunny + clear, windy, warming mid-upper 50s

Target Latitude _____ Actual Latitude N 29.55064
 Target Longitude _____ Actual Longitude W 89.86261
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|-----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>4</u> | % Cover | <u>41</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 3 SA/SI/CL SM SM

Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
 Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|-----------|--------|--|
| Gravimetric Sample 1 | Sand Volume | <u>450</u> | Coal Volume | <u>41</u> | % Coal | |
| Gravimetric Sample 2 | Sand Volume | <u>510</u> | Coal Volume | <u>41</u> | % Coal | |
| Comment: _____ | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time NA
 Sample Collection Departure Date / Time NA
 Personnel same as above Weather Conditions Same as above

Sample ID LH-03(0-6) Ben / Tox Collection Date/Time 1/27/15-1030
 Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2991

Site # LH-04 Initial Arrival Date / Time 1/27/15 - 0823
 Initial Departure Date / Time 1/27/15 - 0848
 Personnel K. Simoneaux, C. Paul, M. Sevier, L. Davis Weather Conditions Sunny + clear, slight wind, cool, mid 80s

Target Latitude _____ Actual Latitude N 29.55078
 Target Longitude _____ Actual Longitude W 089.85670
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|-----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>4</u> | 2>X cm | <u>45</u> | % Cover | <u>2</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 3 SA/SI/CL SM SM _____

Total Weight (1) NA Soil Weight (1) NA Retained Coal Weight (1) 0
 Total Weight (2) NA Soil Weight (2) NA Retained Coal Weight (2) 0

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|----------|--------|-------|
| Gravimetric Sample 1 | Sand Volume | <u>530</u> | Coal Volume | <u>L</u> | % Coal | _____ |
| Gravimetric Sample 2 | Sand Volume | <u>560</u> | Coal Volume | <u>L</u> | % Coal | _____ |

Comment: _____

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time 1/26/15 - NA
 Sample Collection Departure Date / Time NA
 Personnel Same as above Weather Conditions Same as above

Sample ID LH-04(0-6) Bent/Tox Collection Date/Time 1/27/15 - 0830

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-05

Initial Arrival Date / Time 1/27/15-1126

Photo # 2996

Initial Departure Date / Time 1/27/15-1149

Personnel K. Simeneaux, C. Paul, L. Davis, M. Sewer

Weather Conditions Sunny + clear, slight wind, warm upper 50s

Target Latitude

Actual Latitude N 29.55425

Target Longitude

Actual Longitude W 089.86611

Reason for difference

10m offset due to open water

Coal Visual Observation of 1 Meter Square

| | | | | | | | | | |
|---------|----------|-----------|----------|----------|----------|--------|----------|---------|--------------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>2</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>9</u> | % Cover | <u><1</u> |
|---------|----------|-----------|----------|----------|----------|--------|----------|---------|--------------|

Comment:

Does Site Require Soil Bore and Tox Testing?

Yes / No

Auger Diameter

3

Soil Description

0-2 ft

2-4 ft

4-6 ft

Auger Depth

3

SA/SI/CL

SM(CL)

SM

Total Weight (1)

NA

Soil Weight (1)

NA

Retained Coal Weight (1)

NA

Total Weight (2)

NA

Soil Weight (2)

NA

Retained Coal Weight (2)

NA

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1

Sand Volume 580

Coal Volume 0

% Coal

Gravimetric Sample 2

Sand Volume 540

Coal Volume 1

% Coal

Comment: clay content made reading volume difficult

Does Site Require Benthic Sampling?

Yes / No

Reason

Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time

NA

Sample Collection Departure Date / Time

NA

Personnel

Same as above

Weather Conditions

Same as above

Sample ID LH-05(0-6)

Ben Tox

Collection Date/Time 1/27/15-1130

Comment:

Notes:

Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2994

Site # Initial Arrival Date / Time
 Initial Departure Date / Time
 Personnel Weather Conditions

Target Latitude Actual Latitude
 Target Longitude Actual Longitude
 Reason for difference

Coal Visual Observation of 1 Meter Square

| | | | | | | | | | |
|---------|---|-----------|---|----------|---|--------|---|---------|----|
| X>10 cm | 6 | 10>X>5 cm | 0 | 5>X>2 cm | 1 | 2>X cm | 6 | % Cover | 41 |
|---------|---|-----------|---|----------|---|--------|---|---------|----|

Comment:

Does Site Require Soil Bore and Tox Testing? Yes / No

| | | | | | |
|----------------|--|------------------|--------|--------|--------|
| Auger Diameter | | Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
| Auger Depth | | SA/SI/CL | | | |

| | | | | | |
|------------------|--|-----------------|--|--------------------------|--|
| Total Weight (1) | | Soil Weight (1) | | Retained Coal Weight (1) | |
| Total Weight (2) | | Soil Weight (2) | | Retained Coal Weight (2) | |

Note: Gravimetric samples to come from sieved sample

| | | | |
|----------------------|-------------|-------------|--------|
| Gravimetric Sample 1 | Sand Volume | Coal Volume | % Coal |
| Gravimetric Sample 2 | Sand Volume | Coal Volume | % Coal |

Comment:

Does Site Require Benthic Sampling?

| | |
|--------|---|
| Reason | Reference Site / No -or- Least Coal Found / High Coal Found |
|--------|---|

Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time

Personnel Weather Conditions

| | | | |
|-----------|--|-----------|----------------------|
| Sample ID | | Ben / Tox | Collection Date/Time |
|-----------|--|-----------|----------------------|

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-07

Initial Arrival Date / Time

photo # 3006-3007
1/28/15 - 1440

Initial Departure Date / Time

1/28/15 - 1445

Personnel

K. Simonsen, C. Paul

Weather
Conditions

Sunny + clear,
windy, warm

Target Latitude

Actual Latitude

Target Longitude

Actual Longitude

N 29.55829

W 89.85403

Reason for difference

—————

Coal Visual Observation of 1 Meter Square

| | | | | | | | | | |
|-------------------------------|-----------------------|-----------|----------------------------------|----------|----------------------------------|--------|-----------|---------|----------|
| X>10 cm | <input type="radio"/> | 10>X>5 cm | <input checked="" type="radio"/> | 5>X>2 cm | <input checked="" type="radio"/> | 2>X cm | <u>60</u> | % Cover | <u>/</u> |
| Comment: <u>most < 1cm</u> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing?

Yes No

Auger Diameter

Soil Description

0-2 ft

2-4 ft

4-6 ft

Auger Depth

SA/SI/CL

Total Weight (1)

Soil Weight (1)

Retained Coal Weight (1)

Total Weight (2)

Soil Weight (2)

Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1

Sand Volume

Coal Volume

% Coal

Gravimetric Sample 2

Sand Volume

Coal Volume

% Coal

Comment:

Does Site Require Benthic Sampling?

Yes / No

Reason

Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time

Sample Collection Departure Date / Time

Personnel

Weather
Conditions

Sample ID

Ben / Tox

Collection Date/Time

Comment:

Notes:

Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2999

Site # LH-08 Initial Arrival Date / Time 1/27/15-1307
 Initial Departure Date / Time 1/27/15-1328
 Personnel K. Simoneaux, C. Paul Weather Conditions Sunny + clear, windy, cool upper 50s

Target Latitude _____ Actual Latitude N 29.55793
 Target Longitude _____ Actual Longitude W 89.84727
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|--|----------|-----------|----------|----------|----------|--------|-----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>1</u> | 5>X>2 cm | <u>3</u> | 2>X cm | <u>50</u> | % Cover | <u>2</u> |
| Comment: <u>alot of coal dust particle in plot</u> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No

| | | | | | |
|----------------|----------|------------------|-----------|-----------|--------|
| Auger Diameter | <u>3</u> | Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
| Auger Depth | <u>3</u> | SA/SI/CL | <u>SM</u> | <u>SM</u> | |

| | | | | | |
|------------------|----------|-----------------|----------|--------------------------|----------|
| Total Weight (1) | <u>/</u> | Soil Weight (1) | <u>/</u> | Retained Coal Weight (1) | <u>/</u> |
| Total Weight (2) | <u>/</u> | Soil Weight (2) | <u>/</u> | Retained Coal Weight (2) | <u>/</u> |

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|----------|--------|--|
| Gravimetric Sample 1 | Sand Volume | <u>570</u> | Coal Volume | <u>1</u> | % Coal | |
| Gravimetric Sample 2 | Sand Volume | <u>600</u> | Coal Volume | <u>1</u> | % Coal | |

Comment: _____

Does Site Require Benthic Sampling? Yes / No

Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time NA
 Sample Collection Departure Date / Time NA
 Personnel Same as Above Weather Conditions Same as above

Sample ID LH-08(0-6) Ben / Tox Collection Date/Time 1/27/15-1315

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-09 Initial Arrival Date / Time photo# 2998
1/27/15 - 1242
 Initial Departure Date / Time 1/27/15 - 1247
 Personnel K. Simons, C. Paul, L. Davis, M. Sevier Weather Conditions Sunny + clear, slight wind, cool upper 50s

Target Latitude _____ Actual Latitude N 29.55724
 Target Longitude _____ Actual Longitude W 089.84310
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|-----------|---------|-----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>3</u> | 2>X cm | <u>12</u> | % Cover | <u>21</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes No
 Auger Diameter _____ Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth _____ SA/SI/CL _____
 Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample
 Gravimetric Sample 1 Sand Volume _____ Coal Volume _____ % Coal _____
 Gravimetric Sample 2 Sand Volume _____ Coal Volume _____ % Coal _____
 Comment: _____

Does Site Require Benthic Sampling? Yes / No Yes No
 Reason _____ Reference Site / No or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____
 Personnel _____ Weather Conditions _____

Sample ID _____ Ben / Tox _____ Collection Date/Time _____
 Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2997

Site # LH-10 Initial Arrival Date / Time 1/27/15 - 1207
 Initial Departure Date / Time 1/27/15 - 1213
 Personnel K. Simoneaux, C. Paul, L. Davis, M. Sevier Weather Conditions Sunny + clear, windy, warm, mid-upper 50s

Target Latitude _____ Actual Latitude N 29.55429
 Target Longitude _____ Actual Longitude W 089.85384
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|--|----------|-----------|----------|----------|----------|--------|-----------|---------|--------------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>4</u> | 2>X cm | <u>17</u> | % Cover | <u><1</u> |
| Comment: <u>Sm offset due to heavy vegetation + standing water</u> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter _____ Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth _____ SA/SI/CL _____
 Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample
 Gravimetric Sample 1 Sand Volume _____ Coal Volume _____ % Coal _____
 Gravimetric Sample 2 Sand Volume _____ Coal Volume _____ % Coal _____
 Comment: _____

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____
 Personnel _____ Weather Conditions _____

Sample ID _____ Ben / Tox _____ Collection Date/Time _____
 Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2989

Site # Initial Arrival Date / Time
 Initial Departure Date / Time
 Personnel Weather Conditions
 Target Latitude Actual Latitude
 Target Longitude Actual Longitude
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|--------------------------------|-----------|--------------------------------|----------|--------------------------------|--------|---------------------------------|---------|--------------------------------|
| X>10 cm | <input type="text" value="0"/> | 10>X>5 cm | <input type="text" value="0"/> | 5>X>2 cm | <input type="text" value="4"/> | 2>X cm | <input type="text" value="25"/> | % Cover | <input type="text" value="3"/> |
| Comment: <input type="text"/> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No

| | | | | | |
|----------------|----------------------|------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Auger Diameter | <input type="text"/> | Soil Description | <input type="text" value="0-2 ft"/> | <input type="text" value="2-4 ft"/> | <input type="text" value="4-6 ft"/> |
| Auger Depth | <input type="text"/> | SA/SI/CL | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
 Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|-------------------------------|-------------|----------------------|-------------|----------------------|--------|----------------------|
| Gravimetric Sample 1 | Sand Volume | <input type="text"/> | Coal Volume | <input type="text"/> | % Coal | <input type="text"/> |
| Gravimetric Sample 2 | Sand Volume | <input type="text"/> | Coal Volume | <input type="text"/> | % Coal | <input type="text"/> |
| Comment: <input type="text"/> | | | | | | |

Does Site Require Benthic Sampling?

Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time

Personnel Weather Conditions

Sample ID Ben / Tox Collection Date/Time

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2988

Site # Initial Arrival Date / Time
 Initial Departure Date / Time
 Personnel Weather Conditions

Target Latitude Actual Latitude
 Target Longitude Actual Longitude
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|--------------------------------|-----------|--------------------------------|----------|--------------------------------|--------|----------------------------------|---------|--------------------------------|
| X>10 cm | <input type="text" value="0"/> | 10>X>5 cm | <input type="text" value="0"/> | 5>X>2 cm | <input type="text" value="8"/> | 2>X cm | <input type="text" value="100"/> | % Cover | <input type="text" value="5"/> |
| Comment: <input type="text"/> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter Soil Description
 Auger Depth SA/SI/CL

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
 Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|-------------------------------|-------------|----------------------|-------------|----------------------|--------|----------------------|
| Gravimetric Sample 1 | Sand Volume | <input type="text"/> | Coal Volume | <input type="text"/> | % Coal | <input type="text"/> |
| Gravimetric Sample 2 | Sand Volume | <input type="text"/> | Coal Volume | <input type="text"/> | % Coal | <input type="text"/> |
| Comment: <input type="text"/> | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time
 Personnel Weather Conditions

Sample ID Ben / Tox Collection Date/Time
 Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-13 Initial Arrival Date / Time photos #2983
1/26/15-1036
Initial Departure Date / Time 1/26/15-1102
Personnel K. Simonneau, G. Pittman, L. Davis Weather Conditions Sunny + Clear,
C. Brouil, M. Sevier, C. Paul windy, cold mid 80s
Target Latitude _____ Actual Latitude N. 29.55463
Target Longitude _____ Actual Longitude W 089.83984
Reason for difference 4m offset south due to excessive vegetation

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|---|-----------|---|----------|---|--------|---|---------|---|
| X>10 cm | 0 | 10>X>5 cm | 0 | 5>X>2 cm | 0 | 2>X cm | 2 | % Cover | 4 |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
Auger Depth 3 SA/SI/CL SM SM _____

Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| Gravimetric Sample | Sand Volume | Coal Volume | % Coal |
|----------------------|-------------|-------------|--------|
| Gravimetric Sample 1 | <u>520</u> | <u>1</u> | _____ |
| Gravimetric Sample 2 | <u>550</u> | <u>0</u> | _____ |
| Comment: _____ | | | |

Does Site Require Benthic Sampling? Yes / No
Reason _____ Reference Site / No -or- Least Coal Found / High Coal Found _____
Sample Collection Arrival Date / Time NA
Sample Collection Departure Date / Time NA
Personnel SAA Weather Conditions SAA

Sample ID LH-13(0-6) Ben Tox Collection Date/Time 1/26/15-1045
Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

Site # Initial Arrival Date / Time photo # 2981-2982
 Initial Departure Date / Time
 Personnel Weather Conditions

Target Latitude Actual Latitude
 Target Longitude Actual Longitude
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|-----------------------|-----------|-----------------------|----------|-----------------------|--------|-----------------------|---------|-----------------------|
| X>10 cm | <input type="radio"/> | 10>X>5 cm | <input type="radio"/> | 5>X>2 cm | <input type="radio"/> | 2>X cm | <input type="radio"/> | % Cover | <input type="radio"/> |
| Comment: <input type="text" value="current location under approx. 1in. water"/> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter Soil Description
 Auger Depth SA/SI/CL
 Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
 Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|-------------------------------|-------------|----------------------|-------------|----------------------|--------|----------------------|
| Gravimetric Sample 1 | Sand Volume | <input type="text"/> | Coal Volume | <input type="text"/> | % Coal | <input type="text"/> |
| Gravimetric Sample 2 | Sand Volume | <input type="text"/> | Coal Volume | <input type="text"/> | % Coal | <input type="text"/> |
| Comment: <input type="text"/> | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found
 Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time
 Personnel Weather Conditions
 Sample ID Ben / Tox Collection Date/Time
 Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2990

Site # LH-1S
Initial Arrival Date / Time 1/26/15-1347
Initial Departure Date / Time 1/26/15-1410
Personnel K. Simoneaux, G. Pittman, G. Davis, C. Bohl, M. Sevier, C. Paul
Weather Conditions Sunny & clear, windy, warming mid-upper 50s

Target Latitude
Actual Latitude N 29.54965
Target Longitude
Actual Longitude W 089.84685
Reason for difference 3m offset due to excessive vegetation

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>0</u> | % Cover | <u>0</u> |
| Comment: | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes/No
Auger Diameter 3
Auger Depth 2.25
Soil Description 0-2 ft SM, 2-4 ft SM, 4-6 ft
SA/SI/CL SM, SM,
Total Weight (1) /, Soil Weight (1) /, Retained Coal Weight (1) /
Total Weight (2) /, Soil Weight (2) /, Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|--------------|--------|--|
| Gravimetric Sample 1 | Sand Volume | <u>500</u> | Coal Volume | <u><1</u> | % Coal | |
| Gravimetric Sample 2 | Sand Volume | <u>450</u> | Coal Volume | <u><1</u> | % Coal | |
| Comment: | | | | | | |

Does Site Require Benthic Sampling? Yes (No)
Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time NA
Sample Collection Departure Date / Time NA
Personnel Same as Above
Weather Conditions Same as Above

Sample ID LH-1S(0-6) Ben (Tox) Collection Date/Time 1/26/15-1355
Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 2986-2987

Site # LH-16 Initial Arrival Date / Time 1/26/15 - 1230
 Initial Departure Date / Time 1/26/15 - 1255
 Personnel K. Simoneaux, G. Pittman, C. Bruhl, L. Davis, C. Paul, M. Server Weather Conditions Sunny + clear, windy, warming mid 50s
 Target Latitude _____ Actual Latitude N 29.55030
 Target Longitude _____ Actual Longitude W 089.84226
 Reason for difference 13m offset due to open water

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|-----------------------|-----------|-----------------------|----------|-----------------------|--------|-----------------------|---------|-----------------------|
| X>10 cm | <input type="radio"/> | 10>X>5 cm | <input type="radio"/> | 5>X>2 cm | <input type="radio"/> | 2>X cm | <input type="radio"/> | % Cover | <input type="radio"/> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 2 SA/SI/CL SM SM

Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
 Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|----------|--------|--|
| Gravimetric Sample 1 | Sand Volume | <u>440</u> | Coal Volume | <u>1</u> | % Coal | |
| Gravimetric Sample 2 | Sand Volume | <u>440</u> | Coal Volume | <u>1</u> | % Coal | |
| Comment: _____ | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No - or - Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time NA
 Sample Collection Departure Date / Time NA
 Personnel Same as Above Weather Conditions Same as above

Sample ID LH-16(0-6) Ben / Tox Collection Date/Time 1/26/15-1240

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo #2984-2985

Site # LH-17 Initial Arrival Date / Time 1/26/15-1113
 Initial Departure Date / Time 1/26/15-1145
 Personnel K. Simoneaux, G. Pittman, C. Paul, L. Davis, C. Brouh, M. Sever Weather Conditions Sunny + clear, windy, cold mid 80s

Target Latitude Actual Latitude N 29.55137
 Target Longitude Actual Longitude W 089.83838
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>1</u> | % Cover | <u>5</u> |
| Comment: <u>% cover mostly fines</u> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 4 SA/SI/CL SM SM

Total Weight (1) Soil Weight (1) Retained Coal Weight (1) 3
 Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|--|-------------|------------|-------------|----------|--------|-------------------|
| Gravimetric Sample 1 | Sand Volume | <u>570</u> | Coal Volume | <u>2</u> | % Coal | <u> </u> |
| Gravimetric Sample 2 | Sand Volume | <u>590</u> | Coal Volume | <u>1</u> | % Coal | <u> </u> |
| Comment: <u>location near dredge discharge point</u> | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time NA
 Sample Collection Departure Date / Time NA
 Personnel SAA Weather Conditions SAA

Sample ID LH-17(a-6) Ben / Tox Collection Date/Time 1/26/15-1120
 Comment: collect SPLP

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-18 Initial Arrival Date / Time photo # 2979-2980
1/26/15-0930
 Initial Departure Date / Time 1/26/15-1000
 Personnel K. Simoneaux, G. Pittman, L. Davis
C. Bruhl, M. Sevier, C. Paul Weather Conditions Sunny + clear
windy, cold
Low-mid 50s

Target Latitude Actual Latitude N 29.55197
 Target Longitude Actual Longitude W 089.83387
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|--------------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>2</u> | 2>X cm | <u>1</u> | % Cover | <u><1</u> |
| Comment: <u> </u> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 3 Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 3 SA/SI/CL SM SM

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
 Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|--|-------------|------------|-------------|--------------|--------|-----------------------------|
| Gravimetric Sample 1 | Sand Volume | <u>560</u> | Coal Volume | <u>1</u> | % Coal | <u> </u> |
| Gravimetric Sample 2 | Sand Volume | <u>530</u> | Coal Volume | <u><1</u> | % Coal | <u> </u> |
| Comment: <u>Black substance 5' away from plot, turned out to be peete material</u> | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found
 Sample Collection Arrival Date / Time NA
 Sample Collection Departure Date / Time NA
 Personnel Same As Above Weather Conditions SAA

Sample ID LH-18(0-6) Ben / Tox Collection Date/Time 1/26/15-0955
 Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-19

Initial Arrival Date / Time: 2/26/15 - 1036

Personnel: K. Simoneaux, A. Smith
C. Paul, L. Davis

Initial Departure Date / Time: 2/26/15 - 1105

Weather Condition: Cold, Windy

Target Latitude: _____

Actual Latitude: ~~29.53765840~~ 29.55347321

Target Longitude: _____

Actual Longitude: 89.53765840

Reason for difference _____

Coal Visual Observation of 1 Meter Square

| | | | | | | | | | |
|---------|----------|-----------|----------|----------|----------|--------|-----------|---------|-----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>3</u> | 5>X>2 cm | <u>3</u> | 2>X cm | <u>20</u> | % Cover | <u>40</u> |
|---------|----------|-----------|----------|----------|----------|--------|-----------|---------|-----------|

Comment: _____

Does Site Require Soil Bore and Tox Testing? Yes / No

Auger Diameter: 3

| | | | |
|------------------|--------|--------|--------|
| Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
|------------------|--------|--------|--------|

Auger Depth: 2.5

| | | | |
|----------|-----------|--|--|
| SA/SI/CL | <u>SI</u> | | |
|----------|-----------|--|--|

Total Weight (1): /

Soil Weight (1): /

Retained Coal Weight (1): /

Total Weight (2): /

Soil Weight (2): /

Retained Coal Weight (2): /

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume: 570 Coal Volume: 20 % Coal: _____

Gravimetric Sample 2 Sand Volume: 570 Coal Volume: 10 % Coal: _____

Comment: _____

Does Site Require Benthic Sampling? Yes / No

Reason _____

Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time: _____

Sample Collection Departure Date / Time: _____

Personnel: Same

Weather Condition: Same

What Analysis does sample require? Bent/Tox

Sample ID: LH-19(0-6)

Collection Date/Time: 2/26/15 - 1050

Comment: _____

- Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-20 Initial Arrival Date / Time: 2/26/15 - 1110
 Initial Departure Date / Time: 2/26/15 - 1140
 Personnel: K. Simonneau, A. Smith Weather Condition: Cold, windy,
C. Paul, L. Davis overcast

Target Latitude: _____ Actual Latitude: 29.55153269
 Target Longitude: _____ Actual Longitude: 89.83727452
 Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|-----------|--------|-----------------|---------|-----------|
| X>10 cm | <u>4</u> | 10>X>5 cm | <u>2</u> | 5>X>2 cm | <u>30</u> | 2>X cm | <u>>1000</u> | % Cover | <u>75</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No

| | | | | |
|--------------------------|------------------|--------------|--------------|--------|
| Auger Diameter: <u>3</u> | Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
| Auger Depth: <u>3</u> | SA/SI/CL | <u>SA/SI</u> | <u>SA/SI</u> | |

Total Weight (1): / Soil Weight (1): / Retained Coal Weight (1): /
 Total Weight (2): / Soil Weight (2): / Retained Coal Weight (2): /

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume: 530 Coal Volume: 15 % Coal: _____
 Gravimetric Sample 2 Sand Volume: 540 Coal Volume: 10 % Coal: _____

Comment: _____

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found High Coal Found

Sample Collection Arrival Date / Time: _____
 Sample Collection Departure Date / Time: _____
 Personnel: Same Weather Condition: Same

What Analysis does sample require? Ben / Tox
 Sample ID: LH-20 (0-6) Collection Date/Time: 2/26/15 - 1120

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # LH-21 Initial Arrival Date / Time: 2/26/15 - 1313

Initial Departure Date / Time: 1334

Personnel: K. Simanung, A. Smith, C. Paul, L. Davis

Weather Condition: Cold, windy overcast

Target Latitude: _____

Actual Latitude: 29.5539

Target Longitude: _____

Actual Longitude: 89.8627

Reason for difference _____

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|-----------|--------|----------------|---------|-----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>7</u> | 5>X>2 cm | <u>40</u> | 2>X cm | <u>>100</u> | % Cover | <u>10</u> |
| Comment: _____ | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No

Auger Diameter: 3
 Auger Depth: 3

| Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
|------------------|--------------|--------|--------|
| SA/SI/CL | <u>SA/SI</u> | | |

Total Weight (1): _____
 Total Weight (2): _____

Soil Weight (1): _____
 Soil Weight (2): _____

Retained Coal Weight (1): _____
 Retained Coal Weight (2): _____

Note: Gravimetric samples to come from sieved sample

| | | | |
|----------------------|-------------------------|------------------------|---------------|
| Gravimetric Sample 1 | Sand Volume: <u>540</u> | Coal Volume: <u>15</u> | % Coal: _____ |
| Gravimetric Sample 2 | Sand Volume: <u>480</u> | Coal Volume: <u>15</u> | % Coal: _____ |

Comment: _____

Does Site Require Benthic Sampling? Yes / No

Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time: _____

Sample Collection Departure Date / Time: _____

Personnel: Same

Weather Condition: cold cloudy windy

What Analysis does sample require? Ben/Tox

Sample ID: LH-21(6-6)

Collection Date/Time: 2/26/15 - 1315

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

photo # 3005

Site # LH-B6 Initial Arrival Date / Time 1/28/15-1407
 Initial Departure Date / Time 1/28/15-1415

Personnel K. Simoneaux
Chris Paul Weather Conditions Sunny + clear
warm, windy

Target Latitude _____ Actual Latitude N 29.55850
 Target Longitude _____ Actual Longitude W 89.86016
 Reason for difference 2m offset

| Coal Visual Observation of 1 Meter Square | | | | | | | | | |
|---|----------|-----------|----------|----------|----------|--------|----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>0</u> | 5>X>2 cm | <u>0</u> | 2>X cm | <u>0</u> | % Cover | <u>0</u> |
| Comment: <u>heavy vegetative cover</u> | | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No

| | | | | |
|----------------|------------------|--------|--------|--------|
| Auger Diameter | Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
| Auger Depth | SA/SI/CL | | | |

Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample

| | | | |
|----------------------|-------------|-------------|--------|
| Gravimetric Sample 1 | Sand Volume | Coal Volume | % Coal |
| Gravimetric Sample 2 | Sand Volume | Coal Volume | % Coal |

Comment: _____

Does Site Require Benthic Sampling? Yes / No

Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time 1/28/15-1347
 Sample Collection Departure Date / Time 1/28/15-1315

Personnel K. Simoneaux, C. Paul Weather Conditions sunny + clear
warm + windy

Sample ID LH-B6(0-6) Ben / Tox Collection Date/Time 1/28/15-1350
 Comment: _____ 1410

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-01 Initial Arrival Date / Time 1/31/15 2:00
 Initial Departure Date / Time
 Personnel Chris Paul GARVIN PITTMAN Weather Overcast
CODY BRUHL Conditions 57°
 Target Latitude Actual Latitude N 29.65125
 Target Longitude Actual Longitude W 90.02224
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | |
|---|-----------|----------|--------|--|--|---------|
| X>10 cm | 10>X>5 cm | 5>X>2 cm | 2>X cm | | | % Cover |
| Comment: <u>2" granular, 1" detritous, NO COAL observed</u> | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 4" Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 2.5' SA/SI/CL SA/SI SA/SI
 Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
 Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|-----------------------------|-------------|------------|-------------|---------------|--------|---------|
| Gravimetric Sample 1 | Sand Volume | <u>565</u> | Coal Volume | <u>< 1</u> | % Coal | <u></u> |
| Gravimetric Sample 2 | Sand Volume | <u>560</u> | Coal Volume | <u>< 1</u> | % Coal | <u></u> |
| Comment: <u>MOSTLY SAND</u> | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason No -or- Least Coal Found / High Coal Found
 Reference Site No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time 1/31/15 2:00
 Sample Collection Departure Date / Time 1/31/15 2:15
 Personnel OB, CP, GP Weather Overcast
 Conditions 57°

Sample ID BD-01 (C-6) Bent/Tox Collection Date/Time 1/31/15 2:00
 Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-02

Initial Arrival Date / Time 2/1/15 10:10
 Initial Departure Date / Time

Personnel Cody Brouil, Garwin Pittman, Chris Paul Weather Conditions Partly Cloudy

Target Latitude _____ Actual Latitude 29.65189
 Target Longitude _____ Actual Longitude 90.01804

Reason for difference Thick spatting 1/2 inch detritus, no accretion

| Coal Visual Observation of 1 Meter Square | | | | | | |
|---|-----------|--|----------|--|--------|---------|
| X>10 cm | 10>X>5 cm | | 5>X>2 cm | | 2>X cm | % Cover |
| Comment: | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes/No
 Auger Diameter _____ Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth _____ SA/SI/CL

Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume _____ Coal Volume _____ % Coal _____
 Gravimetric Sample 2 Sand Volume _____ Coal Volume _____ % Coal _____

Comment:

Does Site Require Benthic Sampling? Yes/No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____

Personnel _____ Weather Conditions _____

Sample ID _____ Ben / Tox _____ Collection Date/Time _____

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-03 *16-OLYMPUS*
 Initial Arrival Date / Time 1/30/15 1:05
 Initial Departure Date / Time

Personnel Chris Paul GARVIN PITTMAN
CODY DRUM
 Weather Conditions Mostly cloudy 55°

Target Latitude Actual Latitude N 29.65342
 Target Longitude Actual Longitude W 90.01413
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | |
|--|-----------|----------|--------|--|--|---------|
| X>10 cm | 10>X>5 cm | 5>X>2 cm | 2>X cm | | | % Cover |
| Comment: <u>4-6" ACCRETION. NO COAL OBSERVED. HEAVY VEGETATION</u> | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No 2-3'
 Auger Diameter 4" Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth SA/SI/CL SILT CLAY SAND SILT

Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
 Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|--------------|--------|---------|
| Gravimetric Sample 1 | Sand Volume | <u>660</u> | Coal Volume | <u><1</u> | % Coal | <u></u> |
| Gravimetric Sample 2 | Sand Volume | <u>540</u> | Coal Volume | <u><1</u> | % Coal | <u></u> |

Comment: HIGHLY ORGANIC

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time
 Personnel Same Weather Conditions Same

Sample ID BD-03 (0-6) Ben / (Tox) Collection Date/Time SAME AS ABOVE

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-04 *OLYMPUS-18*
Initial Arrival Date / Time 1/31/15 9:30
Initial Departure Date / Time

Personnel CODY BRINK Chris Paol
GARWIN PITMAN
Weather Conditions SUNNY, 48°

Target Latitude
Actual Latitude N 29.64979
Target Longitude
Actual Longitude W 90.02026

Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | |
|---|-----------|--|----------|--|--------|---------|
| X>10 cm | 10>X>5 cm | | 5>X>2 cm | | 2>X cm | % Cover |
| Comment: <u>NO COAL OBSERVED NO SAND UP TO 1.5'</u> | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes/No
Auger Diameter
Soil Description 0-2 ft 2-4 ft 4-6 ft
Auger Depth
SA/SI/CL

Total Weight (1)
Soil Weight (1)
Retained Coal Weight (1)
Total Weight (2)
Soil Weight (2)
Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| Gravimetric Sample 1 | Sand Volume | Coal Volume | % Coal |
|----------------------|-------------|-------------|--------|
| Gravimetric Sample 2 | Sand Volume | Coal Volume | % Coal |

Comment:

Does Site Require Benthic Sampling? Yes/No
Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
Sample Collection Departure Date / Time
Personnel
Weather Conditions

Sample ID Ben / Tox Collection Date/Time

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD05 campus-18 Initial Arrival Date / Time 1/31/15 11:00
 Initial Departure Date / Time

Personnel Garvin Pittman Weather Windy, Sunny
Cody Brugg Conditions 57°

Target Latitude Actual Latitude N 29.64998
 Target Longitude Actual Longitude W 90.01682

Reason for difference 6M due to existing airport trail to wreck
FRONT OPEN area to conduct observation

| Coal Visual Observation of 1 Meter Square | | | | | | |
|--|-----------|----------|---|--------|--|---------|
| X>10 cm | 10>X>5 cm | 5>X>2 cm | 1 | 2>X cm | | % Cover |
| | | | | | | |
| Comment: <u>FINE ALGAE GROWTH ON SURFACE</u> | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 4 in Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth 2.5 ft SA/SI/CL SI/SA SI/SA SI/SA

Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
 Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|---|-------------|--------------|-------------|--------------|--------|--|
| Gravimetric Sample 1 | Sand Volume | <u>510ml</u> | Coal Volume | <u><1</u> | % Coal | |
| Gravimetric Sample 2 | Sand Volume | <u>530ml</u> | Coal Volume | <u><1</u> | % Coal | |
| Comment: <u>organic liquid slurry above coal/coke line = 70ml</u> <u>1c</u> <u>"</u> <u>"</u> <u>(2nd sample) = 40ml</u> | | | | | | |

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time 1/31/15 11:00
 Sample Collection Departure Date / Time 1/31/15 11:15
 Personnel CB, CP, GP Weather windy, sunny
 Conditions 51°

Sample ID BD-05(0-6) Ber/Tox Collection Date/Time 1/31/15 11:00

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

SP-LP -> highest C=Ah

Photo # 13 Olympus

Site # BD-06 Initial Arrival Date / Time 1/30/15 9:45
 Initial Departure Date / Time
 Personnel CODY BRANCH CHRIS PAUL Weather SUNNY 50°
GARVIN PITMAN Conditions LIGHT WIND

Target Latitude Actual Latitude N 29.65021
 Target Longitude Actual Longitude W 90.01274
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | |
|--|-----------|----------|--------|--|--|---------|
| X>10 cm | 10>X>5 cm | 5>X>2 cm | 2>X cm | | | % Cover |
| <u>N/A</u> | | | | | | |
| Comment: <u>9.2-16.4 organic layer on sand. MOST TYPHO MOATS</u> <u>NO OBSERVATION POSSIBLE</u> | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes/No
 Auger Diameter Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth SA/SI/CL

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
 Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| Gravimetric Sample | Sand Volume | Coal Volume | % Coal |
|----------------------|-------------|-------------|---------|
| Gravimetric Sample 1 | <u></u> | <u></u> | <u></u> |
| Gravimetric Sample 2 | <u></u> | <u></u> | <u></u> |

Comment:

Does Site Require Benthic Sampling? Yes/No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time
 Personnel Weather
 Conditions

Sample ID Ben / Tox Collection Date/Time

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-07 *campus 19*
 Initial Arrival Date / Time 1/31/15 10:10
 Initial Departure Date / Time 1/31/15 10:27

Personnel Chris Paul CODY BRUHL
CARLIN PITTMAN
 Weather Conditions SUNNY 46°

Target Latitude _____ Actual Latitude N 29.64707
 Target Longitude _____ Actual Longitude W 90.01850
 Reason for difference _____

Coal Visual Observation of 1 Meter Square

| X>10 cm | 10>X>5 cm | 5>X>2 cm | 2>X cm | % Cover |
|---------|-----------|----------|--------|---------|
| | | | | |

Comment: NO COAL OBSERVED. 6" accretion

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter 4" Soil Description 0-2 ft 2-4 ft 4-6 ft *6" accretion SI/CL*
 Auger Depth 2.75' SA/SI/CL SI/SA.5-2 SA/SI

Total Weight (1) / Soil Weight (1) / Retained Coal Weight (1) /
 Total Weight (2) / Soil Weight (2) / Retained Coal Weight (2) /

Note: Gravimetric samples to come from sieved sample

| | | | |
|----------------------|------------------------|-----------------------|--------------|
| Gravimetric Sample 1 | Sand Volume <u>440</u> | Coal Volume <u>21</u> | % Coal _____ |
| Gravimetric Sample 2 | Sand Volume <u>610</u> | Coal Volume <u>0</u> | % Coal _____ |

Comment: _____

Does Site Require Benthic Sampling? Yes / No
 Reason _____ Reference Site / No-or-Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time _____
 Sample Collection Departure Date / Time _____

Personnel JAME AS ABOVE
 Weather Conditions /

Sample ID BD-07(0-6) Ben / Tox (Tox) Collection Date/Time 1/31/15 10:10

Comment: SAME AS ABOVE

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-08 15-OLYMPUS
 Initial Arrival Date / Time 1/30/15 11:20
 Initial Departure Date / Time

Personnel CB GP
CP Weather Conditions Partly cloudy 55°
Windy

Target Latitude Actual Latitude N 29.64727
 Target Longitude Actual Longitude W 090.01533
 Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | |
|---|---------------|--------------|----------|--|--|---------|
| X > 10 cm | 10 > X > 5 cm | 5 > X > 2 cm | 2 > X cm | | | % Cover |
| Comment: <u>1 inch accretion, vegetated cover</u> | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No
 Auger Diameter Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth SA/SI/CL

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
 Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume Coal Volume % Coal
 Gravimetric Sample 2 Sand Volume Coal Volume % Coal

Comment:

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No or Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time
 Personnel Weather Conditions

Sample ID Ben / Tox Collection Date/Time

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # **BD-09** *14 - OLYMPIUS*
Initial Arrival Date / Time **10:25 1/30/15**
Initial Departure Date / Time

Personnel **CODY BRUCE** **Chris Paul**
GARWIN PITTMAN
Weather Conditions **Partly cloudy 50°**
WINDY

Target Latitude
Actual Latitude **N 29.64689**
Target Longitude
Actual Longitude **W 090.01135**
Reason for difference **9m away EXCESSIVE VEGETATION**

| Coal Visual Observation of 1 Meter Square | | | | | | | | |
|---|-----------------------|-----------|-----------------------|----------|-----------------------|--------|-----------------------|---------|
| X>10 cm | <input type="radio"/> | 10>X>5 cm | <input type="radio"/> | 5>X>2 cm | <input type="radio"/> | 2>X cm | <input type="radio"/> | % Cover |
| Comment: Sparsely vegetated. Little carbon | | | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No **2-3**
Auger Diameter **4"** Soil Description **0-2 ft** **2-4 ft** **4-6 ft**
Auger Depth **3'** SA/SI/CL **SA SA** **SAND/SILTY SAND**
INCLUDE ORGANIC

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| | | | | | | |
|----------------------|-------------|------------|-------------|------------|--------|--|
| Gravimetric Sample 1 | Sand Volume | 530 | Coal Volume | 15 | % Coal | |
| Gravimetric Sample 2 | Sand Volume | 440 | Coal Volume | 2.5 | % Coal | |

Comment: **ORGANIC mixed with COAL** *SOME ORGANIC*

Does Site Require Benthic Sampling? Yes / No
Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time **1/30/15 10:25**
Sample Collection Departure Date / Time **1/30/15 10:35**
Personnel **CP, CB, BP**
Weather Conditions **partly cloudy 50°**
windy

Sample ID **BD-09 (6-6)** **Bent Tox** Collection Date/Time **1/30/15 10:25**

Comment: **FOUND COKE/COAL LINES IN GRAVIMETRIC SAMPLES**

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-10

Photo # 11 OLYMPUS

Initial Arrival Date / Time 1/30/15 9:00 AM
Initial Departure Date / Time

Personnel CHRIS PAUL GARVIN PATTMAN
CODY BREUHL

Weather Conditions partly cloudy 45°
windy

Target Latitude
Target Longitude
Reason for difference 9m away due to BACCARUS
Actual Latitude 29.64785 N
Actual Longitude 90.03712 W

| Coal Visual Observation of 1 Meter Square | | | | | | |
|---|---------------|--------------|----------|------------|--|--|
| X > 10 cm | 10 > X > 5 cm | 5 > X > 2 cm | 2 > X cm | % Cover | | |
| <u>N/A</u> | <u>10</u> | <u>5</u> | <u>2</u> | <u>100</u> | | |
| Comment: <u>3/4 INCH OF accretion/organics, unable to visually observe sand layer</u> | | | | | | |

| | | | | | |
|--|------------|------------------|-----------|--------------------------|--------|
| Does Site Require Soil Bore and Tox Testing? | Yes / No | <u>(2-2.5)</u> | | | |
| Auger Diameter | <u>4"</u> | Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
| Auger Depth | <u>2.5</u> | SA/SI/CL | <u>SA</u> | <u>SA</u> | |
| Total Weight (1) | | Soil Weight (1) | | Retained Coal Weight (1) | |
| Total Weight (2) | | Soil Weight (2) | | Retained Coal Weight (2) | |

Note: Gravimetric samples to come from sieved sample

| | | | | | |
|----------------------|-------------|------------|-------------|---------------|--------|
| Gravimetric Sample 1 | Sand Volume | <u>510</u> | Coal Volume | <u>< 1</u> | % Coal |
| Gravimetric Sample 2 | Sand Volume | <u>490</u> | Coal Volume | <u>< 1</u> | % Coal |

Comment:

Does Site Require Benthic Sampling? Yes/No
Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time 1/30/15 9:15
Sample Collection Departure Date / Time 1/30/15 9:30

Personnel same

Weather Conditions partly cloudy 45°
windy

Sample ID BD-10(06) Ben / Tox Collection Date/Time 1/30/15

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-11

Initial Arrival Date / Time 2/11/15 11:15

Initial Departure Date / Time

Personnel CODY BRUCE Chris Paul
GARVIN PITTMAN

Weather Conditions overcast
70°

Target Latitude
 Target Longitude

Actual Latitude 29.65160
 Actual Longitude 40.00364

Reason for difference

Coal Visual Observation of 1 Meter Square

| X>10 cm | 10>X>5 cm | 5>X>2 cm | 2>X cm | % Cover |
|---------|-----------|----------|--------|---------|
|---------|-----------|----------|--------|---------|

Comment: in debris. No reaction. HEAVY VEGETATION. 6" water
NO COAL OBSERVED

Does Site Require Soil Bore and Tox Testing? Yes / No

| | | | | |
|----------------|------------------|--------|--------|--------|
| Auger Diameter | Soil Description | 0-2 ft | 2-4 ft | 4-6 ft |
| Auger Depth | SA/SI/CL | | | |

| | | |
|------------------|-----------------|--------------------------|
| Total Weight (1) | Soil Weight (1) | Retained Coal Weight (1) |
| Total Weight (2) | Soil Weight (2) | Retained Coal Weight (2) |

Note: Gravimetric samples to come from sieved sample

| | | | |
|----------------------|-------------|-------------|--------|
| Gravimetric Sample 1 | Sand Volume | Coal Volume | % Coal |
| Gravimetric Sample 2 | Sand Volume | Coal Volume | % Coal |

Comment:

Does Site Require Benthic Sampling? Yes / No

Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time

Personnel
 Weather Conditions

Sample ID Ben / Tox Collection Date/Time

Comment:

- Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-12

Initial Arrival Date / Time 1/30/15 2:05

Initial Departure Date / Time

Personnel Chris Paul CODY BYRNE
CAROL PITTMAN

Weather Conditions MOSTLY CLOUDY
55°

Target Latitude

Actual Latitude N 29.65223

Target Longitude

Actual Longitude W 90.00980

Reason for difference

Coal Visual Observation of 1 Meter Square

| X>10 cm | 10>X>5 cm | 5>X>2 cm | 2>X cm | % Cover |
|--|-----------|----------|--------|---------|
| | | | | |
| Comment: <u>3 in water, 4 in to 5" accretion. NO COAL OBSERVED</u> | | | | |

Does Site Require Soil Bore and Tox Testing?

Yes / No

Auger Diameter

Soil Description

0-2 ft

2-4 ft

4-6 ft

Auger Depth

SA/SI/CL

Total Weight (1)

Soil Weight (1)

Retained Coal Weight (1)

Total Weight (2)

Soil Weight (2)

Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1

Sand Volume

Coal Volume

% Coal

Gravimetric Sample 2

Sand Volume

Coal Volume

% Coal

Comment:

Does Site Require Benthic Sampling?

Yes / No

Reason

Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time

Sample Collection Departure Date / Time

Personnel

Weather Conditions

Sample ID

Ben / Tox

Collection Date/Time

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # **BD-13** *OLYMPUS 35*
 Initial Arrival Date / Time **2/1/15 11:30**
 Initial Departure Date / Time

Personnel **CAROLAN PATTMAN** **CHRIS PAUL** **CODY BRULL**
 Weather Conditions **overcast 70°**

Target Latitude
 Target Longitude
 Reason for difference
 Actual Latitude **24.65433**
 Actual Longitude **90.00748**

| Coal Visual Observation of 1 Meter Square | | | | | | |
|---|---------------|--------------|--|----------|--|---------|
| X > 10 cm | 10 > X > 5 cm | 5 > X > 2 cm | | 2 > X cm | | % Cover |
| Comment: <i>1" water 1" detritus / accretion NO COAL OBSERVED</i> | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes / No **2-2.5**
 Auger Diameter **4"** Soil Description **0-2 ft** **2-4 ft** **4-6 ft**
 Auger Depth **2.5'** SA/SI/CL **SA/SI** **SA/SI**

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
 Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

| Gravimetric Sample | Sand Volume | Coal Volume | % Coal |
|----------------------|-------------|---------------|--------|
| Gravimetric Sample 1 | 430 | < 1 | |
| Gravimetric Sample 2 | 500 | < 1 | |

Comment: *1: A LOT OF ORGANICS*
2: ORGANICS (SLIGHTLY LESS)

Does Site Require Benthic Sampling? Yes / No
 Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
 Sample Collection Departure Date / Time
 Personnel **CB, CP, GP**
 Weather Conditions

Sample ID **BD-13 (0-6)** Ben Tox Collection Date/Time **2/1/15 11:30**

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-14

OLYMPIUS - 33

Initial Arrival Date / Time 2/1/15 10:48
Initial Departure Date / Time

Personnel Weather Conditions partly cloudy 67

Target Latitude Actual Latitude 29.65757
Target Longitude Actual Longitude 90.01158
Reason for difference

| Coal Visual Observation of 1 Meter Square | | | | | | |
|--|-----------|--|----------|--|--------|---------|
| X>10 cm | 10>X>5 cm | | 5>X>2 cm | | 2>X cm | % Cover |
| Comment: <u>1/2 inch shavings, No accumulation. No COAL OBSERVED</u> | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes/No
Auger Diameter Soil Description 0-2 ft 2-4 ft 4-6 ft
Auger Depth SA/SI/CL

Total Weight (1) Soil Weight (1) Retained Coal Weight (1)
Total Weight (2) Soil Weight (2) Retained Coal Weight (2)

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume Coal Volume % Coal
Gravimetric Sample 2 Sand Volume Coal Volume % Coal

Comment:

Does Site Require Benthic Sampling? Yes / No
Reason Reference Site / No -or- Least Coal Found / High Coal Found

Sample Collection Arrival Date / Time
Sample Collection Departure Date / Time

Personnel Weather Conditions

Sample ID Ben / Tox Collection Date/Time

Comment:

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
Dupont - 1 reference, 1 no coal, 3 high coal
Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-15

Initial Arrival Date / Time: 2/26/15-1555

Initial Departure Date / Time: 2/26/15-1430

Personnel: K. Simon, C. Paul
L. Davis A. Smith

Weather Condition: clear, cold

Target Latitude: _____

Actual Latitude: 29.65244567

Target Longitude: _____

Actual Longitude: 90.01932062

Reason for difference _____

Coal Visual Observation of 1 Meter Square

| | | | | | | | | | |
|---------|----------|-----------|----------|----------|----------|--------|-----------|---------|----------|
| X>10 cm | <u>0</u> | 10>X>5 cm | <u>1</u> | 5>X>2 cm | <u>9</u> | 2>X cm | <u>30</u> | % Cover | <u>2</u> |
|---------|----------|-----------|----------|----------|----------|--------|-----------|---------|----------|

Comment: _____

Does Site Require Soil Bore and Tox Testing? Yes / No

Auger Diameter: 3

Soil Description

| | | |
|--------|--------|--------|
| 0-2 ft | 2-4 ft | 4-6 ft |
|--------|--------|--------|

Auger Depth: 3

SA/SI/CL

| | | |
|-------------|--------------|--|
| <u>SAB1</u> | <u>SA/SI</u> | |
|-------------|--------------|--|

Total Weight (1): _____

Soil Weight (1): _____

Retained Coal Weight (1): _____

Total Weight (2): _____

Soil Weight (2): _____

Retained Coal Weight (2): _____

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume: 460

Coal Volume: 21 % Coal: _____

Gravimetric Sample 2 Sand Volume: 470

Coal Volume: 21 % Coal: _____

Comment: _____

Does Site Require Benthic Sampling? Yes No

Reason _____

Reference Site / No -or- Least Coal Found High Coal Found

Sample Collection Arrival Date / Time: _____

Sample Collection Departure Date / Time: _____

Personnel: same

Weather Condition: same

What Analysis does sample require? Ben / Tox

Sample ID: BD-15(0-6)

Collection Date/Time: 2/26/15-1600

Comment: _____

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Site # BD-B6 *OLYMPUS-28*
 Initial Arrival Date / Time 1/31/15 12:30
 Initial Departure Date / Time _____

Personnel CHRIS PAUL GARVIN PITMAN
CODY BRINK
 Weather Conditions overcast
57°

Target Latitude _____ Actual Latitude N 29.65223
 Target Longitude _____ Actual Longitude W 90.02512

Reason for difference 57 m away due to being on existing spoil bank. moved to clearing in the marsh

| Coal Visual Observation of 1 Meter Square | | | | | | |
|---|-----------|----------|--------|--|--|---------|
| X>10 cm | 10>X>5 cm | 5>X>2 cm | 2>X cm | | | % Cover |
| | | | | | | |
| Comment: | | | | | | |

Does Site Require Soil Bore and Tox Testing? Yes No
 Auger Diameter _____ Soil Description 0-2 ft 2-4 ft 4-6 ft
 Auger Depth _____ SA/SI/CL _____

Total Weight (1) _____ Soil Weight (1) _____ Retained Coal Weight (1) _____
 Total Weight (2) _____ Soil Weight (2) _____ Retained Coal Weight (2) _____

Note: Gravimetric samples to come from sieved sample

Gravimetric Sample 1 Sand Volume _____ Coal Volume _____ % Coal _____
 Gravimetric Sample 2 Sand Volume _____ Coal Volume _____ % Coal _____

Comment: _____

Does Site Require Benthic Sampling? Yes No
 Reason _____ Reference Site / No-or- Least Coal Found / High Coal Found _____

Sample Collection Arrival Date / Time 1/31/15 12:30
 Sample Collection Departure Date / Time _____

Personnel CP, GP, CB
 Weather Conditions overcast
57°

Sample ID BD-B6 (0-6) Ben / Tox Collection Date/Time 1/31/15 12:30

Comment: HEAVY ORGANICS.

Notes: Borings and Toxicity: Bayou Dupont - 7, Hermitage - 9, Scofield - 5
 Benthic samples: Scofield - 1 reference, 1 no coal, 1 high coal
 Dupont - 1 reference, 1 no coal, 3 high coal
 Hermitage - 1 reference, 1 no coal, 3 high coal

Appendix C
Surface Soil Analytical Laboratory Reports
and Analysis Request/Chain-of-Custody
Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-101456-1
Client Project/Site: CPRA Coal Study

For:
CB&I Environmental & Infrastructure, Inc
PO BOX 98519
Baton Rouge, Louisiana 70884

Attn: Accounts Payable

Mark Swafford

Authorized for release by:
2/13/2015 4:56:56 PM

Mark Swafford, Project Manager I
(850)474-1001
mark.swafford@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



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Definitions/Glossary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Qualifiers

GC/MS Semi VOA

| Qualifier | Qualifier Description |
|-----------|---|
| F1 | MS and/or MSD Recovery exceeds the control limits |

Metals

| Qualifier | Qualifier Description |
|-----------|--|
| ^ | ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits. |
| F1 | MS and/or MSD Recovery exceeds the control limits |

Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|----------------|---|
| α | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

Case Narrative

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Job ID: 400-101456-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-101456-1

Comments

No additional comments.

Receipt

The samples were received on 1/31/2015 11:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.0° C and 4.7° C.

GC/MS Semi VOA

Method 8270D LL: The continuing calibration verification (CCV) associated with batch 400-245358 recovered above the upper control limit for Benzo(g,h,i)perylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples were impacted: (LB 400-245358/1-C), LH-17 (0-6) (400-101456-3), SI-01 (0-6) (400-101456-10).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010C: The low level check standard (CCVL) associated with batch 400-246223 recovered above the acceptance criteria for Arsenic. This analyte was biased high in the CCVL and was not detected in the associated samples; therefore, the data have been reported. The following samples were impacted: LH-17 (0-6) (400-101456-3), SI-01 (0-6) (400-101456-10).

Method 6010C: The low level check standard recovery associated with batch 400-246251 is high and outside the acceptance criteria for the following analyte: Arsenic.

Arsenic is reported because it is non-detect in the method blank and >10X the RL in the LCS.

Method 6010C: The matrix spike duplicate (MSD) recovery for batch 400-246251 was outside control limits. Sample non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits and the matrix spike (MS) was also within acceptance limits.

Method 6010C: The low level check standard recovery associated with batch 400-246251 is outside the acceptance criteria for the following analytes: Arsenic and/or Lead.

The samples listed require reanalysis.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-18 (0-6)

Lab Sample ID: 400-101456-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|------------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Anthracene | 0.017 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[a]pyrene | 0.054 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[b]fluoranthene | 0.082 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[g,h,i]perylene | 0.040 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[k]fluoranthene | 0.029 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Chrysene | 0.066 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Dibenz(a,h)anthracene | 0.011 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.14 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Indeno[1,2,3-cd]pyrene | 0.049 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.071 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.12 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[a]anthracene | 0.064 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.1 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 5.4 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.7 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 3.6 | | 0.94 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: LH-13 (0-6)

Lab Sample ID: 400-101456-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------|--------|-----------|------|-----|-------|---------|---|--------|-----------|
| Arsenic | 0.94 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 5.2 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.7 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 3.8 | | 0.91 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: LH-17 (0-6)

Lab Sample ID: 400-101456-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.069 | | 0.0068 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[b]fluoranthene | 0.0092 | | 0.0068 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.014 | | 0.0068 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.0073 | | 0.0068 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.029 | | 0.0068 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 3.1 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 8.3 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 5.8 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 5.8 | | 0.97 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: LH-16 (0-6)

Lab Sample ID: 400-101456-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.056 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[b]fluoranthene | 0.0095 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Chrysene | 0.0072 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.011 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 1-Methylnaphthalene | 0.013 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 2-Methylnaphthalene | 0.015 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Naphthalene | 0.010 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.012 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.020 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-16 (0-6) (Continued)

Lab Sample ID: 400-101456-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------|--------|-----------|------|-----|-------|---------|---|--------|-----------|
| Arsenic | 2.3 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 7.3 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 5.2 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 5.7 | | 0.98 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: LH-15 (0-6)

Lab Sample ID: 400-101456-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.0080 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[b]fluoranthene | 0.012 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[k]fluoranthene | 0.012 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Chrysene | 0.013 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.016 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 1-Methylnaphthalene | 0.021 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 2-Methylnaphthalene | 0.026 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Naphthalene | 0.020 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.019 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.022 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[a]anthracene | 0.012 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 2.2 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 6.0 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 4.5 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.5 | | 0.95 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: LH-04 (0-6)

Lab Sample ID: 400-101456-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.013 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[b]fluoranthene | 0.0082 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Chrysene | 0.0078 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.010 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 1-Methylnaphthalene | 0.018 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 2-Methylnaphthalene | 0.023 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Naphthalene | 0.014 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.0096 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.014 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.5 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 6.2 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 3.1 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.0 | | 0.95 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: LH-03 (0-6)

Lab Sample ID: 400-101456-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.014 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.1 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 6.0 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.8 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.2 | | 0.93 | | mg/Kg | 1 | | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-05 (0-6)

Lab Sample ID: 400-101456-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.010 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Chrysene | 0.014 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.023 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 1-Methylnaphthalene | 0.053 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 2-Methylnaphthalene | 0.074 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Naphthalene | 0.042 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.037 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.031 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 2.9 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 7.7 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 6.3 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 6.3 | | 0.93 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: LH-08 (0-6)

Lab Sample ID: 400-101456-9

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.016 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 1-Methylnaphthalene | 0.0070 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 2-Methylnaphthalene | 0.0081 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.0095 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.9 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 6.8 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 3.9 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.3 | | 0.96 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: SI-01 (0-6)

Lab Sample ID: 400-101456-10

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------|--------|-----------|------|-----|-------|---------|---|--------|-----------|
| Arsenic | 1.1 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 5.3 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.7 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 3.0 | | 0.94 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: SI-03 (0-6)

Lab Sample ID: 400-101456-11

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------|--------|-----------|------|-----|-------|---------|---|--------|-----------|
| Arsenic | 1.2 | | 0.50 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 5.5 | | 0.50 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.8 | | 0.50 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.1 | | 0.99 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: DUP-1

Lab Sample ID: 400-101456-12

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.0073 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.2 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 4.9 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.6 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 3.1 | | 0.97 | | mg/Kg | 1 | | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: SI-05 (0-6)

Lab Sample ID: 400-101456-13

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.0081 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.7 | | 0.50 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 6.8 | | 0.50 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 3.8 | | 0.50 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.3 | | 1.0 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: SI-07 (0-6)

Lab Sample ID: 400-101456-14

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------|--------|-----------|------|-----|-------|---------|---|--------|-----------|
| Arsenic | 1.1 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 5.1 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.5 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 3.5 | | 0.94 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: SI-09 (0-6)

Lab Sample ID: 400-101456-15

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| 1-Methylnaphthalene | 0.0079 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 2-Methylnaphthalene | 0.0085 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Naphthalene | 0.0075 | | 0.0067 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.7 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 6.9 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 3.5 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.3 | | 0.95 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: DUP-2

Lab Sample ID: 400-101456-16

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------|--------|-----------|------|-----|-------|---------|---|--------|-----------|
| Arsenic | 1.3 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 5.4 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.7 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 3.5 | | 0.97 | | mg/Kg | 1 | | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Sample Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 400-101456-1 | LH-18 (0-6) | Solid | 01/26/15 09:55 | 01/31/15 11:00 |
| 400-101456-2 | LH-13 (0-6) | Solid | 01/26/15 10:45 | 01/31/15 11:00 |
| 400-101456-3 | LH-17 (0-6) | Solid | 01/26/15 11:20 | 01/31/15 11:00 |
| 400-101456-4 | LH-16 (0-6) | Solid | 01/26/15 12:40 | 01/31/15 11:00 |
| 400-101456-5 | LH-15 (0-6) | Solid | 01/26/15 13:55 | 01/31/15 11:00 |
| 400-101456-6 | LH-04 (0-6) | Solid | 01/27/15 08:30 | 01/31/15 11:00 |
| 400-101456-7 | LH-03 (0-6) | Solid | 01/27/15 10:30 | 01/31/15 11:00 |
| 400-101456-8 | LH-05 (0-6) | Solid | 01/27/15 11:30 | 01/31/15 11:00 |
| 400-101456-9 | LH-08 (0-6) | Solid | 01/27/15 13:15 | 01/31/15 11:00 |
| 400-101456-10 | SI-01 (0-6) | Solid | 01/28/15 09:40 | 01/31/15 11:00 |
| 400-101456-11 | SI-03 (0-6) | Solid | 01/28/15 10:30 | 01/31/15 11:00 |
| 400-101456-12 | DUP-1 | Solid | 01/28/15 00:00 | 01/31/15 11:00 |
| 400-101456-13 | SI-05 (0-6) | Solid | 01/29/15 10:25 | 01/31/15 11:00 |
| 400-101456-14 | SI-07 (0-6) | Solid | 01/29/15 11:05 | 01/31/15 11:00 |
| 400-101456-15 | SI-09 (0-6) | Solid | 01/29/15 12:00 | 01/31/15 11:00 |
| 400-101456-16 | DUP-2 | Solid | 01/29/15 00:00 | 01/31/15 11:00 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-18 (0-6)

Lab Sample ID: 400-101456-1

Date Collected: 01/26/15 09:55

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------------------------|------------------|------------------|---------------|-----|-------|---|-----------------|-----------------|----------------|
| Acenaphthene | <0.0064 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Acenaphthylene | <0.0064 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Anthracene | 0.017 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Benzo[a]pyrene | 0.054 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Benzo[b]fluoranthene | 0.082 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Benzo[g,h,i]perylene | 0.040 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Benzo[k]fluoranthene | 0.029 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Chrysene | 0.066 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Dibenz(a,h)anthracene | 0.011 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Fluoranthene | 0.14 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Fluorene | <0.0064 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Indeno[1,2,3-cd]pyrene | 0.049 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| 1-Methylnaphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| 2-Methylnaphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Naphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Phenanthrene | 0.071 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Pyrene | 0.12 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Benzo[a]anthracene | 0.064 | | 0.0064 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 84 | | 27 - 127 | | | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Nitrobenzene-d5 (Surr) | 75 | | 15 - 136 | | | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |
| Terphenyl-d14 (Surr) | 90 | | 24 - 146 | | | | 02/04/15 16:04 | 02/06/15 21:13 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.1 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:24 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:53 | 1 |
| Nickel | 5.4 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:53 | 1 |
| Lead | 2.7 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:53 | 1 |
| Vanadium | 3.6 | | 0.94 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:53 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:23 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-13 (0-6)

Lab Sample ID: 400-101456-2

Date Collected: 01/26/15 10:45

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Acenaphthylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Benzo[a]pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Benzo[b]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Benzo[g,h,i]perylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Benzo[k]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Chrysene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Dibenz(a,h)anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Fluorene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| 1-Methylnaphthalene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| 2-Methylnaphthalene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Naphthalene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Phenanthrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Benzo[a]anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 90 | | 27 - 127 | | | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Nitrobenzene-d5 (Surr) | 75 | | 15 - 136 | | | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |
| Terphenyl-d14 (Surr) | 96 | | 24 - 146 | | | | 02/04/15 16:04 | 02/06/15 21:48 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|-------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 0.94 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:27 | 1 |
| Cadmium | <0.46 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:20 | 1 |
| Nickel | 5.2 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:20 | 1 |
| Lead | 2.7 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:27 | 1 |
| Vanadium | 3.8 | | 0.91 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:20 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:24 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-17 (0-6)

Lab Sample ID: 400-101456-3

Date Collected: 01/26/15 11:20

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Acenaphthylene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Anthracene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Benzo[a]pyrene | 0.069 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Benzo[b]fluoranthene | 0.0092 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Benzo[g,h,i]perylene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Benzo[k]fluoranthene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Chrysene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Dibenz(a,h)anthracene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Fluoranthene | 0.014 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Fluorene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| 1-Methylnaphthalene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| 2-Methylnaphthalene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Naphthalene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Phenanthrene | 0.0073 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Pyrene | 0.029 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Benzo[a]anthracene | <0.0068 | | 0.0068 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 88 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Nitrobenzene-d5 (Surr) | 63 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |
| Terphenyl-d14 (Surr) | 89 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 13:17 | 1 |

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Acenaphthene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Acenaphthylene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Benzo[a]anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Benzo[a]pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Benzo[b]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Benzo[g,h,i]perylene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Benzo[k]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Chrysene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Dibenz(a,h)anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Fluorene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Naphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Phenanthrene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| 1-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| 2-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Terphenyl-d14 (Surr) | 85 | | 33 - 138 | | | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| 2-Fluorobiphenyl | 89 | | 15 - 122 | | | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |
| Nitrobenzene-d5 (Surr) | 78 | | 19 - 130 | | | | 02/06/15 08:47 | 02/09/15 19:40 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-17 (0-6)

Lab Sample ID: 400-101456-3

Date Collected: 01/26/15 11:20

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 3.1 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:31 | 1 |
| Cadmium | <0.49 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:23 | 1 |
| Nickel | 8.3 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:23 | 1 |
| Lead | 5.8 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:31 | 1 |
| Vanadium | 5.8 | | 0.97 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:23 | 1 |

Method: 6010C - Metals (ICP) - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| Arsenic | <0.0050 | ^ | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:17 | 1 |
| Cadmium | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:17 | 1 |
| Nickel | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:17 | 1 |
| Lead | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:17 | 1 |
| Vanadium | <0.010 | | 0.010 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:17 | 1 |

Method: 7470A - Mercury (CVAA) - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| Mercury | <0.0016 | | 0.0016 | | mg/L | | 02/05/15 09:59 | 02/06/15 14:38 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:25 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-16 (0-6)

Lab Sample ID: 400-101456-4

Date Collected: 01/26/15 12:40

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Benzo[a]pyrene | 0.056 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Benzo[b]fluoranthene | 0.0095 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Chrysene | 0.0072 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Fluoranthene | 0.011 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| 1-Methylnaphthalene | 0.013 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| 2-Methylnaphthalene | 0.015 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Naphthalene | 0.010 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Phenanthrene | 0.012 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Pyrene | 0.020 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 62 | | 27 - 127 | | | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Nitrobenzene-d5 (Surr) | 41 | | 15 - 136 | | | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |
| Terphenyl-d14 (Surr) | 62 | | 24 - 146 | | | | 02/04/15 16:04 | 02/10/15 15:56 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 2.3 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:34 | 1 |
| Cadmium | <0.49 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:26 | 1 |
| Nickel | 7.3 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:26 | 1 |
| Lead | 5.2 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:34 | 1 |
| Vanadium | 5.7 | | 0.98 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:26 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:27 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-15 (0-6)

Lab Sample ID: 400-101456-5

Date Collected: 01/26/15 13:55

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------------------|---------------|-----------|--------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Benzo[a]pyrene | 0.0080 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Benzo[b]fluoranthene | 0.012 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Benzo[k]fluoranthene | 0.012 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Chrysene | 0.013 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Fluoranthene | 0.016 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| 1-Methylnaphthalene | 0.021 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| 2-Methylnaphthalene | 0.026 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Naphthalene | 0.020 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Phenanthrene | 0.019 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Pyrene | 0.022 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Benzo[a]anthracene | 0.012 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:21 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| 2-Fluorobiphenyl | 81 | | 27 - 127 | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Nitrobenzene-d5 (Surr) | 58 | | 15 - 136 | 02/04/15 16:04 | 02/09/15 14:21 | 1 |
| Terphenyl-d14 (Surr) | 84 | | 24 - 146 | 02/04/15 16:04 | 02/09/15 14:21 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 2.2 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:37 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:29 | 1 |
| Nickel | 6.0 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:29 | 1 |
| Lead | 4.5 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:37 | 1 |
| Vanadium | 4.5 | | 0.95 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:29 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:28 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-04 (0-6)

Lab Sample ID: 400-101456-6

Date Collected: 01/27/15 08:30

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------------------|------------------|------------------|---------------|-----|-------|---|-----------------|-----------------|----------------|
| Acenaphthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Acenaphthylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Benzo[a]pyrene | 0.013 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Benzo[b]fluoranthene | 0.0082 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Benzo[g,h,i]perylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Benzo[k]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Chrysene | 0.0078 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Dibenz(a,h)anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Fluoranthene | 0.010 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Fluorene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| 1-Methylnaphthalene | 0.018 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| 2-Methylnaphthalene | 0.023 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Naphthalene | 0.014 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Phenanthrene | 0.0096 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Pyrene | 0.014 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Benzo[a]anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 82 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Nitrobenzene-d5 (Surr) | 59 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |
| Terphenyl-d14 (Surr) | 85 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 14:53 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.5 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:51 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:33 | 1 |
| Nickel | 6.2 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:33 | 1 |
| Lead | 3.1 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:51 | 1 |
| Vanadium | 4.0 | | 0.95 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:33 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.016 | | 0.016 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:29 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-03 (0-6)

Lab Sample ID: 400-101456-7

Date Collected: 01/27/15 10:30

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|--------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Benzo[a]pyrene | 0.014 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 90 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Nitrobenzene-d5 (Surr) | 62 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |
| Terphenyl-d14 (Surr) | 95 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 15:26 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.1 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:54 | 1 |
| Cadmium | <0.46 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:36 | 1 |
| Nickel | 6.0 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:36 | 1 |
| Lead | 2.8 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:54 | 1 |
| Vanadium | 4.2 | | 0.93 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:36 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.016 | | 0.016 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:30 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-05 (0-6)

Lab Sample ID: 400-101456-8

Date Collected: 01/27/15 11:30

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------------------------|------------------|------------------|---------------|-----|-------|---|-----------------|-----------------|----------------|
| Acenaphthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Acenaphthylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Benzo[a]pyrene | 0.010 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Benzo[b]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Benzo[g,h,i]perylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Benzo[k]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Chrysene | 0.014 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Dibenz(a,h)anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Fluoranthene | 0.023 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Fluorene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| 1-Methylnaphthalene | 0.053 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| 2-Methylnaphthalene | 0.074 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Naphthalene | 0.042 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Phenanthrene | 0.037 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Pyrene | 0.031 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Benzo[a]anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 77 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Nitrobenzene-d5 (Surr) | 52 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |
| Terphenyl-d14 (Surr) | 79 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 15:58 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 2.9 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:49 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:49 | 1 |
| Nickel | 7.7 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:49 | 1 |
| Lead | 6.3 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 17:57 | 1 |
| Vanadium | 6.3 | | 0.93 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:49 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:45 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-08 (0-6)

Lab Sample ID: 400-101456-9

Date Collected: 01/27/15 13:15

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Acenaphthylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Benzo[a]pyrene | 0.016 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Benzo[b]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Benzo[g,h,i]perylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Benzo[k]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Chrysene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Dibenz(a,h)anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Fluorene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| 1-Methylnaphthalene | 0.0070 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| 2-Methylnaphthalene | 0.0081 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Naphthalene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Phenanthrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Pyrene | 0.0095 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Benzo[a]anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 78 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Nitrobenzene-d5 (Surr) | 55 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |
| Terphenyl-d14 (Surr) | 82 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 16:30 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.9 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:53 | 1 |
| Cadmium | <0.48 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:53 | 1 |
| Nickel | 6.8 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:53 | 1 |
| Lead | 3.9 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 18:00 | 1 |
| Vanadium | 4.3 | | 0.96 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:53 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.016 | | 0.016 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:47 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: SI-01 (0-6)

Lab Sample ID: 400-101456-10

Date Collected: 01/28/15 09:40

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Acenaphthylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Benzo[a]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Benzo[b]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Benzo[g,h,i]perylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Benzo[k]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Chrysene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Dibenz(a,h)anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Fluorene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| 1-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| 2-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Naphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Phenanthrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Benzo[a]anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 87 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Nitrobenzene-d5 (Surr) | 66 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |
| Terphenyl-d14 (Surr) | 92 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 17:03 | 1 |

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Acenaphthene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Acenaphthylene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Anthracene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Benzo[a]anthracene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Benzo[a]pyrene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Benzo[b]fluoranthene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Benzo[g,h,i]perylene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Benzo[k]fluoranthene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Chrysene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Dibenz(a,h)anthracene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Fluoranthene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Fluorene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Naphthalene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Phenanthrene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Pyrene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| 1-Methylnaphthalene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| 2-Methylnaphthalene | <0.00033 | | 0.00033 | | mg/L | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Terphenyl-d14 (Surr) | 114 | | 33 - 138 | | | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| 2-Fluorobiphenyl | 103 | | 15 - 122 | | | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |
| Nitrobenzene-d5 (Surr) | 83 | | 19 - 130 | | | | 02/06/15 08:47 | 02/09/15 19:05 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: SI-01 (0-6)

Lab Sample ID: 400-101456-10

Date Collected: 01/28/15 09:40

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.1 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:56 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:56 | 1 |
| Nickel | 5.3 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:56 | 1 |
| Lead | 2.7 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 18:04 | 1 |
| Vanadium | 3.0 | | 0.94 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:56 | 1 |

Method: 6010C - Metals (ICP) - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| Arsenic | <0.0050 | ^ | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:20 | 1 |
| Cadmium | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:20 | 1 |
| Nickel | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:20 | 1 |
| Lead | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:20 | 1 |
| Vanadium | <0.010 | | 0.010 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:20 | 1 |

Method: 7470A - Mercury (CVAA) - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| Mercury | <0.0016 | | 0.0016 | | mg/L | | 02/05/15 09:59 | 02/06/15 14:48 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:48 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: SI-03 (0-6)

Lab Sample ID: 400-101456-11

Date Collected: 01/28/15 10:30

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Acenaphthylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Benzo[a]pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Benzo[b]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Benzo[g,h,i]perylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Benzo[k]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Chrysene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Dibenz(a,h)anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Fluorene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| 1-Methylnaphthalene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| 2-Methylnaphthalene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Naphthalene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Phenanthrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Benzo[a]anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 80 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Nitrobenzene-d5 (Surr) | 61 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |
| Terphenyl-d14 (Surr) | 83 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 17:35 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.2 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:59 | 1 |
| Cadmium | <0.50 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:59 | 1 |
| Nickel | 5.5 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:59 | 1 |
| Lead | 2.8 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 18:07 | 1 |
| Vanadium | 4.1 | | 0.99 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 19:59 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.016 | | 0.016 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:50 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: DUP-1

Lab Sample ID: 400-101456-12

Date Collected: 01/28/15 00:00

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Benzo[a]pyrene | 0.0073 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 80 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Nitrobenzene-d5 (Surr) | 60 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |
| Terphenyl-d14 (Surr) | 86 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 18:07 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.2 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:03 | 1 |
| Cadmium | <0.48 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:03 | 1 |
| Nickel | 4.9 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:03 | 1 |
| Lead | 2.6 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 18:10 | 1 |
| Vanadium | 3.1 | | 0.97 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:03 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.016 | | 0.016 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:51 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: SI-05 (0-6)

Lab Sample ID: 400-101456-13

Date Collected: 01/29/15 10:25

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Benzo[a]pyrene | 0.0081 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 79 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Nitrobenzene-d5 (Surr) | 58 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |
| Terphenyl-d14 (Surr) | 85 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 18:40 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.7 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:06 | 1 |
| Cadmium | <0.50 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:06 | 1 |
| Nickel | 6.8 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:06 | 1 |
| Lead | 3.8 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 18:14 | 1 |
| Vanadium | 4.3 | | 1.0 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:06 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:52 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: SI-07 (0-6)

Lab Sample ID: 400-101456-14

Date Collected: 01/29/15 11:05

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Acenaphthylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Benzo[a]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Benzo[b]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Benzo[g,h,i]perylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Benzo[k]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Chrysene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Dibenz(a,h)anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Fluorene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| 1-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| 2-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Naphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Phenanthrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Benzo[a]anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 92 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Nitrobenzene-d5 (Surr) | 66 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |
| Terphenyl-d14 (Surr) | 95 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 19:12 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.1 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:09 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:09 | 1 |
| Nickel | 5.1 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:09 | 1 |
| Lead | 2.5 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 18:17 | 1 |
| Vanadium | 3.5 | | 0.94 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:09 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.016 | | 0.016 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:53 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: SI-09 (0-6)

Lab Sample ID: 400-101456-15

Date Collected: 01/29/15 12:00

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Acenaphthylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Benzo[a]pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Benzo[b]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Benzo[g,h,i]perylene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Benzo[k]fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Chrysene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Dibenz(a,h)anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Fluoranthene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Fluorene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| 1-Methylnaphthalene | 0.0079 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| 2-Methylnaphthalene | 0.0085 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Naphthalene | 0.0075 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Phenanthrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Pyrene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Benzo[a]anthracene | <0.0067 | | 0.0067 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 80 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Nitrobenzene-d5 (Surr) | 62 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |
| Terphenyl-d14 (Surr) | 85 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 19:44 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.7 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:13 | 1 |
| Cadmium | <0.48 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:13 | 1 |
| Nickel | 6.9 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:13 | 1 |
| Lead | 3.5 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 18:20 | 1 |
| Vanadium | 4.3 | | 0.95 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:13 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.016 | | 0.016 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:54 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: DUP-2

Lab Sample ID: 400-101456-16

Date Collected: 01/29/15 00:00

Matrix: Solid

Date Received: 01/31/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Benzo[a]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 84 | | 27 - 127 | | | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Nitrobenzene-d5 (Surr) | 61 | | 15 - 136 | | | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |
| Terphenyl-d14 (Surr) | 87 | | 24 - 146 | | | | 02/04/15 16:04 | 02/09/15 20:16 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.3 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:16 | 1 |
| Cadmium | <0.49 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:16 | 1 |
| Nickel | 5.4 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:16 | 1 |
| Lead | 2.7 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 18:34 | 1 |
| Vanadium | 3.5 | | 0.97 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:16 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 13:03 | 1 |

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Lab Sample ID: MB 400-245524/1-A

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245524

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|--------------|--------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Benzo[a]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/04/15 16:04 | 02/06/15 18:54 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|--------------|--------------|----------|----------------|----------------|---------|
| 2-Fluorobiphenyl | 99 | | 27 - 127 | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Terphenyl-d14 (Surr) | 107 | | 24 - 146 | 02/04/15 16:04 | 02/06/15 18:54 | 1 |
| Nitrobenzene-d5 (Surr) | 84 | | 15 - 136 | 02/04/15 16:04 | 02/06/15 18:54 | 1 |

Lab Sample ID: LCS 400-245524/2-A

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245524

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|-------|---|------|--------------|
| Acenaphthene | 0.333 | 0.309 | | mg/Kg | | 93 | 59 - 130 |
| Acenaphthylene | 0.333 | 0.317 | | mg/Kg | | 95 | 60 - 130 |
| Anthracene | 0.333 | 0.313 | | mg/Kg | | 94 | 64 - 130 |
| Benzo[a]pyrene | 0.333 | 0.316 | | mg/Kg | | 95 | 56 - 130 |
| Benzo[b]fluoranthene | 0.333 | 0.344 | | mg/Kg | | 103 | 62 - 130 |
| Benzo[g,h,i]perylene | 0.333 | 0.365 | | mg/Kg | | 110 | 39 - 132 |
| Benzo[k]fluoranthene | 0.333 | 0.314 | | mg/Kg | | 94 | 60 - 130 |
| Chrysene | 0.333 | 0.312 | | mg/Kg | | 94 | 65 - 130 |
| Dibenz(a,h)anthracene | 0.333 | 0.356 | | mg/Kg | | 107 | 43 - 133 |
| Fluoranthene | 0.333 | 0.311 | | mg/Kg | | 93 | 61 - 130 |
| Fluorene | 0.333 | 0.341 | | mg/Kg | | 102 | 59 - 130 |
| Indeno[1,2,3-cd]pyrene | 0.333 | 0.357 | | mg/Kg | | 107 | 43 - 131 |
| Naphthalene | 0.333 | 0.294 | | mg/Kg | | 88 | 45 - 130 |
| Phenanthrene | 0.333 | 0.305 | | mg/Kg | | 91 | 63 - 130 |
| 1-Methylnaphthalene | 0.333 | 0.312 | | mg/Kg | | 93 | 56 - 130 |
| Pyrene | 0.333 | 0.328 | | mg/Kg | | 98 | 47 - 135 |
| 2-Methylnaphthalene | 0.333 | 0.302 | | mg/Kg | | 91 | 56 - 130 |
| Benzo[a]anthracene | 0.333 | 0.315 | | mg/Kg | | 94 | 64 - 130 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCS 400-245524/2-A

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245524

| Surrogate | LCS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 97 | | 27 - 127 |
| Terphenyl-d14 (Surr) | 102 | | 24 - 146 |
| Nitrobenzene-d5 (Surr) | 82 | | 15 - 136 |

Lab Sample ID: 400-101456-1 MS

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: LH-18 (0-6)

Prep Type: Total/NA

Prep Batch: 245524

| Analyte | Sample | Sample | Spike | MS | | Unit | D | %Rec | %Rec. | Limits |
|------------------------|---------|-----------|-------|--------|-----------|-------|---|------|----------|--------|
| | Result | Qualifier | | Result | Qualifier | | | | | |
| Acenaphthene | <0.0064 | | 0.333 | 0.272 | | mg/Kg | | 82 | 40 - 140 | |
| Acenaphthylene | <0.0064 | | 0.333 | 0.278 | | mg/Kg | | 84 | 40 - 140 | |
| Anthracene | 0.017 | | 0.333 | 0.279 | | mg/Kg | | 79 | 40 - 140 | |
| Benzo[a]pyrene | 0.054 | | 0.333 | 0.288 | | mg/Kg | | 70 | 40 - 140 | |
| Benzo[b]fluoranthene | 0.082 | | 0.333 | 0.319 | | mg/Kg | | 71 | 40 - 140 | |
| Benzo[g,h,i]perylene | 0.040 | | 0.333 | 0.329 | | mg/Kg | | 87 | 40 - 140 | |
| Benzo[k]fluoranthene | 0.029 | | 0.333 | 0.283 | | mg/Kg | | 76 | 40 - 140 | |
| Chrysene | 0.066 | | 0.333 | 0.285 | | mg/Kg | | 66 | 40 - 140 | |
| Dibenz(a,h)anthracene | 0.011 | | 0.333 | 0.321 | | mg/Kg | | 93 | 40 - 140 | |
| Fluoranthene | 0.14 | | 0.333 | 0.281 | | mg/Kg | | 43 | 40 - 140 | |
| Fluorene | <0.0064 | | 0.333 | 0.302 | | mg/Kg | | 91 | 40 - 140 | |
| Indeno[1,2,3-cd]pyrene | 0.049 | | 0.333 | 0.321 | | mg/Kg | | 82 | 40 - 140 | |
| Naphthalene | <0.0064 | | 0.333 | 0.263 | | mg/Kg | | 79 | 40 - 140 | |
| Phenanthrene | 0.071 | | 0.333 | 0.274 | | mg/Kg | | 61 | 40 - 140 | |
| 1-Methylnaphthalene | <0.0064 | | 0.333 | 0.277 | | mg/Kg | | 83 | 40 - 140 | |
| Pyrene | 0.12 | | 0.333 | 0.310 | | mg/Kg | | 58 | 40 - 140 | |
| 2-Methylnaphthalene | <0.0064 | | 0.333 | 0.266 | | mg/Kg | | 80 | 40 - 140 | |
| Benzo[a]anthracene | 0.064 | | 0.333 | 0.285 | | mg/Kg | | 66 | 40 - 140 | |

| Surrogate | MS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 85 | | 27 - 127 |
| Terphenyl-d14 (Surr) | 93 | | 24 - 146 |
| Nitrobenzene-d5 (Surr) | 73 | | 15 - 136 |

Lab Sample ID: 400-101456-1 MSD

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: LH-18 (0-6)

Prep Type: Total/NA

Prep Batch: 245524

| Analyte | Sample | Sample | Spike | MSD | | Unit | D | %Rec | %Rec. | Limits | RPD | |
|-----------------------|---------|-----------|-------|--------|-----------|-------|---|------|----------|--------|-----|-------|
| | Result | Qualifier | | Result | Qualifier | | | | | | RPD | Limit |
| Acenaphthene | <0.0064 | | 0.334 | 0.269 | | mg/Kg | | 81 | 40 - 140 | 1 | 30 | |
| Acenaphthylene | <0.0064 | | 0.334 | 0.273 | | mg/Kg | | 82 | 40 - 140 | 2 | 30 | |
| Anthracene | 0.017 | | 0.334 | 0.272 | | mg/Kg | | 76 | 40 - 140 | 3 | 30 | |
| Benzo[a]pyrene | 0.054 | | 0.334 | 0.286 | | mg/Kg | | 70 | 40 - 140 | 1 | 30 | |
| Benzo[b]fluoranthene | 0.082 | | 0.334 | 0.314 | | mg/Kg | | 69 | 40 - 140 | 2 | 30 | |
| Benzo[g,h,i]perylene | 0.040 | | 0.334 | 0.326 | | mg/Kg | | 86 | 40 - 140 | 1 | 30 | |
| Benzo[k]fluoranthene | 0.029 | | 0.334 | 0.286 | | mg/Kg | | 77 | 40 - 140 | 1 | 30 | |
| Chrysene | 0.066 | | 0.334 | 0.284 | | mg/Kg | | 65 | 40 - 140 | 0 | 30 | |
| Dibenz(a,h)anthracene | 0.011 | | 0.334 | 0.325 | | mg/Kg | | 94 | 40 - 140 | 1 | 30 | |
| Fluoranthene | 0.14 | | 0.334 | 0.281 | | mg/Kg | | 43 | 40 - 140 | 0 | 30 | |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: 400-101456-1 MSD

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: LH-18 (0-6)

Prep Type: Total/NA

Prep Batch: 245524

| Analyte | Sample | Sample | Spike | MSD | MSD | Unit | D | %Rec | %Rec. | RPD | Limit |
|------------------------|---------|-----------|-------|--------|-----------|-------|---|------|----------|-----|-------|
| | Result | Qualifier | Added | Result | Qualifier | | | | Limits | | |
| Fluorene | <0.0064 | | 0.334 | 0.296 | | mg/Kg | | 89 | 40 - 140 | 2 | 30 |
| Indeno[1,2,3-cd]pyrene | 0.049 | | 0.334 | 0.325 | | mg/Kg | | 83 | 40 - 140 | 1 | 30 |
| Naphthalene | <0.0064 | | 0.334 | 0.253 | | mg/Kg | | 76 | 40 - 140 | 4 | 30 |
| Phenanthrene | 0.071 | | 0.334 | 0.273 | | mg/Kg | | 60 | 40 - 140 | 1 | 30 |
| 1-Methylnaphthalene | <0.0064 | | 0.334 | 0.269 | | mg/Kg | | 81 | 40 - 140 | 3 | 30 |
| Pyrene | 0.12 | | 0.334 | 0.302 | | mg/Kg | | 56 | 40 - 140 | 2 | 30 |
| 2-Methylnaphthalene | <0.0064 | | 0.334 | 0.260 | | mg/Kg | | 78 | 40 - 140 | 2 | 30 |
| Benzo[a]anthracene | 0.064 | | 0.334 | 0.283 | | mg/Kg | | 66 | 40 - 140 | 1 | 30 |

| Surrogate | MSD | MSD | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 80 | | 27 - 127 |
| Terphenyl-d14 (Surr) | 87 | | 24 - 146 |
| Nitrobenzene-d5 (Surr) | 69 | | 15 - 136 |

Lab Sample ID: LCS 400-245718/2-A

Matrix: Solid

Analysis Batch: 245918

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245718

| Analyte | Spike | LCS | LCS | Unit | D | %Rec | %Rec. |
|------------------------|--------|--------|-----------|------|---|------|----------|
| | | Result | Qualifier | | | | Limits |
| Acenaphthene | 0.0300 | 0.0289 | | mg/L | | 96 | 41 - 120 |
| Acenaphthylene | 0.0300 | 0.0292 | | mg/L | | 97 | 44 - 120 |
| Anthracene | 0.0300 | 0.0288 | | mg/L | | 96 | 49 - 120 |
| Benzo[a]pyrene | 0.0300 | 0.0301 | | mg/L | | 100 | 52 - 120 |
| Benzo[b]fluoranthene | 0.0300 | 0.0297 | | mg/L | | 99 | 53 - 134 |
| Benzo[g,h,i]perylene | 0.0300 | 0.0349 | | mg/L | | 116 | 47 - 133 |
| Benzo[k]fluoranthene | 0.0300 | 0.0316 | | mg/L | | 105 | 57 - 134 |
| Chrysene | 0.0300 | 0.0293 | | mg/L | | 98 | 55 - 122 |
| Dibenz(a,h)anthracene | 0.0300 | 0.0339 | | mg/L | | 113 | 48 - 146 |
| Fluoranthene | 0.0300 | 0.0303 | | mg/L | | 101 | 54 - 128 |
| Fluorene | 0.0300 | 0.0321 | | mg/L | | 107 | 45 - 120 |
| Indeno[1,2,3-cd]pyrene | 0.0300 | 0.0339 | | mg/L | | 113 | 43 - 142 |
| Naphthalene | 0.0300 | 0.0257 | | mg/L | | 86 | 39 - 120 |
| Phenanthrene | 0.0300 | 0.0289 | | mg/L | | 96 | 48 - 120 |
| 1-Methylnaphthalene | 0.0300 | 0.0284 | | mg/L | | 95 | 41 - 120 |
| Pyrene | 0.0300 | 0.0304 | | mg/L | | 101 | 48 - 132 |
| 2-Methylnaphthalene | 0.0300 | 0.0276 | | mg/L | | 92 | 32 - 124 |
| Benzo[a]anthracene | 0.0300 | 0.0291 | | mg/L | | 97 | 61 - 135 |

| Surrogate | LCS | LCS | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 102 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 106 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 87 | | 19 - 130 |

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCSD 400-245718/3-A

Matrix: Solid

Analysis Batch: 245918

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 245718

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|------------------------|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
| Acenaphthene | 0.0300 | 0.0289 | | mg/L | | 96 | 41 - 120 | 0 | 56 |
| Acenaphthylene | 0.0300 | 0.0290 | | mg/L | | 97 | 44 - 120 | 1 | 56 |
| Anthracene | 0.0300 | 0.0284 | | mg/L | | 95 | 49 - 120 | 1 | 51 |
| Benzo[a]pyrene | 0.0300 | 0.0294 | | mg/L | | 98 | 52 - 120 | 2 | 50 |
| Benzo[b]fluoranthene | 0.0300 | 0.0288 | | mg/L | | 96 | 53 - 134 | 3 | 54 |
| Benzo[g,h,i]perylene | 0.0300 | 0.0338 | | mg/L | | 113 | 47 - 133 | 3 | 50 |
| Benzo[k]fluoranthene | 0.0300 | 0.0306 | | mg/L | | 102 | 57 - 134 | 3 | 52 |
| Chrysene | 0.0300 | 0.0286 | | mg/L | | 95 | 55 - 122 | 2 | 50 |
| Dibenz(a,h)anthracene | 0.0300 | 0.0331 | | mg/L | | 110 | 48 - 146 | 3 | 50 |
| Fluoranthene | 0.0300 | 0.0297 | | mg/L | | 99 | 54 - 128 | 2 | 52 |
| Fluorene | 0.0300 | 0.0316 | | mg/L | | 105 | 45 - 120 | 2 | 56 |
| Indeno[1,2,3-cd]pyrene | 0.0300 | 0.0328 | | mg/L | | 109 | 43 - 142 | 3 | 51 |
| Naphthalene | 0.0300 | 0.0255 | | mg/L | | 85 | 39 - 120 | 1 | 56 |
| Phenanthrene | 0.0300 | 0.0283 | | mg/L | | 94 | 48 - 120 | 2 | 56 |
| 1-Methylnaphthalene | 0.0300 | 0.0280 | | mg/L | | 93 | 41 - 120 | 1 | 55 |
| Pyrene | 0.0300 | 0.0295 | | mg/L | | 98 | 48 - 132 | 3 | 52 |
| 2-Methylnaphthalene | 0.0300 | 0.0274 | | mg/L | | 91 | 32 - 124 | 1 | 57 |
| Benzo[a]anthracene | 0.0300 | 0.0285 | | mg/L | | 95 | 61 - 135 | 2 | 49 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|------------------------|----------------|----------------|----------|
| 2-Fluorobiphenyl | 97 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 99 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 85 | | 19 - 130 |

Lab Sample ID: LB 400-245358/1-C

Matrix: Solid

Analysis Batch: 245918

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 245718

| Analyte | LB Result | LB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|--------------|---------|-----|------|---|----------------|----------------|---------|
| Acenaphthene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Acenaphthylene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Benzo[a]pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Benzo[b]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Benzo[g,h,i]perylene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Benzo[k]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Chrysene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Dibenz(a,h)anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Fluorene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Naphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Phenanthrene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| 1-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| 2-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Benzo[a]anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/06/15 08:47 | 02/09/15 16:07 | 1 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LB 400-245358/1-C

Matrix: Solid

Analysis Batch: 245918

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 245718

| Surrogate | LB LB | | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| | %Recovery | Qualifier | | | | |
| 2-Fluorobiphenyl | 108 | | 15 - 122 | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Terphenyl-d14 (Surr) | 133 | | 33 - 138 | 02/06/15 08:47 | 02/09/15 16:07 | 1 |
| Nitrobenzene-d5 (Surr) | 93 | | 19 - 130 | 02/06/15 08:47 | 02/09/15 16:07 | 1 |

Lab Sample ID: 400-101456-10 MS

Matrix: Solid

Analysis Batch: 245918

Client Sample ID: SI-01 (0-6)

Prep Type: SPLP West

Prep Batch: 245718

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS MS | | Unit | D | %Rec | %Rec. Limits |
|------------------------|---------------|------------------|-------------|--------|-----------|------|---|------|--------------|
| | | | | Result | Qualifier | | | | |
| Acenaphthene | <0.00033 | | 0.0500 | 0.0496 | | mg/L | | 99 | 35 - 113 |
| Acenaphthylene | <0.00033 | | 0.0500 | 0.0496 | | mg/L | | 99 | 41 - 118 |
| Anthracene | <0.00033 | | 0.0500 | 0.0484 | | mg/L | | 97 | 45 - 122 |
| Benzo[a]pyrene | <0.00033 | | 0.0500 | 0.0502 | | mg/L | | 100 | 50 - 108 |
| Benzo[b]fluoranthene | <0.00033 | | 0.0500 | 0.0504 | | mg/L | | 101 | 50 - 128 |
| Benzo[g,h,i]perylene | <0.00033 | | 0.0500 | 0.0587 | | mg/L | | 117 | 46 - 133 |
| Benzo[k]fluoranthene | <0.00033 | | 0.0500 | 0.0521 | | mg/L | | 104 | 52 - 128 |
| Chrysene | <0.00033 | | 0.0500 | 0.0494 | | mg/L | | 99 | 52 - 116 |
| Dibenz(a,h)anthracene | <0.00033 | | 0.0500 | 0.0565 | | mg/L | | 113 | 52 - 143 |
| Fluoranthene | <0.00033 | | 0.0500 | 0.0502 | | mg/L | | 100 | 32 - 150 |
| Fluorene | <0.00033 | | 0.0500 | 0.0539 | | mg/L | | 108 | 15 - 150 |
| Indeno[1,2,3-cd]pyrene | <0.00033 | | 0.0500 | 0.0565 | | mg/L | | 113 | 41 - 141 |
| Naphthalene | <0.00033 | | 0.0500 | 0.0469 | | mg/L | | 94 | 10 - 150 |
| Phenanthrene | <0.00033 | | 0.0500 | 0.0479 | | mg/L | | 96 | 36 - 125 |
| 1-Methylnaphthalene | <0.00033 | | 0.0500 | 0.0497 | | mg/L | | 99 | 10 - 150 |
| Pyrene | <0.00033 | | 0.0500 | 0.0504 | | mg/L | | 101 | 41 - 127 |
| 2-Methylnaphthalene | <0.00033 | | 0.0500 | 0.0494 | | mg/L | | 99 | 10 - 150 |
| Benzo[a]anthracene | <0.00033 | | 0.0500 | 0.0490 | | mg/L | | 98 | 55 - 133 |

| Surrogate | MS MS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 101 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 97 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 88 | | 19 - 130 |

Lab Sample ID: 400-101456-10 MSD

Matrix: Solid

Analysis Batch: 245918

Client Sample ID: SI-01 (0-6)

Prep Type: SPLP West

Prep Batch: 245718

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD MSD | | Unit | D | %Rec | %Rec. Limits | RPD | |
|-----------------------|---------------|------------------|-------------|---------|-----------|------|---|------|--------------|-----|-------|
| | | | | Result | Qualifier | | | | | RPD | Limit |
| Acenaphthene | <0.00033 | | 0.0500 | 0.0482 | | mg/L | | 96 | 35 - 113 | 3 | 49 |
| Acenaphthylene | <0.00033 | | 0.0500 | 0.0380 | | mg/L | | 76 | 41 - 118 | 26 | 48 |
| Anthracene | <0.00033 | | 0.0500 | 0.0467 | | mg/L | | 93 | 45 - 122 | 4 | 56 |
| Benzo[a]pyrene | <0.00033 | | 0.0500 | 0.0629 | F1 | mg/L | | 126 | 50 - 108 | 22 | 59 |
| Benzo[b]fluoranthene | <0.00033 | | 0.0500 | 0.0676 | F1 | mg/L | | 135 | 50 - 128 | 29 | 62 |
| Benzo[g,h,i]perylene | <0.00033 | | 0.0500 | 0.0761 | F1 | mg/L | | 152 | 46 - 133 | 26 | 58 |
| Benzo[k]fluoranthene | <0.00033 | | 0.0500 | 0.0715 | F1 | mg/L | | 143 | 52 - 128 | 31 | 58 |
| Chrysene | <0.00033 | | 0.0500 | 0.0489 | | mg/L | | 98 | 52 - 116 | 1 | 59 |
| Dibenz(a,h)anthracene | <0.00033 | | 0.0500 | 0.0766 | F1 | mg/L | | 153 | 52 - 143 | 30 | 60 |
| Fluoranthene | <0.00033 | | 0.0500 | 0.0495 | | mg/L | | 99 | 32 - 150 | 1 | 59 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: 400-101456-10 MSD

Matrix: Solid

Analysis Batch: 245918

Client Sample ID: SI-01 (0-6)

Prep Type: SPLP West

Prep Batch: 245718

| Analyte | Sample | Sample | Spike | MSD | MSD | Unit | D | %Rec | %Rec. | | RPD | Limit |
|------------------------|------------------|--------------------------------|---------------|--------|-----------|------|---|------|----------|-----|-----|-------|
| | Result | Qualifier | Added | Result | Qualifier | | | | Limits | RPD | | |
| Fluorene | <0.00033 | | 0.0500 | 0.0535 | | mg/L | | 107 | 15 - 150 | 1 | 49 | |
| Indeno[1,2,3-cd]pyrene | <0.00033 | | 0.0500 | 0.0725 | F1 | mg/L | | 145 | 41 - 141 | 25 | 58 | |
| Naphthalene | <0.00033 | | 0.0500 | 0.0441 | | mg/L | | 88 | 10 - 150 | 6 | 121 | |
| Phenanthrene | <0.00033 | | 0.0500 | 0.0475 | | mg/L | | 95 | 36 - 125 | 1 | 69 | |
| 1-Methylnaphthalene | <0.00033 | | 0.0500 | 0.0461 | | mg/L | | 92 | 10 - 150 | 7 | 66 | |
| Pyrene | <0.00033 | | 0.0500 | 0.0481 | | mg/L | | 96 | 41 - 127 | 5 | 58 | |
| 2-Methylnaphthalene | <0.00033 | | 0.0500 | 0.0453 | | mg/L | | 91 | 10 - 150 | 9 | 66 | |
| Benzo[a]anthracene | <0.00033 | | 0.0500 | 0.0477 | | mg/L | | 95 | 55 - 133 | 3 | 57 | |
| Surrogate | %Recovery | MSD Qualifier | Limits | | | | | | | | | |
| 2-Fluorobiphenyl | 108 | | 15 - 122 | | | | | | | | | |
| Terphenyl-d14 (Surr) | 113 | | 33 - 138 | | | | | | | | | |
| Nitrobenzene-d5 (Surr) | 92 | | 19 - 130 | | | | | | | | | |

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 400-245442/1-A

Matrix: Solid

Analysis Batch: 246251

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245442

| Analyte | MB | MB | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-----|-------|---|----------------|----------------|---------|
| | Result | Qualifier | | | | | | | |
| Arsenic | <0.50 | ^ | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |
| Cadmium | <0.50 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |
| Nickel | <0.50 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |
| Lead | <0.50 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |
| Vanadium | <0.99 | | 0.99 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |

Lab Sample ID: LCS 400-245442/2-A

Matrix: Solid

Analysis Batch: 246251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245442

| Analyte | Spike | LCS | LCS | Unit | D | %Rec | %Rec. | |
|----------|-------|------|-----|-------|---|------|----------|--------|
| | | | | | | | Added | Result |
| Arsenic | 96.6 | 99.5 | ^ | mg/Kg | | 103 | 80 - 120 | |
| Cadmium | 48.3 | 48.7 | | mg/Kg | | 101 | 80 - 120 | |
| Nickel | 96.6 | 99.4 | | mg/Kg | | 103 | 80 - 120 | |
| Lead | 96.6 | 99.6 | | mg/Kg | | 103 | 80 - 120 | |
| Vanadium | 96.6 | 102 | | mg/Kg | | 105 | 80 - 120 | |

Lab Sample ID: 400-101456-1 MS

Matrix: Solid

Analysis Batch: 246251

Client Sample ID: LH-18 (0-6)

Prep Type: Total/NA

Prep Batch: 245442

| Analyte | Sample | Sample | Spike | MS | MS | Unit | D | %Rec | %Rec. | |
|----------|--------|-----------|-------|--------|-----------|-------|---|------|----------|-----|
| | Result | Qualifier | Added | Result | Qualifier | | | | Limits | RPD |
| Arsenic | 1.3 | ^ | 4.71 | 6.22 | ^ | mg/Kg | | 104 | 75 - 125 | |
| Cadmium | <0.47 | | 4.71 | 4.58 | | mg/Kg | | 97 | 75 - 125 | |
| Nickel | 5.4 | | 4.71 | 9.82 | | mg/Kg | | 94 | 75 - 125 | |
| Lead | 2.7 | | 4.71 | 7.78 | ^ | mg/Kg | | 108 | 75 - 125 | |
| Vanadium | 3.6 | | 4.71 | 8.74 | | mg/Kg | | 109 | 75 - 125 | |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 400-101456-1 MSD

Matrix: Solid

Analysis Batch: 246251

Client Sample ID: LH-18 (0-6)

Prep Type: Total/NA

Prep Batch: 245442

| Analyte | Sample | Sample | Spike | MSD | MSD | Unit | D | %Rec | %Rec. | | RPD | Limit |
|----------|--------|-----------|-------|--------|-----------|-------|---|------|----------|-----|-----|-------|
| | Result | Qualifier | | Result | Qualifier | | | | Limits | RPD | | |
| Arsenic | 1.3 | ^ | 4.73 | 6.42 | ^ | mg/Kg | | 108 | 75 - 125 | 3 | 20 | |
| Cadmium | <0.47 | | 4.73 | 4.62 | | mg/Kg | | 98 | 75 - 125 | 1 | 20 | |
| Nickel | 5.4 | | 4.73 | 11.2 | | mg/Kg | | 122 | 75 - 125 | 13 | 20 | |
| Lead | 2.7 | | 4.73 | 8.66 | ^ F1 | mg/Kg | | 126 | 75 - 125 | 11 | 20 | |
| Vanadium | 3.6 | | 4.73 | 9.27 | | mg/Kg | | 120 | 75 - 125 | 6 | 20 | |

Lab Sample ID: LCS 400-245737/7-A

Matrix: Solid

Analysis Batch: 246223

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245737

| Analyte | Spike | LCS | LCS | Unit | D | %Rec | %Rec. | |
|----------|-------|-------|-----|------|---|------|----------|-----------|
| | | | | | | | Result | Qualifier |
| Arsenic | 1.00 | 0.988 | | mg/L | | 99 | 80 - 120 | |
| Cadmium | 0.500 | 0.481 | | mg/L | | 96 | 80 - 120 | |
| Nickel | 1.00 | 0.984 | | mg/L | | 98 | 80 - 120 | |
| Lead | 1.00 | 0.974 | | mg/L | | 97 | 80 - 120 | |
| Vanadium | 1.00 | 1.02 | | mg/L | | 102 | 80 - 120 | |

Lab Sample ID: LB 400-245358/1-D

Matrix: Solid

Analysis Batch: 246223

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 245737

| Analyte | LB | LB | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| | Result | Qualifier | | | | | | | |
| Arsenic | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:46 | 1 |
| Cadmium | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:46 | 1 |
| Nickel | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:46 | 1 |
| Lead | <0.0050 | | 0.0050 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:46 | 1 |
| Vanadium | <0.010 | | 0.010 | | mg/L | | 02/06/15 09:30 | 02/10/15 12:46 | 1 |

Lab Sample ID: 400-101456-10 MS

Matrix: Solid

Analysis Batch: 246223

Client Sample ID: SI-01 (0-6)

Prep Type: SPLP West

Prep Batch: 245737

| Analyte | Sample | Sample | Spike | MS | MS | Unit | D | %Rec | %Rec. | |
|----------|---------|-----------|-------|--------|-----------|------|---|------|----------|-----|
| | Result | Qualifier | | Result | Qualifier | | | | Limits | RPD |
| Arsenic | <0.0050 | ^ | 0.200 | 0.195 | | mg/L | | 97 | 75 - 125 | |
| Cadmium | <0.0050 | | 0.200 | 0.191 | | mg/L | | 95 | 75 - 125 | |
| Nickel | <0.0050 | | 0.200 | 0.195 | | mg/L | | 97 | 75 - 125 | |
| Lead | <0.0050 | | 0.200 | 0.194 | | mg/L | | 97 | 75 - 125 | |
| Vanadium | <0.010 | | 0.200 | 0.207 | | mg/L | | 101 | 75 - 125 | |

Lab Sample ID: 400-101456-10 MSD

Matrix: Solid

Analysis Batch: 246223

Client Sample ID: SI-01 (0-6)

Prep Type: SPLP West

Prep Batch: 245737

| Analyte | Sample | Sample | Spike | MSD | MSD | Unit | D | %Rec | %Rec. | | RPD | Limit |
|----------|---------|-----------|-------|--------|-----------|------|---|------|----------|-----|-----|-------|
| | Result | Qualifier | | Result | Qualifier | | | | Limits | RPD | | |
| Arsenic | <0.0050 | ^ | 0.200 | 0.190 | | mg/L | | 95 | 75 - 125 | 3 | 20 | |
| Cadmium | <0.0050 | | 0.200 | 0.186 | | mg/L | | 93 | 75 - 125 | 3 | 20 | |
| Nickel | <0.0050 | | 0.200 | 0.190 | | mg/L | | 95 | 75 - 125 | 3 | 20 | |
| Lead | <0.0050 | | 0.200 | 0.190 | | mg/L | | 95 | 75 - 125 | 2 | 20 | |
| Vanadium | <0.010 | | 0.200 | 0.202 | | mg/L | | 99 | 75 - 125 | 2 | 20 | |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LCS 400-245606/14-A
Matrix: Solid
Analysis Batch: 245814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245606

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Mercury | 0.00806 | 0.00684 | | mg/L | | 85 | 80 - 120 |

Lab Sample ID: LB 400-245358/1-B
Matrix: Solid
Analysis Batch: 245814

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 245606

| Analyte | LB Result | LB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|-----------|--------------|--------|-----|------|---|----------------|----------------|---------|
| Mercury | <0.0016 | | 0.0016 | | mg/L | | 02/05/15 09:59 | 02/06/15 14:36 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 400-246161/14-A
Matrix: Solid
Analysis Batch: 246347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 246161

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|-----------|--------------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.013 | | 0.013 | | mg/Kg | | 02/10/15 12:35 | 02/11/15 12:20 | 1 |

Lab Sample ID: LCS 400-246161/15-A
Matrix: Solid
Analysis Batch: 246347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 246161

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|-------|---|------|--------------|
| Mercury | 0.0640 | 0.0669 | | mg/Kg | | 104 | 80 - 120 |

Lab Sample ID: 400-101456-7 MS
Matrix: Solid
Analysis Batch: 246347

Client Sample ID: LH-03 (0-6)
Prep Type: Total/NA
Prep Batch: 246161

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|---------------|------------------|-------------|-----------|--------------|-------|---|------|--------------|
| Mercury | <0.016 | | 0.154 | 0.157 | | mg/Kg | | 102 | 80 - 120 |

Lab Sample ID: 400-101456-7 MSD
Matrix: Solid
Analysis Batch: 246347

Client Sample ID: LH-03 (0-6)
Prep Type: Total/NA
Prep Batch: 246161

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|-------|---|------|--------------|-----|-----------|
| Mercury | <0.016 | | 0.151 | 0.146 | | mg/Kg | | 97 | 80 - 120 | 7 | 20 |

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

GC/MS Semi VOA

Leach Batch: 245358

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| 400-101456-3 | LH-17 (0-6) | SPLP West | Solid | 1312 | |
| 400-101456-10 | SI-01 (0-6) | SPLP West | Solid | 1312 | |
| 400-101456-10 MS | SI-01 (0-6) | SPLP West | Solid | 1312 | |
| 400-101456-10 MSD | SI-01 (0-6) | SPLP West | Solid | 1312 | |
| LB 400-245358/1-C | Method Blank | SPLP West | Solid | 1312 | |

Prep Batch: 245524

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-1 | LH-18 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-1 MS | LH-18 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-1 MSD | LH-18 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-2 | LH-13 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-3 | LH-17 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-4 | LH-16 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-5 | LH-15 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-6 | LH-04 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-7 | LH-03 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-8 | LH-05 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-9 | LH-08 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-10 | SI-01 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-11 | SI-03 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-12 | DUP-1 | Total/NA | Solid | 3546 | |
| 400-101456-13 | SI-05 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-14 | SI-07 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-15 | SI-09 (0-6) | Total/NA | Solid | 3546 | |
| 400-101456-16 | DUP-2 | Total/NA | Solid | 3546 | |
| LCS 400-245524/2-A | Lab Control Sample | Total/NA | Solid | 3546 | |
| MB 400-245524/1-A | Method Blank | Total/NA | Solid | 3546 | |

Analysis Batch: 245705

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|----------|------------|
| 400-101456-1 | LH-18 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-1 MS | LH-18 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-1 MSD | LH-18 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-2 | LH-13 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| LCS 400-245524/2-A | Lab Control Sample | Total/NA | Solid | 8270D LL | 245524 |
| MB 400-245524/1-A | Method Blank | Total/NA | Solid | 8270D LL | 245524 |

Prep Batch: 245718

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 400-101456-3 | LH-17 (0-6) | SPLP West | Solid | 3520C | 245358 |
| 400-101456-10 | SI-01 (0-6) | SPLP West | Solid | 3520C | 245358 |
| 400-101456-10 MS | SI-01 (0-6) | SPLP West | Solid | 3520C | 245358 |
| 400-101456-10 MSD | SI-01 (0-6) | SPLP West | Solid | 3520C | 245358 |
| LB 400-245358/1-C | Method Blank | SPLP West | Solid | 3520C | 245358 |
| LCS 400-245718/2-A | Lab Control Sample | Total/NA | Solid | 3520C | |
| LCSD 400-245718/3-A | Lab Control Sample Dup | Total/NA | Solid | 3520C | |

Analysis Batch: 245918

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|----------|------------|
| 400-101456-3 | LH-17 (0-6) | SPLP West | Solid | 8270D LL | 245718 |

TestAmerica Pensacola

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

GC/MS Semi VOA (Continued)

Analysis Batch: 245918 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|----------|------------|
| 400-101456-10 | SI-01 (0-6) | SPLP West | Solid | 8270D LL | 245718 |
| 400-101456-10 MS | SI-01 (0-6) | SPLP West | Solid | 8270D LL | 245718 |
| 400-101456-10 MSD | SI-01 (0-6) | SPLP West | Solid | 8270D LL | 245718 |
| LB 400-245358/1-C | Method Blank | SPLP West | Solid | 8270D LL | 245718 |
| LCS 400-245718/2-A | Lab Control Sample | Total/NA | Solid | 8270D LL | 245718 |
| LCSD 400-245718/3-A | Lab Control Sample Dup | Total/NA | Solid | 8270D LL | 245718 |

Analysis Batch: 245921

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|----------|------------|
| 400-101456-3 | LH-17 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-5 | LH-15 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-6 | LH-04 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-7 | LH-03 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-8 | LH-05 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-9 | LH-08 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-10 | SI-01 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-11 | SI-03 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-12 | DUP-1 | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-13 | SI-05 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-14 | SI-07 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-15 | SI-09 (0-6) | Total/NA | Solid | 8270D LL | 245524 |
| 400-101456-16 | DUP-2 | Total/NA | Solid | 8270D LL | 245524 |

Analysis Batch: 246098

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|----------|------------|
| 400-101456-4 | LH-16 (0-6) | Total/NA | Solid | 8270D LL | 245524 |

Metals

Leach Batch: 245358

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| 400-101456-3 | LH-17 (0-6) | SPLP West | Solid | 1312 | |
| 400-101456-10 | SI-01 (0-6) | SPLP West | Solid | 1312 | |
| 400-101456-10 MS | SI-01 (0-6) | SPLP West | Solid | 1312 | |
| 400-101456-10 MSD | SI-01 (0-6) | SPLP West | Solid | 1312 | |
| LB 400-245358/1-B | Method Blank | SPLP West | Solid | 1312 | |
| LB 400-245358/1-D | Method Blank | SPLP West | Solid | 1312 | |

Prep Batch: 245442

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|------------------|-----------|--------|--------|------------|
| 400-101456-1 | LH-18 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-1 MS | LH-18 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-1 MSD | LH-18 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-2 | LH-13 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-3 | LH-17 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-4 | LH-16 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-5 | LH-15 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-6 | LH-04 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-7 | LH-03 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-8 | LH-05 (0-6) | Total/NA | Solid | 3050B | |

TestAmerica Pensacola

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Metals (Continued)

Prep Batch: 245442 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-9 | LH-08 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-10 | SI-01 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-11 | SI-03 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-12 | DUP-1 | Total/NA | Solid | 3050B | |
| 400-101456-13 | SI-05 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-14 | SI-07 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-15 | SI-09 (0-6) | Total/NA | Solid | 3050B | |
| 400-101456-16 | DUP-2 | Total/NA | Solid | 3050B | |
| LCS 400-245442/2-A | Lab Control Sample | Total/NA | Solid | 3050B | |
| MB 400-245442/1-A | Method Blank | Total/NA | Solid | 3050B | |

Prep Batch: 245606

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-3 | LH-17 (0-6) | SPLP West | Solid | 7470A | 245358 |
| 400-101456-10 | SI-01 (0-6) | SPLP West | Solid | 7470A | 245358 |
| LB 400-245358/1-B | Method Blank | SPLP West | Solid | 7470A | 245358 |
| LCS 400-245606/14-A | Lab Control Sample | Total/NA | Solid | 7470A | |

Prep Batch: 245737

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-3 | LH-17 (0-6) | SPLP West | Solid | 3010A | 245358 |
| 400-101456-10 | SI-01 (0-6) | SPLP West | Solid | 3010A | 245358 |
| 400-101456-10 MS | SI-01 (0-6) | SPLP West | Solid | 3010A | 245358 |
| 400-101456-10 MSD | SI-01 (0-6) | SPLP West | Solid | 3010A | 245358 |
| LB 400-245358/1-D | Method Blank | SPLP West | Solid | 3010A | 245358 |
| LCS 400-245737/7-A | Lab Control Sample | Total/NA | Solid | 3010A | |

Analysis Batch: 245814

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-3 | LH-17 (0-6) | SPLP West | Solid | 7470A | 245606 |
| 400-101456-10 | SI-01 (0-6) | SPLP West | Solid | 7470A | 245606 |
| LB 400-245358/1-B | Method Blank | SPLP West | Solid | 7470A | 245606 |
| LCS 400-245606/14-A | Lab Control Sample | Total/NA | Solid | 7470A | 245606 |

Prep Batch: 246161

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|------------------|-----------|--------|--------|------------|
| 400-101456-1 | LH-18 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-2 | LH-13 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-3 | LH-17 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-4 | LH-16 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-5 | LH-15 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-6 | LH-04 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-7 | LH-03 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-7 MS | LH-03 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-7 MSD | LH-03 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-8 | LH-05 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-9 | LH-08 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-10 | SI-01 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-11 | SI-03 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-12 | DUP-1 | Total/NA | Solid | 7471B | |
| 400-101456-13 | SI-05 (0-6) | Total/NA | Solid | 7471B | |

TestAmerica Pensacola

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Metals (Continued)

Prep Batch: 246161 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-14 | SI-07 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-15 | SI-09 (0-6) | Total/NA | Solid | 7471B | |
| 400-101456-16 | DUP-2 | Total/NA | Solid | 7471B | |
| LCS 400-246161/15-A | Lab Control Sample | Total/NA | Solid | 7471B | |
| MB 400-246161/14-A | Method Blank | Total/NA | Solid | 7471B | |

Analysis Batch: 246223

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-3 | LH-17 (0-6) | SPLP West | Solid | 6010C | 245737 |
| 400-101456-10 | SI-01 (0-6) | SPLP West | Solid | 6010C | 245737 |
| 400-101456-10 MS | SI-01 (0-6) | SPLP West | Solid | 6010C | 245737 |
| 400-101456-10 MSD | SI-01 (0-6) | SPLP West | Solid | 6010C | 245737 |
| LB 400-245358/1-D | Method Blank | SPLP West | Solid | 6010C | 245737 |
| LCS 400-245737/7-A | Lab Control Sample | Total/NA | Solid | 6010C | 245737 |

Analysis Batch: 246251

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-1 | LH-18 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-1 MS | LH-18 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-1 MSD | LH-18 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-2 | LH-13 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-3 | LH-17 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-4 | LH-16 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-5 | LH-15 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-6 | LH-04 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-7 | LH-03 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-8 | LH-05 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-9 | LH-08 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-10 | SI-01 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-11 | SI-03 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-12 | DUP-1 | Total/NA | Solid | 6010C | 245442 |
| 400-101456-13 | SI-05 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-14 | SI-07 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-15 | SI-09 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-16 | DUP-2 | Total/NA | Solid | 6010C | 245442 |
| LCS 400-245442/2-A | Lab Control Sample | Total/NA | Solid | 6010C | 245442 |
| MB 400-245442/1-A | Method Blank | Total/NA | Solid | 6010C | 245442 |

Analysis Batch: 246347

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|------------------|-----------|--------|--------|------------|
| 400-101456-1 | LH-18 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-2 | LH-13 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-3 | LH-17 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-4 | LH-16 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-5 | LH-15 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-6 | LH-04 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-7 | LH-03 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-7 MS | LH-03 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-7 MSD | LH-03 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-8 | LH-05 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-9 | LH-08 (0-6) | Total/NA | Solid | 7471B | 246161 |

TestAmerica Pensacola

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Metals (Continued)

Analysis Batch: 246347 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|--------------------|-----------|--------|--------|------------|
| 400-101456-10 | SI-01 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-11 | SI-03 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-12 | DUP-1 | Total/NA | Solid | 7471B | 246161 |
| 400-101456-13 | SI-05 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-14 | SI-07 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-15 | SI-09 (0-6) | Total/NA | Solid | 7471B | 246161 |
| 400-101456-16 | DUP-2 | Total/NA | Solid | 7471B | 246161 |
| LCS 400-246161/15-A | Lab Control Sample | Total/NA | Solid | 7471B | 246161 |
| MB 400-246161/14-A | Method Blank | Total/NA | Solid | 7471B | 246161 |

Analysis Batch: 246601

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 400-101456-1 | LH-18 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-2 | LH-13 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-3 | LH-17 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-4 | LH-16 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-5 | LH-15 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-6 | LH-04 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-7 | LH-03 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-8 | LH-05 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-9 | LH-08 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-10 | SI-01 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-11 | SI-03 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-12 | DUP-1 | Total/NA | Solid | 6010C | 245442 |
| 400-101456-13 | SI-05 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-14 | SI-07 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-15 | SI-09 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101456-16 | DUP-2 | Total/NA | Solid | 6010C | 245442 |

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-18 (0-6)

Lab Sample ID: 400-101456-1

Date Collected: 01/26/15 09:55

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245705 | 02/06/15 21:13 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 18:53 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 17:24 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:23 | JAP | TAL PEN |

Client Sample ID: LH-13 (0-6)

Lab Sample ID: 400-101456-2

Date Collected: 01/26/15 10:45

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245705 | 02/06/15 21:48 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:20 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 17:27 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:24 | JAP | TAL PEN |

Client Sample ID: LH-17 (0-6)

Lab Sample ID: 400-101456-3

Date Collected: 01/26/15 11:20

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| SPLP West | Leach | 1312 | | | 245358 | 02/03/15 14:56 | DAS | TAL PEN |
| SPLP West | Prep | 3520C | | | 245718 | 02/06/15 08:47 | KH1 | TAL PEN |
| SPLP West | Analysis | 8270D LL | | 1 | 245918 | 02/09/15 19:40 | CEP | TAL PEN |
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 13:17 | CEP | TAL PEN |
| SPLP West | Leach | 1312 | | | 245358 | 02/03/15 14:56 | DAS | TAL PEN |
| SPLP West | Prep | 3010A | | | 245737 | 02/06/15 09:30 | DN1 | TAL PEN |
| SPLP West | Analysis | 6010C | | 1 | 246223 | 02/10/15 12:17 | SLM | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:23 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 17:31 | SLM | TAL PEN |
| SPLP West | Leach | 1312 | | | 245358 | 02/03/15 14:56 | DAS | TAL PEN |
| SPLP West | Prep | 7470A | | | 245606 | 02/05/15 09:59 | JAP | TAL PEN |
| SPLP West | Analysis | 7470A | | 1 | 245814 | 02/06/15 14:38 | JAP | TAL PEN |

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-17 (0-6)

Lab Sample ID: 400-101456-3

Date Collected: 01/26/15 11:20

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:25 | JAP | TAL PEN |

Client Sample ID: LH-16 (0-6)

Lab Sample ID: 400-101456-4

Date Collected: 01/26/15 12:40

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 246098 | 02/10/15 15:56 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:26 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 17:34 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:27 | JAP | TAL PEN |

Client Sample ID: LH-15 (0-6)

Lab Sample ID: 400-101456-5

Date Collected: 01/26/15 13:55

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 14:21 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:29 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 17:37 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:28 | JAP | TAL PEN |

Client Sample ID: LH-04 (0-6)

Lab Sample ID: 400-101456-6

Date Collected: 01/27/15 08:30

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 14:53 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:33 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 17:51 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |

TestAmerica Pensacola

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: LH-04 (0-6)

Lab Sample ID: 400-101456-6

Date Collected: 01/27/15 08:30

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:29 | JAP | TAL PEN |

Client Sample ID: LH-03 (0-6)

Lab Sample ID: 400-101456-7

Date Collected: 01/27/15 10:30

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 15:26 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:36 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 17:54 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:30 | JAP | TAL PEN |

Client Sample ID: LH-05 (0-6)

Lab Sample ID: 400-101456-8

Date Collected: 01/27/15 11:30

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 15:58 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:49 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 17:57 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:45 | JAP | TAL PEN |

Client Sample ID: LH-08 (0-6)

Lab Sample ID: 400-101456-9

Date Collected: 01/27/15 13:15

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 16:30 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:53 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 18:00 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:47 | JAP | TAL PEN |

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: SI-01 (0-6)

Lab Sample ID: 400-101456-10

Date Collected: 01/28/15 09:40

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| SPLP West | Leach | 1312 | | | 245358 | 02/03/15 14:56 | DAS | TAL PEN |
| SPLP West | Prep | 3520C | | | 245718 | 02/06/15 08:47 | KH1 | TAL PEN |
| SPLP West | Analysis | 8270D LL | | 1 | 245918 | 02/09/15 19:05 | CEP | TAL PEN |
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 17:03 | CEP | TAL PEN |
| SPLP West | Leach | 1312 | | | 245358 | 02/03/15 14:56 | DAS | TAL PEN |
| SPLP West | Prep | 3010A | | | 245737 | 02/06/15 09:30 | DN1 | TAL PEN |
| SPLP West | Analysis | 6010C | | 1 | 246223 | 02/10/15 12:20 | SLM | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:56 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 18:04 | SLM | TAL PEN |
| SPLP West | Leach | 1312 | | | 245358 | 02/03/15 14:56 | DAS | TAL PEN |
| SPLP West | Prep | 7470A | | | 245606 | 02/05/15 09:59 | JAP | TAL PEN |
| SPLP West | Analysis | 7470A | | 1 | 245814 | 02/06/15 14:48 | JAP | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:48 | JAP | TAL PEN |

Client Sample ID: SI-03 (0-6)

Lab Sample ID: 400-101456-11

Date Collected: 01/28/15 10:30

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 17:35 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 19:59 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 18:07 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:50 | JAP | TAL PEN |

Client Sample ID: DUP-1

Lab Sample ID: 400-101456-12

Date Collected: 01/28/15 00:00

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 18:07 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 20:03 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 18:10 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |

TestAmerica Pensacola

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: DUP-1

Lab Sample ID: 400-101456-12

Date Collected: 01/28/15 00:00

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:51 | JAP | TAL PEN |

Client Sample ID: SI-05 (0-6)

Lab Sample ID: 400-101456-13

Date Collected: 01/29/15 10:25

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 18:40 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 20:06 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 18:14 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:52 | JAP | TAL PEN |

Client Sample ID: SI-07 (0-6)

Lab Sample ID: 400-101456-14

Date Collected: 01/29/15 11:05

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 19:12 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 20:09 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 18:17 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:53 | JAP | TAL PEN |

Client Sample ID: SI-09 (0-6)

Lab Sample ID: 400-101456-15

Date Collected: 01/29/15 12:00

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 19:44 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 20:13 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 18:20 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 12:54 | JAP | TAL PEN |

TestAmerica Pensacola

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Client Sample ID: DUP-2

Lab Sample ID: 400-101456-16

Date Collected: 01/29/15 00:00

Matrix: Solid

Date Received: 01/31/15 11:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245524 | 02/04/15 16:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 20:16 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 20:16 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246601 | 02/12/15 18:34 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246161 | 02/10/15 12:35 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246347 | 02/11/15 13:03 | JAP | TAL PEN |

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



Certification Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

Laboratory: TestAmerica Pensacola

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|-----------|---------|------------|------------------|-----------------|
| Louisiana | NELAP | 6 | 30976 | 06-30-15 |

The following analytes are included in this report, but certification is not offered by the governing authority:

| Analysis Method | Prep Method | Matrix | Analyte |
|-----------------|-------------|--------|---------|
| 7470A | 7470A | Solid | Mercury |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
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- 9
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- 12
- 13
- 14

Method Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101456-1

| Method | Method Description | Protocol | Laboratory |
|----------|---|----------|------------|
| 8270D LL | Semivolatile Organic Compounds by GC/MS - Low Level | SW846 | TAL PEN |
| 6010C | Metals (ICP) | SW846 | TAL PEN |
| 7470A | Mercury (CVAA) | SW846 | TAL PEN |
| 7471B | Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) | SW846 | TAL PEN |

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



TestAmerica Baton Rouge
 6113 Benefit Drive
 Baton Rouge, LA 70809-4247
 Phone (225) 755-8200 Fax (225) 755-3080

Chain of Custody Record

TestAmerica
 10000 W. Lakeshore Blvd., Suite 100
 Houston, TX 77043

Client Information
 Company: CB&I Environmental & Infrastructure, Inc.
 Address: 4171 Essen Lane
 City: Baton Rouge
 State: La
 LA 70809
 Phone:
 Email: barry.hebert@CBI.com
 Project Name: CPRA Coal Study
 Site:

Client Contact
 Barry Hebert
 Phone:
 Email: mark.swafford@testamericainc.com

Lab P/N: Swafford, Mark H
Ex-Nr:

Company Tracking Notes:
 COC No: 400-42446-21072.1
 Page: Page 1 of 2
 Job #:

Analysis Requested
 400-101456 COC

Due Date Requested:
 TAT Requested (days):
 PO #:
 Purchase Order not required
 MO #:
 Project #:
 40005149
 SSO#:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (Inorganic, Organic, Other) | Field Filtered Sample (Yes or No) | | Total Number of Containers | | Special Instructions/Note: |
|-----------------------|-------------|-------------|------------------------------|------------------------------------|-----------------------------------|----|----------------------------|----|----------------------------|
| | | | | | Yes | No | Yes | No | |
| LH-18(0-6) | 12/15/15 | 8:55 | C | Solid | X | | X | | |
| LH-13(0-6) | 12/15/15 | 10:45 | C | Solid | X | | X | | |
| LH-17(0-6) | 12/15/15 | 11:20 | C | Solid | X | | X | | |
| LH-16(0-6) | 12/15/15 | 12:40 | C | Solid | X | | X | | |
| LH-15(0-6) | 12/15/15 | 13:55 | C | Solid | X | | X | | |
| LH-03(0-6) | 12/15/15 | 08:30 | C | Solid | X | | X | | |
| LH-05(0-6) | 12/15/15 | 10:30 | C | Solid | X | | X | | |
| LH-08(0-6) | 12/15/15 | 11:30 | C | Solid | X | | X | | |
| SI-01(0-6) | 12/15/15 | 09:40 | C | Solid | X | | X | | |
| SI-03(0-6) | 12/15/15 | 10:30 | C | Solid | X | | X | | |

Preservation Codes:
 A - HCL
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NaHSO4
 F - MeOH
 G - Anchlor
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDA
 M - Hexane
 N - None
 O - AsH2O2
 P - Na2O4S
 Q - Na2SO3
 R - Na2S2O3
 S - H2SO4
 T - TSP Dodecylsulfate
 U - Acetone
 V - MCAA
 W - pH 4.5
 X - other (specify)
 Z - other (specify)
 Other:

Special Instructions/Note:
 6010C - Arsenic, Cadmium, Lead, Nickel, Vanadium/Flg
 8270D - LL - Low Level PAHs by 8270
 8270M - MS/MSD (Yes or No)
 Field Filtered Sample (Yes or No)

Sample Disposal: (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client
 Disposal By Lab
 Archive For _____ Months

Method of Shipment:
 Date/Time: 1/30/15 12:25
 Date/Time: 1/30/15 08:10
 Date/Time: 1/31/15 11:00
 Company: TA
 Company: TA
 Company: TA

Received by: C. Agut
Received by: C. Agut
Received by: C. Agut
 Cooler Temperature(s) °C and Other Remarks: 4.7°C / 2.0°C JRC

Chain of Custody Record

Client Information
 Company: CB&I Environmental & Infrastructure, Inc.
 Address: 4171 Essen Lane
 City: Baton Rouge
 State Zip: LA, 70809
 Phone:
 Email: barry.hebert@cbi.com
 Project Name: CPRA Coal Study
 Site:

Specimen Information
 Sample ID: 122515
 Phone:
 Lab Pk: Swafford, Mark H
 E-Mail: mark.swafford@testamericainc.com

Analysis Requested
 Due Date Requested:
 TAT Requested (days):
 PO# Purchase Order not required
 WO#:
 Project #: 40005149
 SSC#:

Sample Identification

| Sample ID | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, G=grab) | Preservation Code | Field Filtered Sample (Yes or No) | Periton MS/MSD (Yes or No) | 60100 - Arsenic, Cadmium, Lead, Nickel, Vanadium/Hg | 82700 - LL - Low Level PAHs by 8270 | Total Number of Containers | Special Instructions/Note |
|------------|-------------|-------------|------------------------------|-----------------------------------|-------------------|-----------------------------------|----------------------------|---|-------------------------------------|----------------------------|---------------------------|
| DUP-1 | 11/28/15 | | C | Solid | | X | X | | | | |
| SI-SS(S-6) | 12/9/15 | 1625 | C | Solid | | X | X | | | | |
| SI-07(S-6) | 12/9/15 | 1105 | C | Solid | | X | X | | | | |
| SI-59(S-6) | 12/21/15 | 1200 | C | Solid | | X | X | | | | |
| DUP-2 | 12/21/15 | | C | Solid | | X | X | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |

Preservation Codes:
 A - HCL
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NaHSO4
 F - MeOH
 G - Amchlor
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDA
 Other:

Preservation Codes:
 M - Hexane
 N - None
 O - AsNO2
 P - Na2OAS
 Q - Na2SO3
 R - Na2S2O3
 S - H2SO4
 T - TSP Dodecylhydrate
 U - Acetone
 V - MCAA
 W - ph 4-5
 X - EDTA
 Z - other (specify)

Special Instructions/Note:

Sample Disposal: (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client
 Disposal By Lab
 Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Empty Kit Relinquished by: _____
 Relinquished by: _____
 Relinquished by: _____
 Relinquished by: _____

Received by: _____
 Received by: _____
 Received by: _____
 Received by: _____

Date: 11/30/15 12:25
 Date/Time: 11/30/15 1005
 Date/Time: 1/30/15 2:10P
 Date/Time: 1-31-15 1100

Company: CB&I
 Company: CB&I
 Company: TR
 Company: TR

Cooler Temperature(s): °C and Other Remarks:

Custody Seal Intact: Yes No

Login Sample Receipt Checklist

Client: CB&I Environmental & Infrastructure, Inc

Job Number: 400-101456-1

Login Number: 101456

List Source: TestAmerica Pensacola

List Number: 1

Creator: Akers, Stephanie C

| Question | Answer | Comment |
|--|--------|--------------------|
| Radioactivity wasn't checked or is <=/ background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 4.7°C, 2.0°C, IR-6 |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-101492-1
Client Project/Site: CPRA Coal Study

For:
CB&I Environmental & Infrastructure, Inc
PO BOX 98519
Baton Rouge, Louisiana 70884

Attn: Accounts Payable

Mark Swafford

Authorized for release by:
2/18/2015 2:53:35 PM

Mark Swafford, Project Manager I
(850)474-1001
mark.swafford@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Qualifiers

GC/MS Semi VOA

| Qualifier | Qualifier Description |
|-----------|-------------------------------------|
| X | Surrogate is outside control limits |

Metals

| Qualifier | Qualifier Description |
|-----------|---|
| ^ | ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits. |
| F1 | MS and/or MSD Recovery exceeds the control limits |
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |

Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|----------------|---|
| α | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

Case Narrative

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Job ID: 400-101492-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-101492-1

Comments

No additional comments.

Receipt

The samples were received on 2/3/2015 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

GC/MS Semi VOA

Method 8270D LL: Surrogate recovery for the following samples was outside control limits: BD-07 (0-6) (400-101492-4), BD-01 (0-6) (400-101492-6), BD-13 (0-6) (400-101492-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010C: The low level check standard recovery associated with batch 400-246251 is high and outside the acceptance criteria for the following analyte: Arsenic

The data are reported because the MB result is non-detect and the LCS is > 10X the RL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-10 (0-6)

Lab Sample ID: 400-101492-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.013 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[b]fluoranthene | 0.0079 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Chrysene | 0.0083 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.018 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.020 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.014 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.7 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 6.6 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 4.3 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 5.5 | | 0.96 | | mg/Kg | 1 | | 6010C | Total/NA |
| Mercury | 0.030 | | 0.015 | | mg/Kg | 1 | | 7471B | Total/NA |

Client Sample ID: BD-09 (0-6)

Lab Sample ID: 400-101492-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Fluoranthene | 0.010 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.0079 | | 0.0066 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.1 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 5.4 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 3.7 | | 0.46 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 3.9 | | 0.92 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: BD-03 (0-6)

Lab Sample ID: 400-101492-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Fluoranthene | 0.022 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.017 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.012 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.2 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 4.5 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 3.7 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.9 | | 0.97 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: BD-07 (0-6)

Lab Sample ID: 400-101492-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Fluoranthene | 0.013 | | 0.0064 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.4 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 4.7 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 4.7 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 5.6 | | 0.95 | | mg/Kg | 1 | | 6010C | Total/NA |
| Mercury | 0.020 | | 0.016 | | mg/Kg | 1 | | 7471B | Total/NA |

Client Sample ID: BD-05 (0-6)

Lab Sample ID: 400-101492-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------|--------|-----------|------|-----|-------|---------|---|--------|-----------|
| Arsenic | 0.70 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 4.0 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 2.0 | | 0.49 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 2.5 | | 0.98 | | mg/Kg | 1 | | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-01 (0-6)

Lab Sample ID: 400-101492-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------|--------|-----------|------|-----|-------|---------|---|--------|-----------|
| Arsenic | 1.2 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 4.6 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 3.7 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 4.1 | | 0.95 | | mg/Kg | 1 | | 6010C | Total/NA |

Client Sample ID: BD-13 (0-6)

Lab Sample ID: 400-101492-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|----------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Benzo[a]pyrene | 0.0096 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.014 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.011 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.015 | | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 1.7 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 4.5 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 3.3 | | 0.48 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 3.1 | | 0.96 | | mg/Kg | 1 | | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Sample Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 400-101492-1 | BD-10 (0-6) | Solid | 01/30/15 09:00 | 02/03/15 08:30 |
| 400-101492-2 | BD-09 (0-6) | Solid | 01/30/15 10:25 | 02/03/15 08:30 |
| 400-101492-3 | BD-03 (0-6) | Solid | 01/30/15 01:05 | 02/03/15 08:30 |
| 400-101492-4 | BD-07 (0-6) | Solid | 01/31/15 10:10 | 02/03/15 08:30 |
| 400-101492-5 | BD-05 (0-6) | Solid | 01/31/15 11:00 | 02/03/15 08:30 |
| 400-101492-6 | BD-01 (0-6) | Solid | 01/31/15 02:00 | 02/03/15 08:30 |
| 400-101492-7 | BD-13 (0-6) | Solid | 02/01/15 11:30 | 02/03/15 08:30 |



Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-10 (0-6)

Lab Sample ID: 400-101492-1

Date Collected: 01/30/15 09:00

Matrix: Solid

Date Received: 02/03/15 08:30

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Acenaphthylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Benzo[a]pyrene | 0.013 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Benzo[b]fluoranthene | 0.0079 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Benzo[g,h,i]perylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Benzo[k]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Chrysene | 0.0083 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Dibenz(a,h)anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Fluoranthene | 0.018 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Fluorene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| 1-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| 2-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Naphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Phenanthrene | 0.020 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Pyrene | 0.014 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Benzo[a]anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 61 | | 27 - 127 | | | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Nitrobenzene-d5 (Surr) | 37 | | 15 - 136 | | | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |
| Terphenyl-d14 (Surr) | 63 | | 24 - 146 | | | | 02/05/15 17:04 | 02/09/15 20:48 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.7 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:19 | 1 |
| Cadmium | <0.48 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:19 | 1 |
| Nickel | 6.6 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:19 | 1 |
| Lead | 4.3 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 20:25 | 1 |
| Vanadium | 5.5 | | 0.96 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:19 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------------|--------------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | 0.030 | | 0.015 | | mg/Kg | | 02/11/15 09:56 | 02/12/15 15:36 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-09 (0-6)

Lab Sample ID: 400-101492-2

Date Collected: 01/30/15 10:25

Matrix: Solid

Date Received: 02/03/15 08:30

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Benzo[a]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Fluoranthene | 0.010 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Pyrene | 0.0079 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 44 | | 27 - 127 | | | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Nitrobenzene-d5 (Surr) | 33 | | 15 - 136 | | | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |
| Terphenyl-d14 (Surr) | 48 | | 24 - 146 | | | | 02/05/15 17:04 | 02/09/15 21:20 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.1 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 20:28 | 1 |
| Cadmium | <0.46 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:33 | 1 |
| Nickel | 5.4 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:33 | 1 |
| Lead | 3.7 | | 0.46 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 20:28 | 1 |
| Vanadium | 3.9 | | 0.92 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:33 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/11/15 09:56 | 02/12/15 15:38 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-03 (0-6)

Lab Sample ID: 400-101492-3

Date Collected: 01/30/15 01:05

Matrix: Solid

Date Received: 02/03/15 08:30

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|--------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Acenaphthylene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Anthracene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Benzo[a]pyrene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Benzo[b]fluoranthene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Benzo[g,h,i]perylene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Benzo[k]fluoranthene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Chrysene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Dibenz(a,h)anthracene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Fluoranthene | 0.022 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Fluorene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| 1-Methylnaphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| 2-Methylnaphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Naphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Phenanthrene | 0.017 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Pyrene | 0.012 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Benzo[a]anthracene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 62 | | 27 - 127 | | | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Nitrobenzene-d5 (Surr) | 55 | | 15 - 136 | | | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |
| Terphenyl-d14 (Surr) | 63 | | 24 - 146 | | | | 02/05/15 17:04 | 02/10/15 16:28 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.2 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 20:31 | 1 |
| Cadmium | <0.48 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:36 | 1 |
| Nickel | 4.5 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:36 | 1 |
| Lead | 3.7 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 20:31 | 1 |
| Vanadium | 4.9 | | 0.97 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 20:36 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/11/15 09:56 | 02/12/15 15:40 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-07 (0-6)

Lab Sample ID: 400-101492-4

Date Collected: 01/31/15 10:10

Matrix: Solid

Date Received: 02/03/15 08:30

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|--------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Acenaphthylene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Anthracene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Benzo[a]pyrene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Benzo[b]fluoranthene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Benzo[g,h,i]perylene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Benzo[k]fluoranthene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Chrysene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Dibenz(a,h)anthracene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Fluoranthene | 0.013 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Fluorene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| 1-Methylnaphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| 2-Methylnaphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Naphthalene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Phenanthrene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Pyrene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Benzo[a]anthracene | <0.0064 | | 0.0064 | | mg/Kg | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 60 | | 27 - 127 | | | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Nitrobenzene-d5 (Surr) | 823 | X | 15 - 136 | | | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |
| Terphenyl-d14 (Surr) | 62 | | 24 - 146 | | | | 02/05/15 17:04 | 02/09/15 22:25 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.4 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:41 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:41 | 1 |
| Nickel | 4.7 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:41 | 1 |
| Lead | 4.7 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:41 | 1 |
| Vanadium | 5.6 | | 0.95 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:41 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------------|--------------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | 0.020 | | 0.016 | | mg/Kg | | 02/11/15 09:56 | 02/12/15 15:41 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-05 (0-6)

Lab Sample ID: 400-101492-5

Date Collected: 01/31/15 11:00

Matrix: Solid

Date Received: 02/03/15 08:30

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Benzo[a]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 45 | | 27 - 127 | | | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Nitrobenzene-d5 (Surr) | 42 | | 15 - 136 | | | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |
| Terphenyl-d14 (Surr) | 71 | | 24 - 146 | | | | 02/05/15 17:04 | 02/10/15 17:00 | 1 |

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Acenaphthene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Acenaphthylene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Benzo[a]anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Benzo[a]pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Benzo[b]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Benzo[g,h,i]perylene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Benzo[k]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Chrysene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Dibenz(a,h)anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Fluorene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Naphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Phenanthrene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| 1-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| 2-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Terphenyl-d14 (Surr) | 103 | | 33 - 138 | | | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| 2-Fluorobiphenyl | 87 | | 15 - 122 | | | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |
| Nitrobenzene-d5 (Surr) | 74 | | 19 - 130 | | | | 02/10/15 12:49 | 02/11/15 12:57 | 1 |

TestAmerica Pensacola

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-05 (0-6)

Lab Sample ID: 400-101492-5

Date Collected: 01/31/15 11:00

Matrix: Solid

Date Received: 02/03/15 08:30

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 0.70 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:54 | 1 |
| Cadmium | <0.49 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:54 | 1 |
| Nickel | 4.0 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:54 | 1 |
| Lead | 2.0 | | 0.49 | | mg/Kg | | 02/04/15 13:11 | 02/17/15 15:32 | 1 |
| Vanadium | 2.5 | | 0.98 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:54 | 1 |

Method: 6010C - Metals (ICP) - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| Arsenic | <0.0050 | | 0.0050 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:40 | 1 |
| Cadmium | <0.0050 | | 0.0050 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:40 | 1 |
| Nickel | <0.0050 | | 0.0050 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:40 | 1 |
| Lead | <0.0050 | | 0.0050 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:40 | 1 |
| Vanadium | <0.010 | | 0.010 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:40 | 1 |

Method: 7470A - Mercury (CVAA) - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| Mercury | <0.0016 | | 0.0016 | | mg/L | | 02/11/15 12:56 | 02/12/15 13:16 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/11/15 09:56 | 02/12/15 15:42 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-01 (0-6)

Lab Sample ID: 400-101492-6

Date Collected: 01/31/15 02:00

Matrix: Solid

Date Received: 02/03/15 08:30

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Acenaphthylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Benzo[a]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Benzo[b]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Benzo[g,h,i]perylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Benzo[k]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Chrysene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Dibenz(a,h)anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Fluorene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| 1-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| 2-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Naphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Phenanthrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Benzo[a]anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 71 | | 27 - 127 | | | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Nitrobenzene-d5 (Surr) | 4612 | X | 15 - 136 | | | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |
| Terphenyl-d14 (Surr) | 80 | | 24 - 146 | | | | 02/05/15 17:04 | 02/10/15 17:32 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.2 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:58 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:58 | 1 |
| Nickel | 4.6 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:58 | 1 |
| Lead | 3.7 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/17/15 15:36 | 1 |
| Vanadium | 4.1 | | 0.95 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:58 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/11/15 09:56 | 02/12/15 15:44 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-13 (0-6)

Lab Sample ID: 400-101492-7

Date Collected: 02/01/15 11:30

Matrix: Solid

Date Received: 02/03/15 08:30

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Acenaphthylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Benzo[a]pyrene | 0.0096 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Benzo[b]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Benzo[g,h,i]perylene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Benzo[k]fluoranthene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Chrysene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Dibenz(a,h)anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Fluoranthene | 0.014 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Fluorene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| 1-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| 2-Methylnaphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Naphthalene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Phenanthrene | 0.011 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Pyrene | 0.015 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Benzo[a]anthracene | <0.0065 | | 0.0065 | | mg/Kg | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 57 | | 27 - 127 | | | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Nitrobenzene-d5 (Surr) | 1164 | X | 15 - 136 | | | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |
| Terphenyl-d14 (Surr) | 64 | | 24 - 146 | | | | 02/05/15 17:04 | 02/12/15 08:20 | 1 |

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------------|------------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 1.7 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 23:01 | 1 |
| Cadmium | <0.48 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 23:01 | 1 |
| Nickel | 4.5 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 23:01 | 1 |
| Lead | 3.3 | | 0.48 | | mg/Kg | | 02/04/15 13:11 | 02/17/15 15:39 | 1 |
| Vanadium | 3.1 | | 0.96 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 23:01 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/11/15 09:56 | 02/12/15 15:56 | 1 |

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Lab Sample ID: MB 400-245691/1-A

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245691

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|--------------|--------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Benzo[a]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 02/05/15 17:04 | 02/06/15 15:24 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|--------------|--------------|----------|----------------|----------------|---------|
| 2-Fluorobiphenyl | 71 | | 27 - 127 | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Terphenyl-d14 (Surr) | 84 | | 24 - 146 | 02/05/15 17:04 | 02/06/15 15:24 | 1 |
| Nitrobenzene-d5 (Surr) | 61 | | 15 - 136 | 02/05/15 17:04 | 02/06/15 15:24 | 1 |

Lab Sample ID: LCS 400-245691/2-A

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245691

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|-------|---|------|--------------|
| Acenaphthene | 0.333 | 0.246 | | mg/Kg | | 74 | 59 - 130 |
| Acenaphthylene | 0.333 | 0.244 | | mg/Kg | | 73 | 60 - 130 |
| Anthracene | 0.333 | 0.233 | | mg/Kg | | 70 | 64 - 130 |
| Benzo[a]pyrene | 0.333 | 0.246 | | mg/Kg | | 74 | 56 - 130 |
| Benzo[b]fluoranthene | 0.333 | 0.293 | | mg/Kg | | 88 | 62 - 130 |
| Benzo[g,h,i]perylene | 0.333 | 0.309 | | mg/Kg | | 93 | 39 - 132 |
| Benzo[k]fluoranthene | 0.333 | 0.272 | | mg/Kg | | 81 | 60 - 130 |
| Chrysene | 0.333 | 0.272 | | mg/Kg | | 82 | 65 - 130 |
| Dibenz(a,h)anthracene | 0.333 | 0.302 | | mg/Kg | | 91 | 43 - 133 |
| Fluoranthene | 0.333 | 0.263 | | mg/Kg | | 79 | 61 - 130 |
| Fluorene | 0.333 | 0.274 | | mg/Kg | | 82 | 59 - 130 |
| Indeno[1,2,3-cd]pyrene | 0.333 | 0.303 | | mg/Kg | | 91 | 43 - 131 |
| Naphthalene | 0.333 | 0.230 | | mg/Kg | | 69 | 45 - 130 |
| Phenanthrene | 0.333 | 0.254 | | mg/Kg | | 76 | 63 - 130 |
| 1-Methylnaphthalene | 0.333 | 0.246 | | mg/Kg | | 74 | 56 - 130 |
| Pyrene | 0.333 | 0.279 | | mg/Kg | | 84 | 47 - 135 |
| 2-Methylnaphthalene | 0.333 | 0.237 | | mg/Kg | | 71 | 56 - 130 |
| Benzo[a]anthracene | 0.333 | 0.256 | | mg/Kg | | 77 | 64 - 130 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCS 400-245691/2-A

Matrix: Solid

Analysis Batch: 245705

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245691

| Surrogate | LCS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 74 | | 27 - 127 |
| Terphenyl-d14 (Surr) | 86 | | 24 - 146 |
| Nitrobenzene-d5 (Surr) | 66 | | 15 - 136 |

Lab Sample ID: LCS 400-246080/2-A

Matrix: Solid

Analysis Batch: 246261

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246080

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. | |
|------------------------|-------------|------------|---------------|------|---|------|----------|-----|
| | | | | | | | Limits | RPD |
| Acenaphthene | 0.00500 | 0.00474 | | mg/L | | 95 | 41 - 120 | |
| Acenaphthylene | 0.00500 | 0.00481 | | mg/L | | 96 | 44 - 120 | |
| Anthracene | 0.00500 | 0.00479 | | mg/L | | 96 | 49 - 120 | |
| Benzo[a]pyrene | 0.00500 | 0.00505 | | mg/L | | 101 | 52 - 120 | |
| Benzo[b]fluoranthene | 0.00500 | 0.00537 | | mg/L | | 107 | 53 - 134 | |
| Benzo[g,h,i]perylene | 0.00500 | 0.00470 | | mg/L | | 94 | 47 - 133 | |
| Benzo[k]fluoranthene | 0.00500 | 0.00532 | | mg/L | | 106 | 57 - 134 | |
| Chrysene | 0.00500 | 0.00506 | | mg/L | | 101 | 55 - 122 | |
| Dibenz(a,h)anthracene | 0.00500 | 0.00479 | | mg/L | | 96 | 48 - 146 | |
| Fluoranthene | 0.00500 | 0.00482 | | mg/L | | 96 | 54 - 128 | |
| Fluorene | 0.00500 | 0.00522 | | mg/L | | 104 | 45 - 120 | |
| Indeno[1,2,3-cd]pyrene | 0.00500 | 0.00456 | | mg/L | | 91 | 43 - 142 | |
| Naphthalene | 0.00500 | 0.00460 | | mg/L | | 92 | 39 - 120 | |
| Phenanthrene | 0.00500 | 0.00477 | | mg/L | | 95 | 48 - 120 | |
| 1-Methylnaphthalene | 0.00500 | 0.00456 | | mg/L | | 91 | 41 - 120 | |
| Pyrene | 0.00500 | 0.00520 | | mg/L | | 104 | 48 - 132 | |
| 2-Methylnaphthalene | 0.00500 | 0.00488 | | mg/L | | 98 | 32 - 124 | |
| Benzo[a]anthracene | 0.00500 | 0.00489 | | mg/L | | 98 | 61 - 135 | |

| Surrogate | LCS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 99 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 106 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 86 | | 19 - 130 |

Lab Sample ID: LCSD 400-246080/3-A

Matrix: Solid

Analysis Batch: 246408

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 246080

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. | | RPD | |
|-----------------------|-------------|-------------|----------------|------|---|------|----------|-----|-----|-------|
| | | | | | | | Limits | RPD | RPD | Limit |
| Acenaphthene | 0.00500 | 0.00480 | | mg/L | | 96 | 41 - 120 | 1 | 56 | |
| Acenaphthylene | 0.00500 | 0.00494 | | mg/L | | 99 | 44 - 120 | 3 | 56 | |
| Anthracene | 0.00500 | 0.00487 | | mg/L | | 97 | 49 - 120 | 2 | 51 | |
| Benzo[a]pyrene | 0.00500 | 0.00523 | | mg/L | | 105 | 52 - 120 | 3 | 50 | |
| Benzo[b]fluoranthene | 0.00500 | 0.00568 | | mg/L | | 114 | 53 - 134 | 6 | 54 | |
| Benzo[g,h,i]perylene | 0.00500 | 0.00512 | | mg/L | | 102 | 47 - 133 | 8 | 50 | |
| Benzo[k]fluoranthene | 0.00500 | 0.00546 | | mg/L | | 109 | 57 - 134 | 3 | 52 | |
| Chrysene | 0.00500 | 0.00522 | | mg/L | | 104 | 55 - 122 | 3 | 50 | |
| Dibenz(a,h)anthracene | 0.00500 | 0.00507 | | mg/L | | 101 | 48 - 146 | 6 | 50 | |
| Fluoranthene | 0.00500 | 0.00495 | | mg/L | | 99 | 54 - 128 | 3 | 52 | |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCSD 400-246080/3-A

Matrix: Solid

Analysis Batch: 246408

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 246080

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | | RPD | |
|------------------------|-------------|-------------|----------------|------|---|------|--------------|-------|-----|--|
| | | | | | | | RPD | Limit | | |
| Fluorene | 0.00500 | 0.00532 | | mg/L | | 106 | 45 - 120 | 2 | 56 | |
| Indeno[1,2,3-cd]pyrene | 0.00500 | 0.00485 | | mg/L | | 97 | 43 - 142 | 6 | 51 | |
| Naphthalene | 0.00500 | 0.00467 | | mg/L | | 93 | 39 - 120 | 2 | 56 | |
| Phenanthrene | 0.00500 | 0.00483 | | mg/L | | 97 | 48 - 120 | 1 | 56 | |
| 1-Methylnaphthalene | 0.00500 | 0.00471 | | mg/L | | 94 | 41 - 120 | 3 | 55 | |
| Pyrene | 0.00500 | 0.00532 | | mg/L | | 106 | 48 - 132 | 2 | 52 | |
| 2-Methylnaphthalene | 0.00500 | 0.00502 | | mg/L | | 100 | 32 - 124 | 3 | 57 | |
| Benzo[a]anthracene | 0.00500 | 0.00500 | | mg/L | | 100 | 61 - 135 | 2 | 49 | |

| Surrogate | LCSD LCSD | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 98 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 105 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 86 | | 19 - 130 |

Lab Sample ID: LB 400-246055/1-B

Matrix: Solid

Analysis Batch: 246261

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 246080

| Analyte | LB LB | | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|----------|-----------|---------|-----|------|---|----------------|----------------|---------|
| | Result | Qualifier | | | | | | | |
| Acenaphthene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Acenaphthylene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Benzo[a]pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Benzo[b]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Benzo[g,h,i]perylene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Benzo[k]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Chrysene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Dibenz(a,h)anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Fluorene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Naphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Phenanthrene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| 1-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Pyrene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| 2-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Benzo[a]anthracene | <0.00025 | | 0.00025 | | mg/L | | 02/10/15 12:49 | 02/11/15 09:27 | 1 |

| Surrogate | LB LB | | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|----------------|----------------|---------|
| | %Recovery | Qualifier | | | | |
| 2-Fluorobiphenyl | 93 | | 15 - 122 | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Terphenyl-d14 (Surr) | 111 | | 33 - 138 | 02/10/15 12:49 | 02/11/15 09:27 | 1 |
| Nitrobenzene-d5 (Surr) | 85 | | 19 - 130 | 02/10/15 12:49 | 02/11/15 09:27 | 1 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: 400-101493-A-1-C MS

Matrix: Solid

Analysis Batch: 246261

Client Sample ID: Matrix Spike

Prep Type: SPLP West

Prep Batch: 246080

| Analyte | Sample | Sample Qualifier | Spike Added | MS | | Unit | D | %Rec | %Rec. Limits |
|------------------------|----------|------------------|-------------|---------|-----------|------|---|------|--------------|
| | Result | | | Result | Qualifier | | | | |
| Acenaphthene | <0.00033 | | 0.00833 | 0.00777 | | mg/L | | 93 | 35 - 113 |
| Acenaphthylene | <0.00033 | | 0.00833 | 0.00781 | | mg/L | | 94 | 41 - 118 |
| Anthracene | <0.00033 | | 0.00833 | 0.00771 | | mg/L | | 93 | 45 - 122 |
| Benzo[a]pyrene | <0.00033 | | 0.00833 | 0.00780 | | mg/L | | 90 | 50 - 108 |
| Benzo[b]fluoranthene | 0.00033 | | 0.00833 | 0.00835 | | mg/L | | 96 | 50 - 128 |
| Benzo[g,h,i]perylene | 0.00034 | | 0.00833 | 0.00786 | | mg/L | | 90 | 46 - 133 |
| Benzo[k]fluoranthene | 0.00034 | | 0.00833 | 0.00802 | | mg/L | | 92 | 52 - 128 |
| Chrysene | 0.00033 | | 0.00833 | 0.00764 | | mg/L | | 88 | 52 - 116 |
| Dibenz(a,h)anthracene | <0.00033 | | 0.00833 | 0.00780 | | mg/L | | 94 | 52 - 143 |
| Fluoranthene | <0.00033 | | 0.00833 | 0.00769 | | mg/L | | 90 | 32 - 150 |
| Fluorene | <0.00033 | | 0.00833 | 0.00858 | | mg/L | | 100 | 15 - 150 |
| Indeno[1,2,3-cd]pyrene | 0.00042 | | 0.00833 | 0.00763 | | mg/L | | 87 | 41 - 141 |
| Naphthalene | 0.0026 | | 0.00833 | 0.00984 | | mg/L | | 87 | 10 - 150 |
| Phenanthrene | 0.00033 | | 0.00833 | 0.00811 | | mg/L | | 93 | 36 - 125 |
| 1-Methylnaphthalene | 0.0046 | | 0.00833 | 0.0121 | | mg/L | | 90 | 10 - 150 |
| Pyrene | <0.00033 | | 0.00833 | 0.00813 | | mg/L | | 95 | 41 - 127 |
| 2-Methylnaphthalene | 0.0064 | | 0.00833 | 0.0145 | | mg/L | | 97 | 10 - 150 |
| Benzo[a]anthracene | <0.00033 | | 0.00833 | 0.00757 | | mg/L | | 87 | 55 - 133 |

| Surrogate | MS MS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 92 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 98 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 82 | | 19 - 130 |

Lab Sample ID: 400-101493-A-1-D MSD

Matrix: Solid

Analysis Batch: 246261

Client Sample ID: Matrix Spike Duplicate

Prep Type: SPLP West

Prep Batch: 246080

| Analyte | Sample | Sample Qualifier | Spike Added | MSD | | Unit | D | %Rec | %Rec. Limits | RPD | |
|------------------------|----------|------------------|-------------|---------|-----------|------|---|------|--------------|-----|-------|
| | Result | | | Result | Qualifier | | | | | RPD | Limit |
| Acenaphthene | <0.00033 | | 0.00833 | 0.00792 | | mg/L | | 95 | 35 - 113 | 2 | 49 |
| Acenaphthylene | <0.00033 | | 0.00833 | 0.00797 | | mg/L | | 96 | 41 - 118 | 2 | 48 |
| Anthracene | <0.00033 | | 0.00833 | 0.00788 | | mg/L | | 95 | 45 - 122 | 2 | 56 |
| Benzo[a]pyrene | <0.00033 | | 0.00833 | 0.00815 | | mg/L | | 94 | 50 - 108 | 4 | 59 |
| Benzo[b]fluoranthene | 0.00033 | | 0.00833 | 0.00879 | | mg/L | | 102 | 50 - 128 | 5 | 62 |
| Benzo[g,h,i]perylene | 0.00034 | | 0.00833 | 0.00811 | | mg/L | | 93 | 46 - 133 | 3 | 58 |
| Benzo[k]fluoranthene | 0.00034 | | 0.00833 | 0.00856 | | mg/L | | 99 | 52 - 128 | 6 | 58 |
| Chrysene | 0.00033 | | 0.00833 | 0.00790 | | mg/L | | 91 | 52 - 116 | 3 | 59 |
| Dibenz(a,h)anthracene | <0.00033 | | 0.00833 | 0.00824 | | mg/L | | 99 | 52 - 143 | 6 | 60 |
| Fluoranthene | <0.00033 | | 0.00833 | 0.00793 | | mg/L | | 93 | 32 - 150 | 3 | 59 |
| Fluorene | <0.00033 | | 0.00833 | 0.00882 | | mg/L | | 103 | 15 - 150 | 3 | 49 |
| Indeno[1,2,3-cd]pyrene | 0.00042 | | 0.00833 | 0.00798 | | mg/L | | 91 | 41 - 141 | 4 | 58 |
| Naphthalene | 0.0026 | | 0.00833 | 0.00986 | | mg/L | | 87 | 10 - 150 | 0 | 121 |
| Phenanthrene | 0.00033 | | 0.00833 | 0.00829 | | mg/L | | 95 | 36 - 125 | 2 | 69 |
| 1-Methylnaphthalene | 0.0046 | | 0.00833 | 0.0121 | | mg/L | | 90 | 10 - 150 | 0 | 66 |
| Pyrene | <0.00033 | | 0.00833 | 0.00832 | | mg/L | | 97 | 41 - 127 | 2 | 58 |
| 2-Methylnaphthalene | 0.0064 | | 0.00833 | 0.0146 | | mg/L | | 98 | 10 - 150 | 0 | 66 |
| Benzo[a]anthracene | <0.00033 | | 0.00833 | 0.00787 | | mg/L | | 91 | 55 - 133 | 4 | 57 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: 400-101493-A-1-D MSD
Matrix: Solid
Analysis Batch: 246261

Client Sample ID: Matrix Spike Duplicate
Prep Type: SLP West
Prep Batch: 246080

| Surrogate | MSD | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 95 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 98 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 82 | | 19 - 130 |

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 400-245442/1-A
Matrix: Solid
Analysis Batch: 246251

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245442

| Analyte | MB | | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-----|-------|---|----------------|----------------|---------|
| | Result | Qualifier | | | | | | | |
| Arsenic | <0.50 | ^ | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |
| Cadmium | <0.50 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |
| Nickel | <0.50 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |
| Lead | <0.50 | | 0.50 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |
| Vanadium | <0.99 | | 0.99 | | mg/Kg | | 02/04/15 13:11 | 02/10/15 18:47 | 1 |

Lab Sample ID: LCS 400-245442/2-A
Matrix: Solid
Analysis Batch: 246251

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245442

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|-------|---|------|--------------|
| | | | | | | | |
| Cadmium | 48.3 | 48.7 | | mg/Kg | | 101 | 80 - 120 |
| Nickel | 96.6 | 99.4 | | mg/Kg | | 103 | 80 - 120 |
| Lead | 96.6 | 99.6 | | mg/Kg | | 103 | 80 - 120 |
| Vanadium | 96.6 | 102 | | mg/Kg | | 105 | 80 - 120 |

Lab Sample ID: 400-101456-A-1-B MS
Matrix: Solid
Analysis Batch: 246251

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 245442

| Analyte | Sample | | Spike Added | MS | | Unit | D | %Rec | %Rec. Limits |
|----------|--------|-----------|-------------|--------|-----------|-------|---|------|--------------|
| | Result | Qualifier | | Result | Qualifier | | | | |
| Arsenic | 1.3 | ^ | 4.71 | 6.22 | ^ | mg/Kg | | 104 | 75 - 125 |
| Cadmium | <0.47 | | 4.71 | 4.58 | | mg/Kg | | 97 | 75 - 125 |
| Nickel | 5.4 | | 4.71 | 9.82 | | mg/Kg | | 94 | 75 - 125 |
| Lead | 2.7 | | 4.71 | 7.78 | ^ | mg/Kg | | 108 | 75 - 125 |
| Vanadium | 3.6 | | 4.71 | 8.74 | | mg/Kg | | 109 | 75 - 125 |

Lab Sample ID: 400-101456-A-1-C MSD
Matrix: Solid
Analysis Batch: 246251

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 245442

| Analyte | Sample | | Spike Added | MSD | | Unit | D | %Rec | %Rec. Limits | RPD | |
|---------|--------|-----------|-------------|--------|-----------|-------|---|------|--------------|-----|-------|
| | Result | Qualifier | | Result | Qualifier | | | | | RPD | Limit |
| Arsenic | 1.3 | ^ | 4.73 | 6.42 | ^ | mg/Kg | | 108 | 75 - 125 | 3 | 20 |
| Cadmium | <0.47 | | 4.73 | 4.62 | | mg/Kg | | 98 | 75 - 125 | 1 | 20 |
| Nickel | 5.4 | | 4.73 | 11.2 | | mg/Kg | | 122 | 75 - 125 | 13 | 20 |
| Lead | 2.7 | | 4.73 | 8.66 | ^ F1 | mg/Kg | | 126 | 75 - 125 | 11 | 20 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 400-101456-A-1-C MSD

Matrix: Solid

Analysis Batch: 246251

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245442

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------|---------------|------------------|-------------|------------|---------------|-------|---|------|--------------|-----|-----------|
| Vanadium | 3.6 | | 4.73 | 9.27 | | mg/Kg | | 120 | 75 - 125 | 6 | 20 |

Lab Sample ID: MB 400-245461/1-A

Matrix: Solid

Analysis Batch: 246609

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 245461

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|-----------|--------------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:31 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:31 | 1 |
| Nickel | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:31 | 1 |
| Lead | <0.47 | | 0.47 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:31 | 1 |
| Vanadium | <0.95 | | 0.95 | | mg/Kg | | 02/04/15 13:11 | 02/12/15 22:31 | 1 |

Lab Sample ID: LCS 400-245461/25-A

Matrix: Solid

Analysis Batch: 246609

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 245461

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|-------|---|------|--------------|
| Arsenic | 19.0 | 19.3 | | mg/Kg | | 102 | 80 - 120 |
| Cadmium | 19.0 | 19.3 | | mg/Kg | | 102 | 80 - 120 |
| Nickel | 19.0 | 18.9 | | mg/Kg | | 100 | 80 - 120 |
| Lead | 19.0 | 19.5 | | mg/Kg | | 103 | 80 - 120 |
| Vanadium | 19.0 | 19.7 | | mg/Kg | | 104 | 80 - 120 |

Lab Sample ID: 400-101504-B-3-B MS

Matrix: Solid

Analysis Batch: 246609

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 245461

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|-------|---|-------|--------------|
| Arsenic | 3.9 | | 4.64 | 7.18 | F1 | mg/Kg | | 70 | 75 - 125 |
| Cadmium | <0.47 | L | 4.64 | 4.23 | | mg/Kg | | 91 | 75 - 125 |
| Nickel | 2100 | E | 4.64 | 1400 | 4 | mg/Kg | | -1559 | 75 - 125 |
| Lead | 23 | ^ | 4.64 | 23.7 | 4 | mg/Kg | | 15 | 75 - 125 |
| Vanadium | 19 | | 4.64 | 21.8 | 4 | mg/Kg | | 63 | 75 - 125 |

Lab Sample ID: 400-101504-B-3-C MSD

Matrix: Solid

Analysis Batch: 246609

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 245461

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|-------|---|------|--------------|-----|-----------|
| Arsenic | 3.9 | | 4.69 | 7.54 | | mg/Kg | | 77 | 75 - 125 | 5 | 20 |

Lab Sample ID: LCS 400-246336/6-A

Matrix: Solid

Analysis Batch: 246861

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246336

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Arsenic | 1.00 | 0.942 | | mg/L | | 94 | 80 - 120 |
| Cadmium | 0.500 | 0.456 | | mg/L | | 91 | 80 - 120 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 400-246336/6-A
Matrix: Solid
Analysis Batch: 246861

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 246336

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Nickel | 1.00 | 0.925 | | mg/L | | 92 | 80 - 120 |
| Lead | 1.00 | 0.949 | | mg/L | | 95 | 80 - 120 |
| Vanadium | 1.00 | 0.974 | | mg/L | | 97 | 80 - 120 |

Lab Sample ID: LB 400-246055/1-C
Matrix: Solid
Analysis Batch: 246861

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 246336

| Analyte | LB Result | LB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|-----------|--------------|--------|-----|------|---|----------------|----------------|---------|
| Arsenic | <0.0050 | | 0.0050 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:56 | 1 |
| Cadmium | <0.0050 | | 0.0050 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:56 | 1 |
| Nickel | <0.0050 | | 0.0050 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:56 | 1 |
| Lead | <0.0050 | | 0.0050 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:56 | 1 |
| Vanadium | <0.010 | | 0.010 | | mg/L | | 02/11/15 12:01 | 02/13/15 19:56 | 1 |

Lab Sample ID: 400-101492-5 MS
Matrix: Solid
Analysis Batch: 246861

Client Sample ID: BD-05 (0-6)
Prep Type: SPLP West
Prep Batch: 246336

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Arsenic | <0.0050 | | 0.200 | 0.193 | | mg/L | | 96 | 75 - 125 |
| Cadmium | <0.0050 | | 0.200 | 0.188 | | mg/L | | 94 | 75 - 125 |
| Nickel | <0.0050 | | 0.200 | 0.189 | | mg/L | | 95 | 75 - 125 |
| Lead | <0.0050 | | 0.200 | 0.197 | | mg/L | | 98 | 75 - 125 |
| Vanadium | <0.010 | | 0.200 | 0.201 | | mg/L | | 101 | 75 - 125 |

Lab Sample ID: 400-101492-5 MSD
Matrix: Solid
Analysis Batch: 246861

Client Sample ID: BD-05 (0-6)
Prep Type: SPLP West
Prep Batch: 246336

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | Limit |
|----------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-------|
| Arsenic | <0.0050 | | 0.200 | 0.186 | | mg/L | | 93 | 75 - 125 | 3 | 20 |
| Cadmium | <0.0050 | | 0.200 | 0.181 | | mg/L | | 90 | 75 - 125 | 4 | 20 |
| Nickel | <0.0050 | | 0.200 | 0.182 | | mg/L | | 91 | 75 - 125 | 4 | 20 |
| Lead | <0.0050 | | 0.200 | 0.190 | | mg/L | | 94 | 75 - 125 | 4 | 20 |
| Vanadium | <0.010 | | 0.200 | 0.186 | | mg/L | | 93 | 75 - 125 | 8 | 20 |

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LCS 400-246340/14-A
Matrix: Solid
Analysis Batch: 246555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 246340

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Mercury | 0.00806 | 0.00763 | | mg/L | | 95 | 80 - 120 |

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 400-101547-A-2-F MS
Matrix: Solid
Analysis Batch: 246555

Client Sample ID: Matrix Spike
Prep Type: TCLP
Prep Batch: 246340

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Mercury | <0.0016 | | 0.0161 | 0.0147 | | mg/L | | 92 | 80 - 120 |

Lab Sample ID: 400-101547-A-2-G MSD
Matrix: Solid
Analysis Batch: 246555

Client Sample ID: Matrix Spike Duplicate
Prep Type: TCLP
Prep Batch: 246340

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Mercury | <0.0016 | | 0.0161 | 0.0142 | | mg/L | | 88 | 80 - 120 | 4 | 20 |

Lab Sample ID: LB 400-246004/1-D
Matrix: Solid
Analysis Batch: 246555

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 246340

| Analyte | LB Result | LB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|-----------|--------------|--------|-----|------|---|----------------|----------------|---------|
| Mercury | <0.0016 | | 0.0016 | | mg/L | | 02/11/15 12:54 | 02/12/15 12:45 | 1 |

Lab Sample ID: LB 400-246055/1-D
Matrix: Solid
Analysis Batch: 246555

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 246340

| Analyte | LB Result | LB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|-----------|--------------|--------|-----|------|---|----------------|----------------|---------|
| Mercury | <0.0016 | | 0.0016 | | mg/L | | 02/11/15 12:54 | 02/12/15 13:15 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 400-246291/14-A
Matrix: Solid
Analysis Batch: 246576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 246291

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|-----------|--------------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.015 | | 0.015 | | mg/Kg | | 02/11/15 09:56 | 02/12/15 15:10 | 1 |

Lab Sample ID: LCS 400-246291/15-A
Matrix: Solid
Analysis Batch: 246576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 246291

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|-------|---|------|--------------|
| Mercury | 0.0773 | 0.0785 | | mg/Kg | | 101 | 80 - 120 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) - DL

Lab Sample ID: 400-101538-A-3-H MS ^2
Matrix: Solid
Analysis Batch: 246576

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 246291

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------|---------------|------------------|-------------|-----------|--------------|-------|---|------|--------------|
| Mercury - DL | 1.1 | | 0.153 | 1.24 | 4 | mg/Kg | | 106 | 80 - 120 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) - DL (Continued)

Lab Sample ID: 400-101538-A-3-I MSD ^2

Matrix: Solid

Analysis Batch: 246576

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 246291

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|--------------|---------------|------------------|-------------|------------|---------------|-------|---|------|--------------|-----|-----------|
| Mercury - DL | 1.1 | | 0.161 | 1.23 | 4 | mg/Kg | | 95 | 80 - 120 | 1 | 20 |

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- 14

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

GC/MS Semi VOA

Prep Batch: 245691

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-101492-1 | BD-10 (0-6) | Total/NA | Solid | 3546 | |
| 400-101492-2 | BD-09 (0-6) | Total/NA | Solid | 3546 | |
| 400-101492-3 | BD-03 (0-6) | Total/NA | Solid | 3546 | |
| 400-101492-4 | BD-07 (0-6) | Total/NA | Solid | 3546 | |
| 400-101492-5 | BD-05 (0-6) | Total/NA | Solid | 3546 | |
| 400-101492-6 | BD-01 (0-6) | Total/NA | Solid | 3546 | |
| 400-101492-7 | BD-13 (0-6) | Total/NA | Solid | 3546 | |
| LCS 400-245691/2-A | Lab Control Sample | Total/NA | Solid | 3546 | |
| MB 400-245691/1-A | Method Blank | Total/NA | Solid | 3546 | |

Analysis Batch: 245705

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|----------|------------|
| LCS 400-245691/2-A | Lab Control Sample | Total/NA | Solid | 8270D LL | 245691 |
| MB 400-245691/1-A | Method Blank | Total/NA | Solid | 8270D LL | 245691 |

Analysis Batch: 245921

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|----------|------------|
| 400-101492-1 | BD-10 (0-6) | Total/NA | Solid | 8270D LL | 245691 |
| 400-101492-2 | BD-09 (0-6) | Total/NA | Solid | 8270D LL | 245691 |
| 400-101492-4 | BD-07 (0-6) | Total/NA | Solid | 8270D LL | 245691 |

Leach Batch: 246055

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101492-5 | BD-05 (0-6) | SPLP West | Solid | 1312 | |
| 400-101493-A-1-C MS | Matrix Spike | SPLP West | Solid | 1312 | |
| 400-101493-A-1-D MSD | Matrix Spike Duplicate | SPLP West | Solid | 1312 | |
| LB 400-246055/1-B | Method Blank | SPLP West | Solid | 1312 | |

Prep Batch: 246080

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101492-5 | BD-05 (0-6) | SPLP West | Solid | 3520C | 246055 |
| 400-101493-A-1-C MS | Matrix Spike | SPLP West | Solid | 3520C | 246055 |
| 400-101493-A-1-D MSD | Matrix Spike Duplicate | SPLP West | Solid | 3520C | 246055 |
| LB 400-246055/1-B | Method Blank | SPLP West | Solid | 3520C | 246055 |
| LCS 400-246080/2-A | Lab Control Sample | Total/NA | Solid | 3520C | |
| LCSD 400-246080/3-A | Lab Control Sample Dup | Total/NA | Solid | 3520C | |

Analysis Batch: 246098

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|----------|------------|
| 400-101492-3 | BD-03 (0-6) | Total/NA | Solid | 8270D LL | 245691 |
| 400-101492-5 | BD-05 (0-6) | Total/NA | Solid | 8270D LL | 245691 |
| 400-101492-6 | BD-01 (0-6) | Total/NA | Solid | 8270D LL | 245691 |

Analysis Batch: 246261

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|----------|------------|
| 400-101492-5 | BD-05 (0-6) | SPLP West | Solid | 8270D LL | 246080 |
| 400-101493-A-1-C MS | Matrix Spike | SPLP West | Solid | 8270D LL | 246080 |
| 400-101493-A-1-D MSD | Matrix Spike Duplicate | SPLP West | Solid | 8270D LL | 246080 |
| LB 400-246055/1-B | Method Blank | SPLP West | Solid | 8270D LL | 246080 |
| LCS 400-246080/2-A | Lab Control Sample | Total/NA | Solid | 8270D LL | 246080 |

TestAmerica Pensacola

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

GC/MS Semi VOA (Continued)

Analysis Batch: 246408

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|----------|------------|
| LCSD 400-246080/3-A | Lab Control Sample Dup | Total/NA | Solid | 8270D LL | 246080 |

Analysis Batch: 246411

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|----------|------------|
| 400-101492-7 | BD-13 (0-6) | Total/NA | Solid | 8270D LL | 245691 |

Metals

Prep Batch: 245442

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101456-A-1-B MS | Matrix Spike | Total/NA | Solid | 3050B | |
| 400-101456-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 3050B | |
| 400-101492-1 | BD-10 (0-6) | Total/NA | Solid | 3050B | |
| 400-101492-2 | BD-09 (0-6) | Total/NA | Solid | 3050B | |
| 400-101492-3 | BD-03 (0-6) | Total/NA | Solid | 3050B | |
| LCS 400-245442/2-A | Lab Control Sample | Total/NA | Solid | 3050B | |
| MB 400-245442/1-A | Method Blank | Total/NA | Solid | 3050B | |

Prep Batch: 245461

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101492-4 | BD-07 (0-6) | Total/NA | Solid | 3050B | |
| 400-101492-5 | BD-05 (0-6) | Total/NA | Solid | 3050B | |
| 400-101492-6 | BD-01 (0-6) | Total/NA | Solid | 3050B | |
| 400-101492-7 | BD-13 (0-6) | Total/NA | Solid | 3050B | |
| 400-101504-B-3-B MS | Matrix Spike | Total/NA | Solid | 3050B | |
| 400-101504-B-3-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 3050B | |
| LCS 400-245461/25-A | Lab Control Sample | Total/NA | Solid | 3050B | |
| MB 400-245461/1-A | Method Blank | Total/NA | Solid | 3050B | |

Leach Batch: 246004

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101547-A-2-F MS | Matrix Spike | TCLP | Solid | 1311 | |
| 400-101547-A-2-G MSD | Matrix Spike Duplicate | TCLP | Solid | 1311 | |
| LB 400-246004/1-D | Method Blank | SPLP West | Solid | 1311 | |

Leach Batch: 246055

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| 400-101492-5 | BD-05 (0-6) | SPLP West | Solid | 1312 | |
| 400-101492-5 MS | BD-05 (0-6) | SPLP West | Solid | 1312 | |
| 400-101492-5 MSD | BD-05 (0-6) | SPLP West | Solid | 1312 | |
| LB 400-246055/1-C | Method Blank | SPLP West | Solid | 1312 | |
| LB 400-246055/1-D | Method Blank | SPLP West | Solid | 1312 | |

Analysis Batch: 246251

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101456-A-1-B MS | Matrix Spike | Total/NA | Solid | 6010C | 245442 |
| 400-101456-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 6010C | 245442 |
| 400-101492-1 | BD-10 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101492-2 | BD-09 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101492-3 | BD-03 (0-6) | Total/NA | Solid | 6010C | 245442 |

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Metals (Continued)

Analysis Batch: 246251 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| LCS 400-245442/2-A | Lab Control Sample | Total/NA | Solid | 6010C | 245442 |
| MB 400-245442/1-A | Method Blank | Total/NA | Solid | 6010C | 245442 |

Prep Batch: 246291

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------------------|------------------------|-----------|--------|--------|------------|
| 400-101492-1 | BD-10 (0-6) | Total/NA | Solid | 7471B | |
| 400-101492-2 | BD-09 (0-6) | Total/NA | Solid | 7471B | |
| 400-101492-3 | BD-03 (0-6) | Total/NA | Solid | 7471B | |
| 400-101492-4 | BD-07 (0-6) | Total/NA | Solid | 7471B | |
| 400-101492-5 | BD-05 (0-6) | Total/NA | Solid | 7471B | |
| 400-101492-6 | BD-01 (0-6) | Total/NA | Solid | 7471B | |
| 400-101492-7 | BD-13 (0-6) | Total/NA | Solid | 7471B | |
| 400-101538-A-3-H MS ^2 - DL | Matrix Spike | Total/NA | Solid | 7471B | |
| 400-101538-A-3-I MSD ^2 - DL | Matrix Spike Duplicate | Total/NA | Solid | 7471B | |
| LCS 400-246291/15-A | Lab Control Sample | Total/NA | Solid | 7471B | |
| MB 400-246291/14-A | Method Blank | Total/NA | Solid | 7471B | |

Prep Batch: 246336

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-101492-5 | BD-05 (0-6) | SPLP West | Solid | 3010A | 246055 |
| 400-101492-5 MS | BD-05 (0-6) | SPLP West | Solid | 3010A | 246055 |
| 400-101492-5 MSD | BD-05 (0-6) | SPLP West | Solid | 3010A | 246055 |
| LB 400-246055/1-C | Method Blank | SPLP West | Solid | 3010A | 246055 |
| LCS 400-246336/6-A | Lab Control Sample | Total/NA | Solid | 3010A | |

Prep Batch: 246340

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101492-5 | BD-05 (0-6) | SPLP West | Solid | 7470A | 246055 |
| 400-101547-A-2-F MS | Matrix Spike | TCLP | Solid | 7470A | 246004 |
| 400-101547-A-2-G MSD | Matrix Spike Duplicate | TCLP | Solid | 7470A | 246004 |
| LB 400-246004/1-D | Method Blank | SPLP West | Solid | 7470A | 246004 |
| LB 400-246055/1-D | Method Blank | SPLP West | Solid | 7470A | 246055 |
| LCS 400-246340/14-A | Lab Control Sample | Total/NA | Solid | 7470A | |

Analysis Batch: 246555

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101492-5 | BD-05 (0-6) | SPLP West | Solid | 7470A | 246340 |
| 400-101547-A-2-F MS | Matrix Spike | TCLP | Solid | 7470A | 246340 |
| 400-101547-A-2-G MSD | Matrix Spike Duplicate | TCLP | Solid | 7470A | 246340 |
| LB 400-246004/1-D | Method Blank | SPLP West | Solid | 7470A | 246340 |
| LB 400-246055/1-D | Method Blank | SPLP West | Solid | 7470A | 246340 |
| LCS 400-246340/14-A | Lab Control Sample | Total/NA | Solid | 7470A | 246340 |

Analysis Batch: 246576

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 400-101492-1 | BD-10 (0-6) | Total/NA | Solid | 7471B | 246291 |
| 400-101492-2 | BD-09 (0-6) | Total/NA | Solid | 7471B | 246291 |
| 400-101492-3 | BD-03 (0-6) | Total/NA | Solid | 7471B | 246291 |
| 400-101492-4 | BD-07 (0-6) | Total/NA | Solid | 7471B | 246291 |
| 400-101492-5 | BD-05 (0-6) | Total/NA | Solid | 7471B | 246291 |
| 400-101492-6 | BD-01 (0-6) | Total/NA | Solid | 7471B | 246291 |

TestAmerica Pensacola

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Metals (Continued)

Analysis Batch: 246576 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------------------|------------------------|-----------|--------|--------|------------|
| 400-101492-7 | BD-13 (0-6) | Total/NA | Solid | 7471B | 246291 |
| 400-101538-A-3-H MS ^2 - DL | Matrix Spike | Total/NA | Solid | 7471B | 246291 |
| 400-101538-A-3-I MSD ^2 - DL | Matrix Spike Duplicate | Total/NA | Solid | 7471B | 246291 |
| LCS 400-246291/15-A | Lab Control Sample | Total/NA | Solid | 7471B | 246291 |
| MB 400-246291/14-A | Method Blank | Total/NA | Solid | 7471B | 246291 |

Analysis Batch: 246604

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 400-101492-1 | BD-10 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101492-2 | BD-09 (0-6) | Total/NA | Solid | 6010C | 245442 |
| 400-101492-3 | BD-03 (0-6) | Total/NA | Solid | 6010C | 245442 |

Analysis Batch: 246609

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-101492-4 | BD-07 (0-6) | Total/NA | Solid | 6010C | 245461 |
| 400-101492-5 | BD-05 (0-6) | Total/NA | Solid | 6010C | 245461 |
| 400-101492-6 | BD-01 (0-6) | Total/NA | Solid | 6010C | 245461 |
| 400-101492-7 | BD-13 (0-6) | Total/NA | Solid | 6010C | 245461 |
| 400-101504-B-3-B MS | Matrix Spike | Total/NA | Solid | 6010C | 245461 |
| 400-101504-B-3-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 6010C | 245461 |
| LCS 400-245461/25-A | Lab Control Sample | Total/NA | Solid | 6010C | 245461 |
| MB 400-245461/1-A | Method Blank | Total/NA | Solid | 6010C | 245461 |

Analysis Batch: 246861

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-101492-5 | BD-05 (0-6) | SPLP West | Solid | 6010C | 246336 |
| 400-101492-5 MS | BD-05 (0-6) | SPLP West | Solid | 6010C | 246336 |
| 400-101492-5 MSD | BD-05 (0-6) | SPLP West | Solid | 6010C | 246336 |
| LB 400-246055/1-C | Method Blank | SPLP West | Solid | 6010C | 246336 |
| LCS 400-246336/6-A | Lab Control Sample | Total/NA | Solid | 6010C | 246336 |

Analysis Batch: 246996

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 400-101492-5 | BD-05 (0-6) | Total/NA | Solid | 6010C | 245461 |
| 400-101492-6 | BD-01 (0-6) | Total/NA | Solid | 6010C | 245461 |
| 400-101492-7 | BD-13 (0-6) | Total/NA | Solid | 6010C | 245461 |

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-10 (0-6)

Lab Sample ID: 400-101492-1

Date Collected: 01/30/15 09:00

Matrix: Solid

Date Received: 02/03/15 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245691 | 02/05/15 17:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 20:48 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 20:19 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246604 | 02/12/15 20:25 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246291 | 02/11/15 09:56 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246576 | 02/12/15 15:36 | JAP | TAL PEN |

Client Sample ID: BD-09 (0-6)

Lab Sample ID: 400-101492-2

Date Collected: 01/30/15 10:25

Matrix: Solid

Date Received: 02/03/15 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245691 | 02/05/15 17:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 21:20 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 20:33 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246604 | 02/12/15 20:28 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246291 | 02/11/15 09:56 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246576 | 02/12/15 15:38 | JAP | TAL PEN |

Client Sample ID: BD-03 (0-6)

Lab Sample ID: 400-101492-3

Date Collected: 01/30/15 01:05

Matrix: Solid

Date Received: 02/03/15 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245691 | 02/05/15 17:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 246098 | 02/10/15 16:28 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246251 | 02/10/15 20:36 | GESP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245442 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246604 | 02/12/15 20:31 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246291 | 02/11/15 09:56 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246576 | 02/12/15 15:40 | JAP | TAL PEN |

Client Sample ID: BD-07 (0-6)

Lab Sample ID: 400-101492-4

Date Collected: 01/31/15 10:10

Matrix: Solid

Date Received: 02/03/15 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245691 | 02/05/15 17:04 | VC1 | TAL PEN |

TestAmerica Pensacola

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-07 (0-6)

Lab Sample ID: 400-101492-4

Date Collected: 01/31/15 10:10

Matrix: Solid

Date Received: 02/03/15 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 8270D LL | | 1 | 245921 | 02/09/15 22:25 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245461 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246609 | 02/12/15 22:41 | RJB | TAL PEN |
| Total/NA | Prep | 7471B | | | 246291 | 02/11/15 09:56 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246576 | 02/12/15 15:41 | JAP | TAL PEN |

Client Sample ID: BD-05 (0-6)

Lab Sample ID: 400-101492-5

Date Collected: 01/31/15 11:00

Matrix: Solid

Date Received: 02/03/15 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| SPLP West | Leach | 1312 | | | 246055 | 02/09/15 16:16 | DAS | TAL PEN |
| SPLP West | Prep | 3520C | | | 246080 | 02/10/15 12:49 | KH1 | TAL PEN |
| SPLP West | Analysis | 8270D LL | | 1 | 246261 | 02/11/15 12:57 | CEP | TAL PEN |
| Total/NA | Prep | 3546 | | | 245691 | 02/05/15 17:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 246098 | 02/10/15 17:00 | CEP | TAL PEN |
| SPLP West | Leach | 1312 | | | 246055 | 02/09/15 16:16 | DAS | TAL PEN |
| SPLP West | Prep | 3010A | | | 246336 | 02/11/15 12:01 | DN1 | TAL PEN |
| SPLP West | Analysis | 6010C | | 1 | 246861 | 02/13/15 19:40 | SLM | TAL PEN |
| Total/NA | Prep | 3050B | | | 245461 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246609 | 02/12/15 22:54 | RJB | TAL PEN |
| Total/NA | Prep | 3050B | | | 245461 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246996 | 02/17/15 15:32 | SLM | TAL PEN |
| SPLP West | Leach | 1312 | | | 246055 | 02/09/15 16:16 | DAS | TAL PEN |
| SPLP West | Prep | 7470A | | | 246340 | 02/11/15 12:56 | JAP | TAL PEN |
| SPLP West | Analysis | 7470A | | 1 | 246555 | 02/12/15 13:16 | JAP | TAL PEN |
| Total/NA | Prep | 7471B | | | 246291 | 02/11/15 09:56 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246576 | 02/12/15 15:42 | JAP | TAL PEN |

Client Sample ID: BD-01 (0-6)

Lab Sample ID: 400-101492-6

Date Collected: 01/31/15 02:00

Matrix: Solid

Date Received: 02/03/15 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245691 | 02/05/15 17:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 246098 | 02/10/15 17:32 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245461 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246609 | 02/12/15 22:58 | RJB | TAL PEN |
| Total/NA | Prep | 3050B | | | 245461 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246996 | 02/17/15 15:36 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246291 | 02/11/15 09:56 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246576 | 02/12/15 15:44 | JAP | TAL PEN |

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Client Sample ID: BD-13 (0-6)

Lab Sample ID: 400-101492-7

Date Collected: 02/01/15 11:30

Matrix: Solid

Date Received: 02/03/15 08:30

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Prep | 3546 | | | 245691 | 02/05/15 17:04 | VC1 | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 246411 | 02/12/15 08:20 | CEP | TAL PEN |
| Total/NA | Prep | 3050B | | | 245461 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246609 | 02/12/15 23:01 | RJB | TAL PEN |
| Total/NA | Prep | 3050B | | | 245461 | 02/04/15 13:11 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 246996 | 02/17/15 15:39 | SLM | TAL PEN |
| Total/NA | Prep | 7471B | | | 246291 | 02/11/15 09:56 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 246576 | 02/12/15 15:56 | JAP | TAL PEN |

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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Certification Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

Laboratory: TestAmerica Pensacola

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|-----------|---------|------------|------------------|-----------------|
| Louisiana | NELAP | 6 | 30976 | 06-30-15 |

The following analytes are included in this report, but certification is not offered by the governing authority:

| Analysis Method | Prep Method | Matrix | Analyte |
|-----------------|-------------|--------|---------|
| 7470A | 7470A | Solid | Mercury |

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Method Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-101492-1

| Method | Method Description | Protocol | Laboratory |
|----------|---|----------|------------|
| 8270D LL | Semivolatile Organic Compounds by GC/MS - Low Level | SW846 | TAL PEN |
| 6010C | Metals (ICP) | SW846 | TAL PEN |
| 7470A | Mercury (CVAA) | SW846 | TAL PEN |
| 7471B | Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) | SW846 | TAL PEN |

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



Chain of Custody Record

| Client Information | | Sampler: <u>C. Paul</u> | | Lab PM: <u>Swafford, Mark H</u> | | Carrier Tracking No(s): | | COC No: <u>400-42446-21072.4</u> | |
|---|----------------|---------------------------------------|------------------------------|--|-----------------------------------|---|---|--|-------------|
| Client Contact: <u>Barry Hebert</u> | | Phone: <u>(225) 932-2767</u> | | E-Mail: <u>mark.swafford@testamericainc.com</u> | | Page: <u>4 of 4</u> | | Job #: | |
| Company: <u>CB&I Environmental & Infrastructure, Inc</u> | | Due Date Requested: | | Analysis Requested | | Total Number of Containers: | | Preservation Codes: | |
| Address: <u>4171 Essen Lane</u> | | TAT Requested (days): <u>Standard</u> | | 8270D_LL - Low Level PAHs by 8270 | | 6010C - Arsenic, Cadmium, Lead, Nickel, Vanadium/Hg | | A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: | |
| City: <u>Baton Rouge</u> | | PO #: | | Field Filtered Sample (Yes or No) | | Special Instructions/Note: | | M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH +5 Z - other (specify) | |
| State, Zip: <u>LA, 70809</u> | | Purchase Order not required | | Pencil/MS/SP (Yes/No) | | | | | |
| Phone: _____ | | WO #: | | 8270D_LL - Low Level PAHs by 8270 | | | | | |
| Email: <u>barry.hebert@CBI.com</u> | | Project #: | | 8270D_LL - Low Level PAHs by 8270 | | | | | |
| Project Name: <u>CPRA Coal Study</u> | | SSOW#: | | 8270D_LL - Low Level PAHs by 8270 | | | | | |
| Site: _____ | | | | 8270D_LL - Low Level PAHs by 8270 | | | | | |
| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=water/soil, BT=Tissue, Asst) | Field Filtered Sample (Yes or No) | 8270D_LL - Low Level PAHs by 8270 | 6010C - Arsenic, Cadmium, Lead, Nickel, Vanadium/Hg | SPLD PAH | SPLD METALS |
| <u>BD-10 (0-6)</u> | <u>1/30/15</u> | <u>9:00</u> | <u>C</u> | <u>Solid</u> | <u>X</u> | <u>X</u> | <u>X</u> | | |
| <u>BD-09 (0-6)</u> | <u>1/30/15</u> | <u>10:25</u> | <u>↓</u> | <u>Solid</u> | <u>X</u> | <u>X</u> | <u>X</u> | | |
| <u>BD-03 (0-6)</u> | <u>1/30/15</u> | <u>1:05</u> | <u>↓</u> | <u>Solid</u> | <u>X</u> | <u>X</u> | <u>X</u> | | |
| <u>BD-07 (0-6)</u> | <u>1/31/15</u> | <u>10:10</u> | <u>C</u> | <u>Solid</u> | <u>X</u> | <u>X</u> | <u>X</u> | | |
| <u>BD-05 (0-6)</u> | <u>1/31/15</u> | <u>11:00</u> | <u>↓</u> | <u>Solid</u> | <u>X</u> | <u>X</u> | <u>X</u> | | |
| <u>BD-01 (0-6)</u> | <u>1/31/15</u> | <u>2:00</u> | <u>↓</u> | <u>Solid</u> | <u>X</u> | <u>X</u> | <u>X</u> | | |
| <u>BD-13 (0-6)</u> | <u>2/1/15</u> | <u>11:30</u> | <u>C</u> | <u>Solid</u> | <u>X</u> | <u>X</u> | <u>X</u> | | |
| Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological | | | | | | | | | |
| Deliverable Requested: I, II, III, IV, Other (specify) _____ | | | | | | | | | |
| Empty Kit Relinquished by: _____ Date: _____ Time: _____ | | | | | | | | | |
| Relinquished by: _____ Date/Time: <u>2-2-15 / 11:53</u> Company: _____ | | | | | | | | | |
| Relinquished by: _____ Date/Time: <u>2/2/15 1630</u> Company: _____ | | | | | | | | | |
| Relinquished by: _____ Date/Time: _____ Company: _____ | | | | | | | | | |
| Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | |
| Custody Seal No.: <u>35°C</u> | | | | | | | | | |

Login Sample Receipt Checklist

Client: CB&I Environmental & Infrastructure, Inc

Job Number: 400-101492-1

Login Number: 101492

List Source: TestAmerica Pensacola

List Number: 1

Creator: Summers, Dustin H

| Question | Answer | Comment |
|--|--------|------------|
| Radioactivity wasn't checked or is <=/ background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 3.5°C IR-2 |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-102502-2
Client Project/Site: CPRA Coal Study

For:
CB&I Environmental & Infrastructure, Inc
4171 Essen Lane
Baton Rouge, Louisiana 70809

Attn: Glen Landry

Mark Swafford

Authorized for release by:
4/13/2015 4:55:07 PM

Mark Swafford, Project Manager I
(850)474-1001
mark.swafford@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Qualifiers

GC/MS Semi VOA

| Qualifier | Qualifier Description |
|-----------|--|
| H | Sample was prepped or analyzed beyond the specified holding time |

Metals

| Qualifier | Qualifier Description |
|-----------|---|
| H | Sample was prepped or analyzed beyond the specified holding time |
| F1 | MS and/or MSD Recovery exceeds the control limits |
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| E | Result exceeded calibration range. |

General Chemistry

| Qualifier | Qualifier Description |
|-----------|--|
| H | Sample was prepped or analyzed beyond the specified holding time |

Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|----------------|---|
| □ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

Case Narrative

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Job ID: 400-102502-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-102502-2

Comments

No additional comments.

Receipt

The samples were received on 2/28/2015 11:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

GC/MS Semi VOA

Method 8270D LL: The continuing calibration verification (CCV) associated with batch 400-252578>> recovered outside acceptance criteria, low biased, for Benzo(g,h,i)perylene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 7471B: The following sample was analyzed outside of analytical holding time due to method being added after the 28 day holding time: LH-21 (0-6) (400-102502-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method SM 2540G: The analysis for the following samples was ordered after the holding time expired. BD-15 (0-6) (400-102502-4), LH-19 (0-6) (400-102502-1), LH-20 (0-6) (400-102502-2), LH-21 (0-6) (400-102502-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method(s) 1312: The following sample(s) was activated for SCLP analysis outside of holding time: LH-21 (0-6) (400-102502-3).

Method 3546: The following sample was activated for 8270 LL outside of holding time : LH-21 (0-6) (400-102502-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Client Sample ID: LH-19 (0-6)

Lab Sample ID: 400-102502-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|------|-----|------|---------|---|--------|-----------|
| Total Solids | 80 | H | 0.10 | | % | 1 | | 2540G | Total/NA |

Client Sample ID: LH-20 (0-6)

Lab Sample ID: 400-102502-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|------|-----|------|---------|---|--------|-----------|
| Total Solids | 81 | H | 0.10 | | % | 1 | | 2540G | Total/NA |

Client Sample ID: LH-21 (0-6)

Lab Sample ID: 400-102502-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|------------------------|--------|-----------|--------|-----|-------|---------|---|----------|-----------|
| Anthracene | 0.0073 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[a]pyrene | 0.022 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[b]fluoranthene | 0.016 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[g,h,i]perylene | 0.018 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Chrysene | 0.027 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Dibenz(a,h)anthracene | 0.0096 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Fluoranthene | 0.017 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Indeno[1,2,3-cd]pyrene | 0.010 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 1-Methylnaphthalene | 0.012 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| 2-Methylnaphthalene | 0.019 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Naphthalene | 0.015 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Phenanthrene | 0.013 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Pyrene | 0.031 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Benzo[a]anthracene | 0.022 | H | 0.0065 | | mg/Kg | 1 | | 8270D LL | Total/NA |
| Arsenic | 3.4 | | 0.94 | | mg/Kg | 1 | | 6010C | Total/NA |
| Nickel | 9.7 | | 0.47 | | mg/Kg | 1 | | 6010C | Total/NA |
| Lead | 7.4 | | 0.94 | | mg/Kg | 1 | | 6010C | Total/NA |
| Vanadium | 16 | | 0.94 | | mg/Kg | 1 | | 6010C | Total/NA |
| Mercury | 0.022 | H | 0.015 | | mg/Kg | 1 | | 7471B | Total/NA |
| Total Solids | 74 | H | 0.10 | | % | 1 | | 2540G | Total/NA |

Client Sample ID: BD-15 (0-6)

Lab Sample ID: 400-102502-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|------|-----|------|---------|---|--------|-----------|
| Total Solids | 83 | H | 0.10 | | % | 1 | | 2540G | Total/NA |

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Sample Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 400-102502-1 | LH-19 (0-6) | Solid | 02/26/15 10:50 | 02/28/15 11:00 |
| 400-102502-2 | LH-20 (0-6) | Solid | 02/26/15 11:20 | 02/28/15 11:00 |
| 400-102502-3 | LH-21 (0-6) | Solid | 02/26/15 13:15 | 02/28/15 11:00 |
| 400-102502-4 | BD-15 (0-6) | Solid | 02/26/15 16:00 | 02/28/15 11:00 |

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Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Client Sample ID: LH-19 (0-6)

Lab Sample ID: 400-102502-1

Date Collected: 02/26/15 10:50

Matrix: Solid

Date Received: 02/28/15 11:00

General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|------|-----|------|---|----------|----------------|---------|
| Total Solids | 80 | H | 0.10 | | % | | | 04/07/15 19:17 | 1 |

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Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Client Sample ID: LH-20 (0-6)

Lab Sample ID: 400-102502-2

Date Collected: 02/26/15 11:20

Matrix: Solid

Date Received: 02/28/15 11:00

General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|------|-----|------|---|----------|----------------|---------|
| Total Solids | 81 | H | 0.10 | | % | | | 04/07/15 19:17 | 1 |

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Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Client Sample ID: LH-21 (0-6)

Lab Sample ID: 400-102502-3

Date Collected: 02/26/15 13:15

Matrix: Solid

Date Received: 02/28/15 11:00

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------------------------|---------------|-----------|----------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0065 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Acenaphthylene | <0.0065 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Anthracene | 0.0073 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Benzo[a]pyrene | 0.022 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Benzo[b]fluoranthene | 0.016 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Benzo[g,h,i]perylene | 0.018 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Benzo[k]fluoranthene | <0.0065 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Chrysene | 0.027 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Dibenz(a,h)anthracene | 0.0096 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Fluoranthene | 0.017 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Fluorene | <0.0065 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Indeno[1,2,3-cd]pyrene | 0.010 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| 1-Methylnaphthalene | 0.012 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| 2-Methylnaphthalene | 0.019 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Naphthalene | 0.015 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Phenanthrene | 0.013 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Pyrene | 0.031 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Benzo[a]anthracene | 0.022 | H | 0.0065 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl | 75 | | 27 - 127 | | | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Nitrobenzene-d5 (Surr) | 65 | | 15 - 136 | | | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |
| Terphenyl-d14 (Surr) | 79 | | 24 - 146 | | | | 04/02/15 09:23 | 04/03/15 18:11 | 1 |

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-----------|----------|-----|------|---|----------------|----------------|---------|
| Acenaphthene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Acenaphthylene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Anthracene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Benzo[a]anthracene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Benzo[a]pyrene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Benzo[b]fluoranthene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Benzo[g,h,i]perylene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Benzo[k]fluoranthene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Chrysene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Dibenz(a,h)anthracene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Fluoranthene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Fluorene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Naphthalene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Phenanthrene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Pyrene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| 1-Methylnaphthalene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| 2-Methylnaphthalene | <0.00025 | H | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Terphenyl-d14 (Surr) | 89 | | 33 - 138 | | | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| 2-Fluorobiphenyl | 88 | | 15 - 122 | | | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |
| Nitrobenzene-d5 (Surr) | 80 | | 19 - 130 | | | | 04/03/15 15:12 | 04/08/15 12:54 | 1 |

TestAmerica Pensacola

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Client Sample ID: LH-21 (0-6)

Lab Sample ID: 400-102502-3

Date Collected: 02/26/15 13:15

Matrix: Solid

Date Received: 02/28/15 11:00

Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | 3.4 | | 0.94 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 01:40 | 1 |
| Cadmium | <0.47 | | 0.47 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 01:40 | 1 |
| Nickel | 9.7 | | 0.47 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 01:40 | 1 |
| Lead | 7.4 | | 0.94 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 01:40 | 1 |
| Vanadium | 16 | | 0.94 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 01:40 | 1 |

Method: 6010C - Metals (ICP) - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| Arsenic | <0.0050 | | 0.0050 | | mg/L | | 04/05/15 14:14 | 04/10/15 17:49 | 1 |
| Cadmium | <0.0050 | | 0.0050 | | mg/L | | 04/05/15 14:14 | 04/10/15 17:49 | 1 |
| Nickel | <0.0050 | | 0.0050 | | mg/L | | 04/05/15 14:14 | 04/10/15 17:49 | 1 |
| Lead | <0.0050 | | 0.0050 | | mg/L | | 04/05/15 14:14 | 04/10/15 17:49 | 1 |
| Vanadium | <0.010 | | 0.010 | | mg/L | | 04/05/15 14:14 | 04/10/15 17:49 | 1 |

Method: 7470A - Mercury (CVAA) - SPLP West

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|---------|-----------|--------|-----|------|---|----------------|----------------|---------|
| Mercury | <0.0016 | H | 0.0016 | | mg/L | | 04/03/15 14:36 | 04/06/15 10:22 | 1 |

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | 0.022 | H | 0.015 | | mg/Kg | | 04/06/15 08:36 | 04/08/15 13:44 | 1 |

General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|------|-----|------|---|----------|----------------|---------|
| Total Solids | 74 | H | 0.10 | | % | | | 04/07/15 19:17 | 1 |

Client Sample Results

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Client Sample ID: BD-15 (0-6)

Lab Sample ID: 400-102502-4

Date Collected: 02/26/15 16:00

Matrix: Solid

Date Received: 02/28/15 11:00

General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|------|-----|------|---|----------|----------------|---------|
| Total Solids | 83 | H | 0.10 | | % | | | 04/07/15 19:17 | 1 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Lab Sample ID: MB 400-251961/6-A

Matrix: Solid

Analysis Batch: 252114

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 251961

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|--------------|--------|-----|-------|---|----------------|----------------|---------|
| Acenaphthene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Acenaphthylene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Benzo[a]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Benzo[b]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Benzo[g,h,i]perylene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Benzo[k]fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Chrysene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Dibenz(a,h)anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Fluoranthene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Fluorene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Naphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Phenanthrene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| 1-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Pyrene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| 2-Methylnaphthalene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Benzo[a]anthracene | <0.0066 | | 0.0066 | | mg/Kg | | 04/02/15 09:23 | 04/03/15 15:13 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|--------------|--------------|----------|----------------|----------------|---------|
| 2-Fluorobiphenyl | 78 | | 27 - 127 | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Terphenyl-d14 (Surr) | 87 | | 24 - 146 | 04/02/15 09:23 | 04/03/15 15:13 | 1 |
| Nitrobenzene-d5 (Surr) | 69 | | 15 - 136 | 04/02/15 09:23 | 04/03/15 15:13 | 1 |

Lab Sample ID: LCS 400-251961/5-A

Matrix: Solid

Analysis Batch: 252114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 251961

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|-------|---|------|--------------|
| Acenaphthene | 0.333 | 0.305 | | mg/Kg | | 92 | 59 - 130 |
| Acenaphthylene | 0.333 | 0.312 | | mg/Kg | | 94 | 60 - 130 |
| Anthracene | 0.333 | 0.327 | | mg/Kg | | 98 | 64 - 130 |
| Benzo[a]pyrene | 0.333 | 0.322 | | mg/Kg | | 97 | 56 - 130 |
| Benzo[b]fluoranthene | 0.333 | 0.348 | | mg/Kg | | 104 | 62 - 130 |
| Benzo[g,h,i]perylene | 0.333 | 0.320 | | mg/Kg | | 96 | 39 - 132 |
| Benzo[k]fluoranthene | 0.333 | 0.301 | | mg/Kg | | 90 | 60 - 130 |
| Chrysene | 0.333 | 0.319 | | mg/Kg | | 96 | 65 - 130 |
| Dibenz(a,h)anthracene | 0.333 | 0.331 | | mg/Kg | | 99 | 43 - 133 |
| Fluoranthene | 0.333 | 0.326 | | mg/Kg | | 98 | 61 - 130 |
| Fluorene | 0.333 | 0.301 | | mg/Kg | | 90 | 59 - 130 |
| Indeno[1,2,3-cd]pyrene | 0.333 | 0.349 | | mg/Kg | | 105 | 43 - 131 |
| Naphthalene | 0.333 | 0.292 | | mg/Kg | | 88 | 45 - 130 |
| Phenanthrene | 0.333 | 0.320 | | mg/Kg | | 96 | 63 - 130 |
| 1-Methylnaphthalene | 0.333 | 0.300 | | mg/Kg | | 90 | 56 - 130 |
| Pyrene | 0.333 | 0.318 | | mg/Kg | | 95 | 47 - 135 |
| 2-Methylnaphthalene | 0.333 | 0.299 | | mg/Kg | | 90 | 56 - 130 |
| Benzo[a]anthracene | 0.333 | 0.326 | | mg/Kg | | 98 | 64 - 130 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCS 400-251961/5-A

Matrix: Solid

Analysis Batch: 252114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 251961

| Surrogate | LCS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 86 | | 27 - 127 |
| Terphenyl-d14 (Surr) | 93 | | 24 - 146 |
| Nitrobenzene-d5 (Surr) | 76 | | 15 - 136 |

Lab Sample ID: 640-50841-A-1-B MS

Matrix: Solid

Analysis Batch: 252114

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 251961

| Analyte | Sample | Sample | Spike | MS | | Unit | D | %Rec | %Rec. | Limits |
|------------------------|---------|-----------|-------|--------|-----------|-------|---|------|----------|--------|
| | Result | Qualifier | | Result | Qualifier | | | | | |
| Acenaphthene | <0.0065 | | 0.333 | 0.284 | | mg/Kg | | 85 | 40 - 140 | |
| Acenaphthylene | <0.0065 | | 0.333 | 0.287 | | mg/Kg | | 86 | 40 - 140 | |
| Anthracene | <0.0065 | | 0.333 | 0.298 | | mg/Kg | | 90 | 40 - 140 | |
| Benzo[a]pyrene | <0.0065 | | 0.333 | 0.284 | | mg/Kg | | 85 | 40 - 140 | |
| Benzo[b]fluoranthene | <0.0065 | | 0.333 | 0.318 | | mg/Kg | | 96 | 40 - 140 | |
| Benzo[g,h,i]perylene | <0.0065 | | 0.333 | 0.278 | | mg/Kg | | 84 | 40 - 140 | |
| Benzo[k]fluoranthene | <0.0065 | | 0.333 | 0.268 | | mg/Kg | | 81 | 40 - 140 | |
| Chrysene | <0.0065 | | 0.333 | 0.280 | | mg/Kg | | 83 | 40 - 140 | |
| Dibenz(a,h)anthracene | <0.0065 | | 0.333 | 0.291 | | mg/Kg | | 87 | 40 - 140 | |
| Fluoranthene | 0.0067 | | 0.333 | 0.297 | | mg/Kg | | 87 | 40 - 140 | |
| Fluorene | <0.0065 | | 0.333 | 0.286 | | mg/Kg | | 86 | 40 - 140 | |
| Indeno[1,2,3-cd]pyrene | <0.0065 | | 0.333 | 0.308 | | mg/Kg | | 93 | 40 - 140 | |
| Naphthalene | 0.23 | | 0.333 | 0.490 | | mg/Kg | | 77 | 40 - 140 | |
| Phenanthrene | <0.0065 | | 0.333 | 0.293 | | mg/Kg | | 88 | 40 - 140 | |
| 1-Methylnaphthalene | 0.12 | | 0.333 | 0.390 | | mg/Kg | | 80 | 40 - 140 | |
| Pyrene | <0.0065 | | 0.333 | 0.293 | | mg/Kg | | 86 | 40 - 140 | |
| 2-Methylnaphthalene | 0.20 | | 0.333 | 0.456 | | mg/Kg | | 77 | 40 - 140 | |
| Benzo[a]anthracene | <0.0065 | | 0.333 | 0.294 | | mg/Kg | | 88 | 40 - 140 | |

| Surrogate | MS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 76 | | 27 - 127 |
| Terphenyl-d14 (Surr) | 80 | | 24 - 146 |
| Nitrobenzene-d5 (Surr) | 70 | | 15 - 136 |

Lab Sample ID: 640-50841-A-1-C MSD

Matrix: Solid

Analysis Batch: 252114

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 251961

| Analyte | Sample | Sample | Spike | MSD | | Unit | D | %Rec | %Rec. | Limits | RPD | |
|-----------------------|---------|-----------|-------|--------|-----------|-------|---|------|----------|--------|-----|-------|
| | Result | Qualifier | | Result | Qualifier | | | | | | RPD | Limit |
| Acenaphthene | <0.0065 | | 0.328 | 0.313 | | mg/Kg | | 95 | 40 - 140 | 10 | 30 | |
| Acenaphthylene | <0.0065 | | 0.328 | 0.317 | | mg/Kg | | 97 | 40 - 140 | 10 | 30 | |
| Anthracene | <0.0065 | | 0.328 | 0.323 | | mg/Kg | | 98 | 40 - 140 | 8 | 30 | |
| Benzo[a]pyrene | <0.0065 | | 0.328 | 0.308 | | mg/Kg | | 94 | 40 - 140 | 8 | 30 | |
| Benzo[b]fluoranthene | <0.0065 | | 0.328 | 0.340 | | mg/Kg | | 104 | 40 - 140 | 7 | 30 | |
| Benzo[g,h,i]perylene | <0.0065 | | 0.328 | 0.307 | | mg/Kg | | 94 | 40 - 140 | 10 | 30 | |
| Benzo[k]fluoranthene | <0.0065 | | 0.328 | 0.293 | | mg/Kg | | 89 | 40 - 140 | 9 | 30 | |
| Chrysene | <0.0065 | | 0.328 | 0.318 | | mg/Kg | | 96 | 40 - 140 | 13 | 30 | |
| Dibenz(a,h)anthracene | <0.0065 | | 0.328 | 0.315 | | mg/Kg | | 96 | 40 - 140 | 8 | 30 | |
| Fluoranthene | 0.0067 | | 0.328 | 0.325 | | mg/Kg | | 97 | 40 - 140 | 9 | 30 | |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: 640-50841-A-1-C MSD

Matrix: Solid

Analysis Batch: 252114

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 251961

| Analyte | Sample | Sample | Spike | MSD | MSD | Unit | D | %Rec | %Rec. | RPD | Limit |
|------------------------|---------|-----------|-------|--------|-----------|-------|---|------|----------|-----|-------|
| | Result | Qualifier | Added | Result | Qualifier | | | | Limits | | |
| Fluorene | <0.0065 | | 0.328 | 0.313 | | mg/Kg | | 95 | 40 - 140 | 9 | 30 |
| Indeno[1,2,3-cd]pyrene | <0.0065 | | 0.328 | 0.332 | | mg/Kg | | 101 | 40 - 140 | 7 | 30 |
| Naphthalene | 0.23 | | 0.328 | 0.570 | | mg/Kg | | 103 | 40 - 140 | 15 | 30 |
| Phenanthrene | <0.0065 | | 0.328 | 0.321 | | mg/Kg | | 98 | 40 - 140 | 9 | 30 |
| 1-Methylnaphthalene | 0.12 | | 0.328 | 0.428 | | mg/Kg | | 93 | 40 - 140 | 9 | 30 |
| Pyrene | <0.0065 | | 0.328 | 0.339 | | mg/Kg | | 102 | 40 - 140 | 15 | 30 |
| 2-Methylnaphthalene | 0.20 | | 0.328 | 0.513 | | mg/Kg | | 95 | 40 - 140 | 12 | 30 |
| Benzo[a]anthracene | <0.0065 | | 0.328 | 0.328 | | mg/Kg | | 100 | 40 - 140 | 11 | 30 |

| Surrogate | MSD | MSD | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 82 | | 27 - 127 |
| Terphenyl-d14 (Surr) | 92 | | 24 - 146 |
| Nitrobenzene-d5 (Surr) | 74 | | 15 - 136 |

Lab Sample ID: LCS 400-252184/2-A

Matrix: Solid

Analysis Batch: 252581

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 252184

| Analyte | Spike Added | LCS | LCS | Unit | D | %Rec | %Rec. |
|------------------------|-------------|---------|-----------|------|---|------|----------|
| | | Result | Qualifier | | | | Limits |
| Acenaphthene | 0.00500 | 0.00437 | | mg/L | | 87 | 41 - 120 |
| Acenaphthylene | 0.00500 | 0.00440 | | mg/L | | 88 | 44 - 120 |
| Anthracene | 0.00500 | 0.00448 | | mg/L | | 90 | 49 - 120 |
| Benzo[a]pyrene | 0.00500 | 0.00442 | | mg/L | | 88 | 52 - 120 |
| Benzo[b]fluoranthene | 0.00500 | 0.00453 | | mg/L | | 91 | 53 - 134 |
| Benzo[g,h,i]perylene | 0.00500 | 0.00493 | | mg/L | | 99 | 47 - 133 |
| Benzo[k]fluoranthene | 0.00500 | 0.00424 | | mg/L | | 85 | 57 - 134 |
| Chrysene | 0.00500 | 0.00447 | | mg/L | | 89 | 55 - 122 |
| Dibenz(a,h)anthracene | 0.00500 | 0.00467 | | mg/L | | 93 | 48 - 146 |
| Fluoranthene | 0.00500 | 0.00462 | | mg/L | | 92 | 54 - 128 |
| Fluorene | 0.00500 | 0.00461 | | mg/L | | 92 | 45 - 120 |
| Indeno[1,2,3-cd]pyrene | 0.00500 | 0.00482 | | mg/L | | 96 | 43 - 142 |
| Naphthalene | 0.00500 | 0.00556 | | mg/L | | 111 | 39 - 120 |
| Phenanthrene | 0.00500 | 0.00453 | | mg/L | | 91 | 48 - 120 |
| 1-Methylnaphthalene | 0.00500 | 0.00443 | | mg/L | | 89 | 41 - 120 |
| Pyrene | 0.00500 | 0.00449 | | mg/L | | 90 | 48 - 132 |
| 2-Methylnaphthalene | 0.00500 | 0.00436 | | mg/L | | 87 | 32 - 124 |
| Benzo[a]anthracene | 0.00500 | 0.00436 | | mg/L | | 87 | 61 - 135 |

| Surrogate | LCS | LCS | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 86 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 89 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 88 | | 19 - 130 |

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LB 400-251990/1-C

Matrix: Solid

Analysis Batch: 252581

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 252184

| Analyte | LB Result | LB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|--------------|---------|-----|------|---|----------------|----------------|---------|
| Acenaphthene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Acenaphthylene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Anthracene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Benzo[a]pyrene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Benzo[b]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Benzo[g,h,i]perylene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Benzo[k]fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Chrysene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Dibenz(a,h)anthracene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Fluoranthene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Fluorene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Naphthalene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Phenanthrene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| 1-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Pyrene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| 2-Methylnaphthalene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Benzo[a]anthracene | <0.00025 | | 0.00025 | | mg/L | | 04/03/15 15:12 | 04/08/15 10:36 | 1 |

| Surrogate | LB %Recovery | LB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------|--------------|--------------|----------|----------------|----------------|---------|
| 2-Fluorobiphenyl | 78 | | 15 - 122 | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Terphenyl-d14 (Surr) | 83 | | 33 - 138 | 04/03/15 15:12 | 04/08/15 10:36 | 1 |
| Nitrobenzene-d5 (Surr) | 79 | | 19 - 130 | 04/03/15 15:12 | 04/08/15 10:36 | 1 |

Lab Sample ID: 400-102502-3 MS

Matrix: Solid

Analysis Batch: 252578

Client Sample ID: LH-21 (0-6)

Prep Type: SPLP West

Prep Batch: 252184

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Acenaphthene | <0.00025 | H | 0.00625 | 0.00549 | | mg/L | | 88 | 35 - 113 |
| Acenaphthylene | <0.00025 | H | 0.00625 | 0.00533 | | mg/L | | 85 | 41 - 118 |
| Anthracene | <0.00025 | H | 0.00625 | 0.00544 | | mg/L | | 87 | 45 - 122 |
| Benzo[a]pyrene | <0.00025 | H | 0.00625 | 0.00538 | | mg/L | | 86 | 50 - 108 |
| Benzo[b]fluoranthene | <0.00025 | H | 0.00625 | 0.00629 | | mg/L | | 101 | 50 - 128 |
| Benzo[g,h,i]perylene | <0.00025 | H | 0.00625 | 0.00519 | | mg/L | | 83 | 46 - 133 |
| Benzo[k]fluoranthene | <0.00025 | H | 0.00625 | 0.00567 | | mg/L | | 91 | 52 - 128 |
| Chrysene | <0.00025 | H | 0.00625 | 0.00574 | | mg/L | | 92 | 52 - 116 |
| Dibenz(a,h)anthracene | <0.00025 | H | 0.00625 | 0.00609 | | mg/L | | 98 | 52 - 143 |
| Fluoranthene | <0.00025 | H | 0.00625 | 0.00595 | | mg/L | | 95 | 32 - 150 |
| Fluorene | <0.00025 | H | 0.00625 | 0.00564 | | mg/L | | 90 | 15 - 150 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | H | 0.00625 | 0.00597 | | mg/L | | 95 | 41 - 141 |
| Naphthalene | <0.00025 | H | 0.00625 | 0.00529 | | mg/L | | 85 | 10 - 150 |
| Phenanthrene | <0.00025 | H | 0.00625 | 0.00559 | | mg/L | | 89 | 36 - 125 |
| 1-Methylnaphthalene | <0.00025 | H | 0.00625 | 0.00563 | | mg/L | | 90 | 10 - 150 |
| Pyrene | <0.00025 | H | 0.00625 | 0.00549 | | mg/L | | 88 | 41 - 127 |
| 2-Methylnaphthalene | <0.00025 | H | 0.00625 | 0.00563 | | mg/L | | 90 | 10 - 150 |
| Benzo[a]anthracene | <0.00025 | H | 0.00625 | 0.00578 | | mg/L | | 93 | 55 - 133 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: 400-102502-3 MS

Matrix: Solid

Analysis Batch: 252578

Client Sample ID: LH-21 (0-6)

Prep Type: SPLP West

Prep Batch: 252184

| Surrogate | MS MS | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 81 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 83 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 75 | | 19 - 130 |

Lab Sample ID: 400-102502-3 MSD

Matrix: Solid

Analysis Batch: 252578

Client Sample ID: LH-21 (0-6)

Prep Type: SPLP West

Prep Batch: 252184

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD MSD | | Unit | D | %Rec | %Rec. | | RPD | Limit |
|------------------------|---------------|------------------|-------------|---------|-----------|------|---|------|----------|-----|-----|-------|
| | | | | Result | Qualifier | | | | Limits | RPD | | |
| Acenaphthene | <0.00025 | H | 0.00625 | 0.00550 | | mg/L | | 88 | 35 - 113 | 0 | | 49 |
| Acenaphthylene | <0.00025 | H | 0.00625 | 0.00550 | | mg/L | | 88 | 41 - 118 | 3 | | 48 |
| Anthracene | <0.00025 | H | 0.00625 | 0.00550 | | mg/L | | 88 | 45 - 122 | 1 | | 56 |
| Benzo[a]pyrene | <0.00025 | H | 0.00625 | 0.00586 | | mg/L | | 94 | 50 - 108 | 8 | | 59 |
| Benzo[b]fluoranthene | <0.00025 | H | 0.00625 | 0.00639 | | mg/L | | 102 | 50 - 128 | 1 | | 62 |
| Benzo[g,h,i]perylene | <0.00025 | H | 0.00625 | 0.00515 | | mg/L | | 82 | 46 - 133 | 1 | | 58 |
| Benzo[k]fluoranthene | <0.00025 | H | 0.00625 | 0.00575 | | mg/L | | 92 | 52 - 128 | 1 | | 58 |
| Chrysene | <0.00025 | H | 0.00625 | 0.00574 | | mg/L | | 92 | 52 - 116 | 0 | | 59 |
| Dibenz(a,h)anthracene | <0.00025 | H | 0.00625 | 0.00611 | | mg/L | | 98 | 52 - 143 | 0 | | 60 |
| Fluoranthene | <0.00025 | H | 0.00625 | 0.00588 | | mg/L | | 94 | 32 - 150 | 1 | | 59 |
| Fluorene | <0.00025 | H | 0.00625 | 0.00563 | | mg/L | | 90 | 15 - 150 | 0 | | 49 |
| Indeno[1,2,3-cd]pyrene | <0.00025 | H | 0.00625 | 0.00573 | | mg/L | | 92 | 41 - 141 | 4 | | 58 |
| Naphthalene | <0.00025 | H | 0.00625 | 0.00540 | | mg/L | | 86 | 10 - 150 | 2 | | 121 |
| Phenanthrene | <0.00025 | H | 0.00625 | 0.00562 | | mg/L | | 90 | 36 - 125 | 1 | | 69 |
| 1-Methylnaphthalene | <0.00025 | H | 0.00625 | 0.00572 | | mg/L | | 92 | 10 - 150 | 2 | | 66 |
| Pyrene | <0.00025 | H | 0.00625 | 0.00560 | | mg/L | | 90 | 41 - 127 | 2 | | 58 |
| 2-Methylnaphthalene | <0.00025 | H | 0.00625 | 0.00570 | | mg/L | | 91 | 10 - 150 | 1 | | 66 |
| Benzo[a]anthracene | <0.00025 | H | 0.00625 | 0.00593 | | mg/L | | 95 | 55 - 133 | 2 | | 57 |

| Surrogate | MSD MSD | | Limits |
|------------------------|-----------|-----------|----------|
| | %Recovery | Qualifier | |
| 2-Fluorobiphenyl | 80 | | 15 - 122 |
| Terphenyl-d14 (Surr) | 83 | | 33 - 138 |
| Nitrobenzene-d5 (Surr) | 74 | | 19 - 130 |

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 400-252248/6-A

Matrix: Solid

Analysis Batch: 253130

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 252248

| Analyte | Spike Added | LCS LCS | | Unit | D | %Rec | %Rec. | |
|----------|-------------|---------|-----------|------|---|------|----------|-----|
| | | Result | Qualifier | | | | Limits | RPD |
| Arsenic | 1.00 | 0.920 | | mg/L | | 92 | 80 - 120 | |
| Cadmium | 0.500 | 0.458 | | mg/L | | 92 | 80 - 120 | |
| Nickel | 1.00 | 0.956 | | mg/L | | 96 | 80 - 120 | |
| Lead | 1.00 | 0.959 | | mg/L | | 96 | 80 - 120 | |
| Vanadium | 1.00 | 0.985 | | mg/L | | 99 | 80 - 120 | |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 400-252253/1-A
Matrix: Solid
Analysis Batch: 252600

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 252253

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|-----------|--------------|------|-----|-------|---|----------------|----------------|---------|
| Arsenic | <0.98 | | 0.98 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 00:28 | 1 |
| Cadmium | <0.49 | | 0.49 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 00:28 | 1 |
| Nickel | <0.49 | | 0.49 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 00:28 | 1 |
| Lead | <0.98 | | 0.98 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 00:28 | 1 |
| Vanadium | <0.98 | | 0.98 | | mg/Kg | | 04/05/15 18:28 | 04/08/15 00:28 | 1 |

Lab Sample ID: LCS 400-252253/2-A
Matrix: Solid
Analysis Batch: 252600

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 252253

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|-------|---|------|--------------|
| Arsenic | 92.0 | 81.9 | | mg/Kg | | 89 | 80 - 120 |
| Cadmium | 46.0 | 44.5 | | mg/Kg | | 97 | 80 - 120 |
| Nickel | 92.0 | 93.5 | | mg/Kg | | 102 | 80 - 120 |
| Lead | 92.0 | 94.1 | | mg/Kg | | 102 | 80 - 120 |
| Vanadium | 92.0 | 94.8 | | mg/Kg | | 103 | 80 - 120 |

Lab Sample ID: 400-103635-A-46-G MS
Matrix: Solid
Analysis Batch: 252600

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 252253

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|-------|---|------|--------------|
| Arsenic | 19 | F1 | 95.1 | 88.6 | F1 | mg/Kg | | 74 | 75 - 125 |
| Cadmium | 2.5 | | 47.6 | 41.5 | | mg/Kg | | 82 | 75 - 125 |
| Nickel | 74 | F1 | 95.1 | 126 | F1 | mg/Kg | | 55 | 75 - 125 |
| Vanadium | 21 | | 95.1 | 111 | | mg/Kg | | 94 | 75 - 125 |

Lab Sample ID: 400-103635-A-46-H MSD
Matrix: Solid
Analysis Batch: 252600

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 252253

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------|---------------|------------------|-------------|------------|---------------|-------|---|------|--------------|-----|-----------|
| Arsenic | 19 | F1 | 93.3 | 88.9 | | mg/Kg | | 75 | 75 - 125 | 0 | 20 |
| Cadmium | 2.5 | | 46.7 | 41.4 | | mg/Kg | | 83 | 75 - 125 | 0 | 20 |
| Nickel | 74 | F1 | 93.3 | 121 | F1 | mg/Kg | | 49 | 75 - 125 | 5 | 20 |
| Lead | 2200 | E | 93.3 | 2420 | E 4 | mg/Kg | | 220 | 75 - 125 | 12 | 20 |
| Vanadium | 21 | | 93.3 | 105 | | mg/Kg | | 90 | 75 - 125 | 5 | 20 |

Lab Sample ID: LB 400-251990/1-E
Matrix: Solid
Analysis Batch: 253130

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 252248

| Analyte | LB Result | LB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|-----------|--------------|--------|-----|------|---|----------------|----------------|---------|
| Arsenic | <0.0050 | | 0.0050 | | mg/L | | 04/05/15 14:14 | 04/10/15 18:15 | 1 |
| Cadmium | <0.0050 | | 0.0050 | | mg/L | | 04/05/15 14:14 | 04/10/15 18:15 | 1 |
| Nickel | <0.0050 | | 0.0050 | | mg/L | | 04/05/15 14:14 | 04/10/15 18:15 | 1 |
| Lead | <0.0050 | | 0.0050 | | mg/L | | 04/05/15 14:14 | 04/10/15 18:15 | 1 |
| Vanadium | <0.010 | | 0.010 | | mg/L | | 04/05/15 14:14 | 04/10/15 18:15 | 1 |

TestAmerica Pensacola

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 400-102502-3 MS
Matrix: Solid
Analysis Batch: 253130

Client Sample ID: LH-21 (0-6)
Prep Type: SPLP West
Prep Batch: 252248

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Arsenic | <0.0050 | | 1.00 | 0.955 | | mg/L | | 95 | 75 - 125 |
| Cadmium | <0.0050 | | 0.500 | 0.476 | | mg/L | | 95 | 75 - 125 |
| Nickel | <0.0050 | | 1.00 | 0.994 | | mg/L | | 99 | 75 - 125 |
| Lead | <0.0050 | | 1.00 | 1.01 | | mg/L | | 101 | 75 - 125 |
| Vanadium | <0.010 | | 1.00 | 1.02 | | mg/L | | 101 | 75 - 125 |

Lab Sample ID: 400-102502-3 MSD
Matrix: Solid
Analysis Batch: 253130

Client Sample ID: LH-21 (0-6)
Prep Type: SPLP West
Prep Batch: 252248

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Arsenic | <0.0050 | | 1.00 | 0.935 | | mg/L | | 93 | 75 - 125 | 2 | 20 |
| Cadmium | <0.0050 | | 0.500 | 0.466 | | mg/L | | 93 | 75 - 125 | 2 | 20 |
| Nickel | <0.0050 | | 1.00 | 0.965 | | mg/L | | 97 | 75 - 125 | 3 | 20 |
| Lead | <0.0050 | | 1.00 | 0.975 | | mg/L | | 98 | 75 - 125 | 4 | 20 |
| Vanadium | <0.010 | | 1.00 | 0.983 | | mg/L | | 98 | 75 - 125 | 3 | 20 |

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LCS 400-252180/14-A
Matrix: Solid
Analysis Batch: 252379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 252180

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Mercury | 0.00806 | 0.00757 | | mg/L | | 94 | 80 - 120 |

Lab Sample ID: 400-103811-A-3-C MS
Matrix: Solid
Analysis Batch: 252379

Client Sample ID: Matrix Spike
Prep Type: TCLP
Prep Batch: 252180

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Mercury | <0.0016 | | 0.0161 | 0.0141 | | mg/L | | 87 | 80 - 120 |

Lab Sample ID: 400-103811-A-3-D MSD
Matrix: Solid
Analysis Batch: 252379

Client Sample ID: Matrix Spike Duplicate
Prep Type: TCLP
Prep Batch: 252180

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Mercury | <0.0016 | | 0.0161 | 0.0142 | | mg/L | | 88 | 80 - 120 | 1 | 20 |

Lab Sample ID: LB2 400-252028/13-C
Matrix: Solid
Analysis Batch: 252379

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 252180

| Analyte | LB2 Result | LB2 Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|------------|---------------|--------|-----|------|---|----------------|----------------|---------|
| Mercury | <0.0016 | | 0.0016 | | mg/L | | 04/03/15 14:36 | 04/06/15 09:21 | 1 |

QC Sample Results

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 400-252293/14-A

Matrix: Solid

Analysis Batch: 252703

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 252293

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|-----------|--------------|-------|-----|-------|---|----------------|----------------|---------|
| Mercury | <0.013 | | 0.013 | | mg/Kg | | 04/06/15 08:36 | 04/08/15 13:36 | 1 |

Lab Sample ID: LCS 400-252293/15-A

Matrix: Solid

Analysis Batch: 252703

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 252293

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|-------|---|------|--------------|
| Mercury | 0.0668 | 0.0726 | | mg/Kg | | 109 | 80 - 120 |

Method: 2540G - Percent Solids

Lab Sample ID: MB 400-252572/1

Matrix: Solid

Analysis Batch: 252572

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|-----------|--------------|------|-----|------|---|----------|----------------|---------|
| Total Solids | <0.10 | | 0.10 | | % | | | 04/07/15 19:17 | 1 |

Lab Sample ID: LCS 400-252572/2

Matrix: Solid

Analysis Batch: 252572

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------|-------------|------------|---------------|------|---|------|--------------|
| Total Solids | 0.0758 | <0.10 | | % | | 100 | 86 - 113 |

Lab Sample ID: 400-102502-1 DU

Matrix: Solid

Analysis Batch: 252572

Client Sample ID: LH-19 (0-6)

Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|--------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Total Solids | 80 | H | 79.2 | | % | | 0.5 | 4 |

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

GC/MS Semi VOA

Prep Batch: 251961

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | Total/NA | Solid | 3546 | |
| 640-50841-A-1-B MS | Matrix Spike | Total/NA | Solid | 3546 | |
| 640-50841-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 3546 | |
| LCS 400-251961/5-A | Lab Control Sample | Total/NA | Solid | 3546 | |
| MB 400-251961/6-A | Method Blank | Total/NA | Solid | 3546 | |

Leach Batch: 251990

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | SPLP West | Solid | 1312 | |
| 400-102502-3 MS | LH-21 (0-6) | SPLP West | Solid | 1312 | |
| 400-102502-3 MSD | LH-21 (0-6) | SPLP West | Solid | 1312 | |
| LB 400-251990/1-C | Method Blank | SPLP West | Solid | 1312 | |

Analysis Batch: 252114

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|----------|------------|
| 400-102502-3 | LH-21 (0-6) | Total/NA | Solid | 8270D LL | 251961 |
| 640-50841-A-1-B MS | Matrix Spike | Total/NA | Solid | 8270D LL | 251961 |
| 640-50841-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8270D LL | 251961 |
| LCS 400-251961/5-A | Lab Control Sample | Total/NA | Solid | 8270D LL | 251961 |
| MB 400-251961/6-A | Method Blank | Total/NA | Solid | 8270D LL | 251961 |

Prep Batch: 252184

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | SPLP West | Solid | 3520C | 251990 |
| 400-102502-3 MS | LH-21 (0-6) | SPLP West | Solid | 3520C | 251990 |
| 400-102502-3 MSD | LH-21 (0-6) | SPLP West | Solid | 3520C | 251990 |
| LB 400-251990/1-C | Method Blank | SPLP West | Solid | 3520C | 251990 |
| LCS 400-252184/2-A | Lab Control Sample | Total/NA | Solid | 3520C | |

Analysis Batch: 252578

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|------------------|-----------|--------|----------|------------|
| 400-102502-3 | LH-21 (0-6) | SPLP West | Solid | 8270D LL | 252184 |
| 400-102502-3 MS | LH-21 (0-6) | SPLP West | Solid | 8270D LL | 252184 |
| 400-102502-3 MSD | LH-21 (0-6) | SPLP West | Solid | 8270D LL | 252184 |

Analysis Batch: 252581

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|----------|------------|
| LB 400-251990/1-C | Method Blank | SPLP West | Solid | 8270D LL | 252184 |
| LCS 400-252184/2-A | Lab Control Sample | Total/NA | Solid | 8270D LL | 252184 |

Metals

Leach Batch: 251990

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | SPLP West | Solid | 1312 | |
| 400-102502-3 MS | LH-21 (0-6) | SPLP West | Solid | 1312 | |
| 400-102502-3 MSD | LH-21 (0-6) | SPLP West | Solid | 1312 | |
| LB 400-251990/1-E | Method Blank | SPLP West | Solid | 1312 | |

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
 Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Metals (Continued)

Leach Batch: 252028

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-103811-A-3-C MS | Matrix Spike | TCLP | Solid | 1311 | |
| 400-103811-A-3-D MSD | Matrix Spike Duplicate | TCLP | Solid | 1311 | |
| LB2 400-252028/13-C | Method Blank | SPLP West | Solid | 1311 | |

Prep Batch: 252180

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | SPLP West | Solid | 7470A | 251990 |
| 400-103811-A-3-C MS | Matrix Spike | TCLP | Solid | 7470A | 252028 |
| 400-103811-A-3-D MSD | Matrix Spike Duplicate | TCLP | Solid | 7470A | 252028 |
| LB2 400-252028/13-C | Method Blank | SPLP West | Solid | 7470A | 252028 |
| LCS 400-252180/14-A | Lab Control Sample | Total/NA | Solid | 7470A | |

Prep Batch: 252248

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | SPLP West | Solid | 3010A | 251990 |
| 400-102502-3 MS | LH-21 (0-6) | SPLP West | Solid | 3010A | 251990 |
| 400-102502-3 MSD | LH-21 (0-6) | SPLP West | Solid | 3010A | 251990 |
| LB 400-251990/1-E | Method Blank | SPLP West | Solid | 3010A | 251990 |
| LCS 400-252248/6-A | Lab Control Sample | Total/NA | Solid | 3010A | |

Prep Batch: 252253

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------------|------------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | Total/NA | Solid | 3050B | |
| 400-103635-A-46-G MS | Matrix Spike | Total/NA | Solid | 3050B | |
| 400-103635-A-46-H MSD | Matrix Spike Duplicate | Total/NA | Solid | 3050B | |
| LCS 400-252253/2-A | Lab Control Sample | Total/NA | Solid | 3050B | |
| MB 400-252253/1-A | Method Blank | Total/NA | Solid | 3050B | |

Prep Batch: 252293

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|--------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | Total/NA | Solid | 7471B | |
| LCS 400-252293/15-A | Lab Control Sample | Total/NA | Solid | 7471B | |
| MB 400-252293/14-A | Method Blank | Total/NA | Solid | 7471B | |

Analysis Batch: 252379

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | SPLP West | Solid | 7470A | 252180 |
| 400-103811-A-3-C MS | Matrix Spike | TCLP | Solid | 7470A | 252180 |
| 400-103811-A-3-D MSD | Matrix Spike Duplicate | TCLP | Solid | 7470A | 252180 |
| LB2 400-252028/13-C | Method Blank | SPLP West | Solid | 7470A | 252180 |
| LCS 400-252180/14-A | Lab Control Sample | Total/NA | Solid | 7470A | 252180 |

Analysis Batch: 252600

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------------|------------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | Total/NA | Solid | 6010C | 252253 |
| 400-103635-A-46-G MS | Matrix Spike | Total/NA | Solid | 6010C | 252253 |
| 400-103635-A-46-H MSD | Matrix Spike Duplicate | Total/NA | Solid | 6010C | 252253 |
| LCS 400-252253/2-A | Lab Control Sample | Total/NA | Solid | 6010C | 252253 |
| MB 400-252253/1-A | Method Blank | Total/NA | Solid | 6010C | 252253 |

QC Association Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Metals (Continued)

Analysis Batch: 252703

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|--------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | Total/NA | Solid | 7471B | 252293 |
| LCS 400-252293/15-A | Lab Control Sample | Total/NA | Solid | 7471B | 252293 |
| MB 400-252293/14-A | Method Blank | Total/NA | Solid | 7471B | 252293 |

Analysis Batch: 253130

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 400-102502-3 | LH-21 (0-6) | SPLP West | Solid | 6010C | 252248 |
| 400-102502-3 MS | LH-21 (0-6) | SPLP West | Solid | 6010C | 252248 |
| 400-102502-3 MSD | LH-21 (0-6) | SPLP West | Solid | 6010C | 252248 |
| LB 400-251990/1-E | Method Blank | SPLP West | Solid | 6010C | 252248 |
| LCS 400-252248/6-A | Lab Control Sample | Total/NA | Solid | 6010C | 252248 |

General Chemistry

Analysis Batch: 252572

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 400-102502-1 | LH-19 (0-6) | Total/NA | Solid | 2540G | |
| 400-102502-1 DU | LH-19 (0-6) | Total/NA | Solid | 2540G | |
| 400-102502-2 | LH-20 (0-6) | Total/NA | Solid | 2540G | |
| 400-102502-3 | LH-21 (0-6) | Total/NA | Solid | 2540G | |
| 400-102502-4 | BD-15 (0-6) | Total/NA | Solid | 2540G | |
| LCS 400-252572/2 | Lab Control Sample | Total/NA | Solid | 2540G | |
| MB 400-252572/1 | Method Blank | Total/NA | Solid | 2540G | |

Lab Chronicle

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Client Sample ID: LH-19 (0-6)

Date Collected: 02/26/15 10:50

Date Received: 02/28/15 11:00

Lab Sample ID: 400-102502-1

Matrix: Solid

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 2540G | | 1 | 252572 | 04/07/15 19:17 | SLT | TAL PEN |

Client Sample ID: LH-20 (0-6)

Date Collected: 02/26/15 11:20

Date Received: 02/28/15 11:00

Lab Sample ID: 400-102502-2

Matrix: Solid

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 2540G | | 1 | 252572 | 04/07/15 19:17 | SLT | TAL PEN |

Client Sample ID: LH-21 (0-6)

Date Collected: 02/26/15 13:15

Date Received: 02/28/15 11:00

Lab Sample ID: 400-102502-3

Matrix: Solid

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| SPLP West | Leach | 1312 | | | 251990 | 04/02/15 11:02 | DAS | TAL PEN |
| SPLP West | Prep | 3520C | | | 252184 | 04/03/15 15:12 | KH1 | TAL PEN |
| SPLP West | Analysis | 8270D LL | | 1 | 252578 | 04/08/15 12:54 | AJR | TAL PEN |
| Total/NA | Prep | 3546 | | | 251961 | 04/02/15 09:23 | RDT | TAL PEN |
| Total/NA | Analysis | 8270D LL | | 1 | 252114 | 04/03/15 18:11 | CEP | TAL PEN |
| SPLP West | Leach | 1312 | | | 251990 | 04/02/15 11:02 | DAS | TAL PEN |
| SPLP West | Prep | 3010A | | | 252248 | 04/05/15 14:14 | DN1 | TAL PEN |
| SPLP West | Analysis | 6010C | | 1 | 253130 | 04/10/15 17:49 | RJB | TAL PEN |
| Total/NA | Prep | 3050B | | | 252253 | 04/05/15 18:28 | DN1 | TAL PEN |
| Total/NA | Analysis | 6010C | | 1 | 252600 | 04/08/15 01:40 | RJB | TAL PEN |
| SPLP West | Leach | 1312 | | | 251990 | 04/02/15 11:02 | DAS | TAL PEN |
| SPLP West | Prep | 7470A | | | 252180 | 04/03/15 14:36 | JAP | TAL PEN |
| SPLP West | Analysis | 7470A | | 1 | 252379 | 04/06/15 10:22 | JAP | TAL PEN |
| Total/NA | Prep | 7471B | | | 252293 | 04/06/15 08:36 | JAP | TAL PEN |
| Total/NA | Analysis | 7471B | | 1 | 252703 | 04/08/15 13:44 | JAP | TAL PEN |
| Total/NA | Analysis | 2540G | | 1 | 252572 | 04/07/15 19:17 | SLT | TAL PEN |

Client Sample ID: BD-15 (0-6)

Date Collected: 02/26/15 16:00

Date Received: 02/28/15 11:00

Lab Sample ID: 400-102502-4

Matrix: Solid

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 2540G | | 1 | 252572 | 04/07/15 19:17 | SLT | TAL PEN |

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Certification Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

Laboratory: TestAmerica Pensacola

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|-----------|---------|------------|------------------|-----------------|
| Louisiana | NELAP | 6 | 30976 | 06-30-15 |

The following analytes are included in this report, but are not certified under this certification:

| Analysis Method | Prep Method | Matrix | Analyte |
|-----------------|-------------|--------|--------------|
| 2540G | | Solid | Total Solids |

The following analytes are included in this report, but certification is not offered by the governing authority:

| Analysis Method | Prep Method | Matrix | Analyte |
|-----------------|-------------|--------|------------------|
| 2540G | | Solid | Percent Moisture |
| 7470A | 7470A | Solid | Mercury |

Method Summary

Client: CB&I Environmental & Infrastructure, Inc
Project/Site: CPRA Coal Study

TestAmerica Job ID: 400-102502-2

| Method | Method Description | Protocol | Laboratory |
|----------|---|----------|------------|
| 8270D LL | Semivolatile Organic Compounds by GC/MS - Low Level | SW846 | TAL PEN |
| 6010C | Metals (ICP) | SW846 | TAL PEN |
| 7470A | Mercury (CVAA) | SW846 | TAL PEN |
| 7471B | Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) | SW846 | TAL PEN |
| 2540G | Percent Solids | SM20 | TAL PEN |

Protocol References:

SM20 = "Standard Methods For The Examination Of Water And Wastewater", 20th Edition."

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



Login Sample Receipt Checklist

Client: CB&I Environmental & Infrastructure, Inc

Job Number: 400-102502-2

Login Number: 102502

List Source: TestAmerica Pensacola

List Number: 1

Creator: Crawford, Lauren E

| Question | Answer | Comment |
|--|--------|------------|
| Radioactivity wasn't checked or is <=/ background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 1.4°C IR-2 |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |



03/18/15

Technical Report for

CK Associates- Baton Rouge

CB&I/CPRA

Accutest Job Number: LA3680

Sampling Date: 02/13/15

Report to:

**C-K ASSOCIATES, INC.
17170 PERKINS ROAD
BATON ROUGE, LA 70810
gus.zieske@c-ka.com**

ATTN: Gus Zieske

Total number of pages in report: 34



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Elizabeth Martin 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), FL(E87657), KY(#31), NC(487), SC(73004001), TX(T104704186-15-7), WV(257)

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Test results relate only to samples analyzed.

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Sample Summary

CK Associates- Baton Rouge

Job No: LA3680

CB&I/CPRA

| Sample Number | Collected | | Matrix | Received | Code | Type | Client Sample ID |
|---------------|-----------|----------|----------|----------|----------|-------|------------------|
| | Date | Time By | | | | | |
| LA3680-1 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | SI-BG | |
| LA3680-2 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | SI-01 | |
| LA3680-3 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | SI-09 | |
| LA3680-4 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | LH-BG | |
| LA3680-5 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | BD-01 | |
| LA3680-6 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | BD-05 | |
| LA3680-7 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | BD-09 | |
| LA3680-8 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | BD-10 | |
| LA3680-9 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | BD-BG | |
| LA3680-10 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | LH-04 | |
| LA3680-11 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | LH-08 | |
| LA3680-12 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | LH-16 | |
| LA3680-13 | 02/13/15 | 16:00 GZ | 02/18/15 | SO | Sediment | LG-17 | |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: LA3680
Account: CK Associates- Baton Rouge
Project: CB&I/CPRA
Collected: 02/13/15

| Lab Sample ID | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---------------|------------------|-----------------|----|-----|-------|--------|
|---------------|------------------|-----------------|----|-----|-------|--------|

LA3680-1 SI-BG

| | | | | | | |
|--------------------------------------|------|----|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 99.9 | | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 97.8 | | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 28.6 | | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 16.6 | | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | < 17 | 17 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | < 17 | 17 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | < 17 | 17 | | | % | ASTM D422-63 |
| % Sand ^a | 83.4 | | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 16.6 | | | | % | ASTM D422-63 |

LA3680-2 SI-01

| | | | | | | |
|--------------------------------------|-------|-----|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 77.1 | | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 9.6 | | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 8.1 | | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | < 8.1 | 8.1 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | < 8.1 | 8.1 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | < 8.1 | 8.1 | | | % | ASTM D422-63 |
| % Sand ^a | 91.9 | | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 8.1 | | | | % | ASTM D422-63 |

LA3680-3 SI-09

| | | | | | | |
|------------------------------|-----|--|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |

Summary of Hits

Job Number: LA3680
Account: CK Associates- Baton Rouge
Project: CB&I/CPRA
Collected: 02/13/15

| Lab Sample ID Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|--------------------------------------|------------------|-----------------|-----|-----|-------|--------------|
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 99.8 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 96.1 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 17.2 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 6.6 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | | < 6.6 | 6.6 | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | < 6.6 | 6.6 | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | | < 6.6 | 6.6 | | % | ASTM D422-63 |
| % Sand ^a | | 93.4 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 6.6 | | | % | ASTM D422-63 |

LA3680-4 LH-BG

| | | | | | | |
|--------------------------------------|--|------|--|--|---|--------------|
| 3 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 61.2 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 45.6 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 38.9 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 34.9 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 33.5 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | | 31.0 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 17.0 | | | % | ASTM D422-63 |
| % Sand ^a | | 66.5 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 33.5 | | | % | ASTM D422-63 |

LA3680-5 BD-01

| | | | | | | |
|------------------------------------|--|------|--|--|---|--------------|
| 3 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 99.7 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 98.6 | | | % | ASTM D422-63 |

Summary of Hits

Job Number: LA3680
Account: CK Associates- Baton Rouge
Project: CB&I/CPRA
Collected: 02/13/15

| Lab Sample ID | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|--------------------------------------|------------------|-----------------|-----|-----|-------|--------------|
| No.50 Sieve (0.30 mm) ^a | | 62.9 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 20.6 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 17.3 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | | 11 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 7.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | | < 3.6 | 3.6 | | % | ASTM D422-63 |
| % Sand ^a | | 82.7 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 17.3 | | | % | ASTM D422-63 |

LA3680-6 BD-05

| | | | | | | |
|--------------------------------------|--|-------|-----|--|---|--------------|
| 3 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 99.7 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 70.3 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 14.2 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 7.8 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | | 3.1 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 1.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | | < 1.0 | 1.0 | | % | ASTM D422-63 |
| % Sand ^a | | 92.2 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 7.8 | | | % | ASTM D422-63 |

LA3680-7 BD-09

| | | | | | | |
|--------------------------------------|--|------|--|--|---|--------------|
| 3 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 99.7 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 99.7 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 99.7 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 99.7 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 98.2 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 63.9 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 11.4 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 6.1 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | | 3.2 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 1.0 | | | % | ASTM D422-63 |

Summary of Hits

Job Number: LA3680
Account: CK Associates- Baton Rouge
Project: CB&I/CPRA
Collected: 02/13/15

| Lab Sample ID | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---------------|------------------|-----------------|----|-----|-------|--------|
|---------------|------------------|-----------------|----|-----|-------|--------|

| | | | | | | |
|-------------------------------------|--|-------|-----|--|---|--------------|
| 0.0015 mm (Hydrometer) ^a | | < 1.0 | 1.0 | | % | ASTM D422-63 |
| % Gravel ^a | | 0.31 | | | % | ASTM D422-63 |
| % Sand ^a | | 93.6 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 6.1 | | | % | ASTM D422-63 |

LA3680-8 BD-10

| | | | | | | |
|--------------------------------------|--|-------|-----|--|---|--------------|
| 3 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 99.8 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 99.3 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 75.3 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 26.7 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 22.7 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | | 13 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 7.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | | < 6.0 | 6.0 | | % | ASTM D422-63 |
| % Sand ^a | | 77.3 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 22.7 | | | % | ASTM D422-63 |

LA3680-9 BD-BG

| | | | | | | |
|--------------------------------------|--|------|----|--|---|--------------|
| 3 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 95.4 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 92.3 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 88.3 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 82.2 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 81.2 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | | 79 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 52 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | | < 34 | 34 | | % | ASTM D422-63 |
| % Sand ^a | | 18.8 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 81.2 | | | % | ASTM D422-63 |

Summary of Hits

Job Number: LA3680
Account: CK Associates- Baton Rouge
Project: CB&I/CPRA
Collected: 02/13/15

2

| Lab Sample ID | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---------------|------------------|-----------------|----|-----|-------|--------|
|---------------|------------------|-----------------|----|-----|-------|--------|

LA3680-10 LH-04

| | | | | | | |
|--------------------------------------|-------|-----|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 99.6 | | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 99.5 | | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 99.5 | | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 99.3 | | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 87.2 | | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 17.9 | | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 7.2 | | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| % Sand ^a | 92.8 | | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 7.2 | | | | % | ASTM D422-63 |

LA3680-11 LH-08

| | | | | | | |
|--------------------------------------|-------|-----|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 100 | | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 99.9 | | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 92.6 | | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 15.6 | | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 7.8 | | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | 3.0 | | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| % Sand ^a | 92.2 | | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 7.8 | | | | % | ASTM D422-63 |

LA3680-12 LH-16

| | | | | | | |
|------------------------------|-----|--|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |

Summary of Hits

Job Number: LA3680
Account: CK Associates- Baton Rouge
Project: CB&I/CPRA
Collected: 02/13/15

| Lab Sample ID | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|--------------------------------------|------------------|-----------------|----|-----|-------|--------------|
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 99.9 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 99.8 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 99.7 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 99.0 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 81.3 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 36.2 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 25.9 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | | 17 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 11 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | | 7.7 | | | % | ASTM D422-63 |
| % Sand ^a | | 74.1 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 25.9 | | | % | ASTM D422-63 |

LA3680-13 LG-17

| | | | | | | |
|--------------------------------------|--|-------|-----|--|---|--------------|
| 3 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 100 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 99.9 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 99.9 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 99.9 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 99.6 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 88.2 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 22.0 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 13.5 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | | 5.0 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 2.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | | < 1.0 | 1.0 | | % | ASTM D422-63 |
| % Sand ^a | | 86.5 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 13.5 | | | % | ASTM D422-63 |

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

(b) Data extrapolated from higher and lower data points due to possible analytical problem with hydrometer analysis at short analysis times. Analysis performed at Accutest Laboratories, Dayton, NJ.

Sample Results

Report of Analysis

Report of Analysis

| | |
|--------------------------------|---|
| Client Sample ID: SI-BG | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-1 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 99.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 97.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 28.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 16.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | < 17 | 17 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | < 17 | 17 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 17 | 17 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 83.4 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 16.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |

(a) All results reported on a wet weight basis.

(b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|--------------------------------|---|
| Client Sample ID: SI-01 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-2 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 77.1 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 9.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 8.1 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | < 8.1 | 8.1 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | < 8.1 | 8.1 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 8.1 | 8.1 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 91.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 8.1 | | % | 1 | 02/27/15 | | ASTM D422-63 |

(a) All results reported on a wet weight basis.

(b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|--------------------------------|---|
| Client Sample ID: SI-09 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-3 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 99.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 96.1 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 17.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 6.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | < 6.6 | 6.6 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | < 6.6 | 6.6 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 6.6 | 6.6 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 93.4 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 6.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |

(a) All results reported on a wet weight basis.

(b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|--------------------------------|---|
| Client Sample ID: LH-BG | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-4 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 61.2 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 45.6 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 38.9 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 34.9 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 33.5 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^c | 31.0 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | 17.0 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 13 | 13 | % | 1 | 03/18/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| % Sand ^b | 66.5 | | % | 1 | 03/18/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 33.5 | | % | 1 | 03/18/15 | | ASTM D422-63 |

- (a) All results reported on a wet weight basis.
- (b) Analysis performed at Accutest Laboratories, Dayton, NJ.
- (c) Data extrapolated from higher and lower data points due to possible analytical problem with hydrometer analysis at short analysis times. Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|--------------------------------|---|
| Client Sample ID: BD-01 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-5 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 99.7 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 98.6 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 62.9 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 20.6 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 17.3 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | 11 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | 7.0 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 3.6 | 3.6 | % | 1 | 03/01/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| % Sand ^b | 82.7 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 17.3 | | % | 1 | 03/01/15 | | ASTM D422-63 |

- (a) All results reported on a wet weight basis.
- (b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | | |
|--------------------------------|--|---|
| Client Sample ID: BD-05 | | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-6 | | Date Received: 02/18/15 |
| Matrix: SO - Sediment | | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 99.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 70.3 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 14.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 7.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | 3.1 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | 1.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 1.0 | 1.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 92.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 7.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |

- (a) All results reported on a wet weight basis.
- (b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|--------------------------------|---|
| Client Sample ID: BD-09 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-7 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 99.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 99.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 99.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 99.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 98.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 63.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 11.4 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 6.1 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | 3.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | 1.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 1.0 | 1.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.31 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 93.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 6.1 | | % | 1 | 02/27/15 | | ASTM D422-63 |

(a) All results reported on a wet weight basis.

(b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|--------------------------------|---|
| Client Sample ID: BD-10 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-8 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 99.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 99.3 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 75.3 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 26.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 22.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | 13 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | 7.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 6.0 | 6.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 77.3 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 22.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |

- (a) All results reported on a wet weight basis.
- (b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | | |
|--------------------------------|--|---|
| Client Sample ID: BD-BG | | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-9 | | Date Received: 02/18/15 |
| Matrix: SO - Sediment | | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 95.4 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 92.3 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 88.3 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 82.2 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 81.2 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^c | 79 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | 52 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 34 | 34 | % | 1 | 03/01/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| % Sand ^b | 18.8 | | % | 1 | 03/01/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 81.2 | | % | 1 | 03/01/15 | | ASTM D422-63 |

- (a) All results reported on a wet weight basis.
- (b) Analysis performed at Accutest Laboratories, Dayton, NJ.
- (c) Data extrapolated from higher and lower data points due to possible analytical problem with hydrometer analysis at short analysis times. Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|---------------------------------|---|
| Client Sample ID: LH-04 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-10 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 99.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 99.5 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 99.5 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 99.3 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 87.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 17.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 7.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | < 1.0 | 1.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | < 1.0 | 1.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 1.0 | 1.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 92.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 7.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |

- (a) All results reported on a wet weight basis.
- (b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|---------------------------------|---|
| Client Sample ID: LH-08 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-11 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 99.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 92.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 15.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 7.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | 3.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | < 1.0 | 1.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 1.0 | 1.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 92.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 7.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |

(a) All results reported on a wet weight basis.

(b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|---------------------------------|---|
| Client Sample ID: LH-16 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-12 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 99.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 99.8 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 99.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 99.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 81.3 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 36.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 25.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | 17 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | 11 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | 7.7 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 74.1 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 25.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |

- (a) All results reported on a wet weight basis.
- (b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|---------------------------------|---|
| Client Sample ID: LG-17 | Date Sampled: 02/13/15 |
| Lab Sample ID: LA3680-13 | Date Received: 02/18/15 |
| Matrix: SO - Sediment | Percent Solids: n/a ^a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^b | 100 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^b | 99.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^b | 99.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^b | 99.9 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^b | 99.6 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^b | 88.2 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^b | 22.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^b | 13.5 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^b | 5.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^b | 2.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^b | < 1.0 | 1.0 | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Gravel ^b | 0.0 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Sand ^b | 86.5 | | % | 1 | 02/27/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^b | 13.5 | | % | 1 | 02/27/15 | | ASTM D422-63 |

- (a) All results reported on a wet weight basis.
- (b) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

| | |
|-------------------|------------------------------|
| FED-EX Tracking # | Bottle Order Control # |
| Accutest Quote # | Accutest Job # LA3680 |

| Client / Reporting Information | | Project Information | | | | | | | | | | Requested Analyses | | | | | | | | | | Matrix Codes |
|---|--|---|-------------|-------------------------------------|------------|----------------------------|---|-------------------------------------|---------|--------------------|------------------|---|----------|--------------------|-----|---------------------------------|--------|--------------------|----------|--------------------|--|---|
| Company Name CK Associates | | Project Name: CB:I/CRA | | | | | | | | | | <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> 62ml size (serve) </div> | | | | | | | | | | DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rise Blank TB - Trip Blank |
| Street Address 17170 Perkins Rd | | Street | | | | | | | | | | | | | | | | | | | | |
| City State Zip Baton Rouge LA 70810 | | Billing Information (if different from Report to) Company Name | | | | | | | | | | | | | | | | | | | | |
| Project Contact Gus Zieske gus.zieske@c-ka.com | | Street Address SAME | | | | | | | | | | | | | | | | | | | | |
| Phone # 225 923 6945 | | Project # | | | | | | | | | | City State Zip | | | | | | | | | | LAB USE ONLY |
| Sampler(s) Name(s) Gus Zieske | | Client Purchase Order # | | | | | | | | | | Attention: | | | | | | | | | | |
| Accutest Sample # | | Collection | | | | | | | | | | Number of preserved Bottles | | | | | | | | | | |
| Field ID / Point of Collection | | Date | Time | Sampled By | Matrix | # of bottles | HCl | NO ₃ H | ZAVANOH | HMOS | HSO ₄ | INZIC | DI Water | MECH | TSP | NH ₄ SO ₄ | ENCORE | OTHER | | | | |
| SI-B6 | | 2.13.15 | 1600 | BEZ | SED | 1 | | | | | | | X | | | | | | X | | | |
| SI-O1 | | | | | | | | | | | | | | | | | | | | | | |
| SI-O9 | | | | | | | | | | | | | | | | | | | | | | |
| LH-B6 | | | | | | | | | | | | | | | | | | | | | | |
| LH-O1 BD-O1 | | | | | | | | | | | | | | | | | | | | | | |
| LH-O5 BD-O5 | | | | | | | | | | | | | | | | | | | | | | |
| LH-O9 BD-O9 | | | | | | | | | | | | | | | | | | | | | | |
| LH-10 BD-10 | | | | | | | | | | | | | | | | | | | | | | |
| BD-B6 | | | | | | | | | | | | | | | | | | | | | | |
| BD-O4 LH-O4 | | | | | | | | | | | | | | | | | | | | | | |
| BD-O5 LH-O5 | | | | | | | | | | | | | | | | | | | | | | |
| BD-10 LH-10 | | | | | | | | | | | | | | | | | | | | | | |
| BD-11 LH-11 | | | | | | | | | | | | | | | | | | | | | | |
| Turnaround Time (Business days) | | Approved By (Accutest PM) / Date: | | | | | Data Deliverable Information | | | | | Comments / Special Instructions | | | | | | | | | | |
| <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush TIA data available VIA Lablink | | | | | | | <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> TRRP <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> EDD Format <input type="checkbox"/> FULLT (Level 3+4) <input type="checkbox"/> Other _____ <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary | | | | | 2-011 (OL) Accutest dmw | | | | | | | | | | |
| Sample Custody must be documented below each time samples change possession, including courier delivery. | | | | | | | | | | | | | | | | | | | | | | |
| Relinquished by Sampler: | | Date/Time: | | Received By: | | Date/Time: | | Relinquished By: | | Date/Time: | | Received By: | | Date/Time: | | Relinquished By: | | Date/Time: | | Received By: | | |
| 1 KC... | | 2/18/15 1005 | | [Signature] | | 2/18/15 11:52 | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | |
| 3 [Signature] | | 2/18/15 1530 | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | |
| 5 [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | [Signature] | | |
| Custody Seal | | <input checked="" type="checkbox"/> Intact | | <input type="checkbox"/> Not intact | | Preserved where applicable | | <input checked="" type="checkbox"/> | | On Ice | | <input type="checkbox"/> | | Cooler Temp. | | (44 DVJ66) | | | | | | |

4.1
4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: LA3680 **Client:** CK ASSOCIATES **Project:** CB&/CPRA
Date / Time Received: 2/18/2015 3:30:00 PM **Delivery Method:** Accutest Courier **Airbill #s:** _____

Cooler Temps (Initial/Adjusted): #1: (4.4/4.3): _____

Cooler Security

- | | <u>Y or N</u> | | <u>Y or N</u> |
|--------------------------------------|--|-----------------------|--|
| 1. Custody Seals for cooler Present | <input type="checkbox"/> <input checked="" type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 2. Custody Seals for bottles Present | <input type="checkbox"/> <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 3. Custody Seals Intact | <input type="checkbox"/> <input checked="" type="checkbox"/> | | |

Cooler Temperature

- | | <u>Y or N</u> |
|------------------------------|--|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun |
| 3. Cooler media: | Ice (direct contact) |
| 4. No. Coolers | 1 |

Quality Control Preservation

- | | <u>Y</u> | <u>N</u> | <u>N/A</u> |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

- | | <u>Y</u> | <u>or</u> | <u>N</u> |
|--|-------------------------------------|-----------|-------------------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input type="checkbox"/> | | <input checked="" type="checkbox"/> |

Sample Integrity - Condition

- | | <u>Y</u> | <u>or</u> | <u>N</u> |
|----------------------------------|-------------------------------------|-----------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | | |

Sample Integrity - Instructions

- | | <u>Y</u> | <u>N</u> | <u>N/A</u> |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments: ACCUTEST RECEIVED THE FOLLOWING SAMPLE I.D.'S NOT LISTD ON COC; LH-17,LH-04, BD-09, BD-05, BD-10, BD-01, LH-08, LH-16. THE FOLLOWING I.D.'S LISTED ON THE COC WERE NOT RECEIVED; LH-01, LH-05, LH-09, LH-1, BD-04, BD-08, BD-16, BD-17.

4.1
4



Sample Receipt Summary - Problem Resolution

Accutest Job Number: LA3680

Initiator: hutchc

CSR: Liz Martin

Response Date: 2/20/2015

Response: Per Gus Zieske's email dated 02/19/15 @ 7:31 am, the sample bottles are labeled correctly and the COC is incorrect. The samples listed on the COC as LH-01, LH-05, LH-09, LH-10 should be BD-01, BD-05, BD-09, BD-10 and the ones listed on the COC as BD-04, BD-08, BD-16, BD-17 should be LH-04, LH-08, LH-16, LH-17. Please revise the COC per email and include the revised COC with the final report.

4.1

4

Misc. Forms

Custody Documents and Other Forms

(Accutest New Jersey)

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: LA3680 **Client:** _____ **Project:** _____
Date / Time Received: 2/20/2015 1:10:00 PM **Delivery Method:** _____ **Airbill #s:** _____
Cooler Temps (Initial/Adjusted): #1: (1.7/1.4); 0

Cooler Security Y or N Y or N
 1. Custody Seals Present: 3. COC Present:
 2. Custody Seals Intact: 4. Smpl Dates/Time OK

Cooler Temperature Y or N
 1. Temp criteria achieved:
 2. Cooler temp verification: IR Gun
 3. Cooler media: Ice (Bag)
 4. No. Coolers: 1

Quality Control Preservation Y or N N/A
 1. Trip Blank present / cooler:
 2. Trip Blank listed on COC:
 3. Samples preserved properly:
 4. VOCs headspace free:

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles:
 2. Container labeling complete:
 3. Sample container label / COC agree:

Sample Integrity - Condition Y or N
 1. Sample recvd within HT:
 2. All containers accounted for:
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear:
 2. Bottles received for unspecified tests:
 3. Sufficient volume recvd for analysis:
 4. Compositing instructions clear:
 5. Filtering instructions clear:

Comments

5.1
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| Client / Reporting Information | | Project Information | | | | Requested Analyses | | | | | | | | | | Matrix Codes | | | | | | | | |
|--|--|--|--|--------------------|--|-------------------------|--|-----------|--|--------|--|--------------|--|---|--|---|--|--|--|--|--|--|--|--------------|
| Company Name CK Associates | | Project Name CB&I / CPRA | | | | | | | | | | | | | | GW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment O - Oil LC - Leachate AIR - Air SOG - Other Solid WP - Waste EQ - Equipment RB - Runoff TB - Tissue | | | | | | | | |
| Street Address 17170 Perkins Rd | | City BR | | State LA | | Zip 70810 | | | | | | | | | | | | | | | | | | |
| Project Contact Gas Zwick gas.zwick@ck-ass.com | | Phone 225 923 6945 | | Project # | | Client Purchase Order # | | | | | | | | | | | | | | | | | | |
| Samples Name(s) | | Phone # | | Project Manager | | Address | | | | | | | | | | | | | | | | | | |
| Field ID | | Point of Collection | | Date | | Time | | Sample ID | | Matrix | | # of bottles | | <input type="checkbox"/> UCL <input type="checkbox"/> UML <input type="checkbox"/> ZINC <input type="checkbox"/> BARIUM <input type="checkbox"/> COPPER <input type="checkbox"/> LEAD <input type="checkbox"/> MANGANESE <input type="checkbox"/> NICKEL <input type="checkbox"/> SILVER <input type="checkbox"/> THALLIUM <input type="checkbox"/> VANADIUM <input type="checkbox"/> CHROMIUM <input type="checkbox"/> MERCURY <input type="checkbox"/> CADMIUM <input type="checkbox"/> CHLORIDE <input type="checkbox"/> FLUORIDE <input type="checkbox"/> PHOSPHORUS <input type="checkbox"/> SULFATE <input type="checkbox"/> NITRATE <input type="checkbox"/> AMMONIUM <input type="checkbox"/> OTHER | | | | | | | | | | LAB USE ONLY |
| 4 | | BD-BG | | 3/2/15 | | 1000 | | 602 | | SED | | 1 | | <input checked="" type="checkbox"/> Grain size (Sieve) | | | | | | | | | | |
| 4 | | LH-BG | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|--|---|--|---|--|--|--|---|--|--------------------------------|--|
| <input type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T&C data available at CA Labnet | | Approved By (Accutest PHL / OMS): | | Date Deliverable Information: <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) | | <input type="checkbox"/> TRRP <input type="checkbox"/> EDO Format <input type="checkbox"/> Other | | Comments / Special Instructions: INITIAL ASSESSMENT LABEL VERIFICATION Received at Baton Rouge Service Center | | | |
| Requested by Sample # 1 | | Date / Time 2/2/15 12:30 | | Received By 1 Renee | | By Renee Sam | | Date / Time 2/2/15 | | Received By 2 Fed Ex | |
| Requisitioned by Sample # 3 | | Date / Time 2/2/15 10:30 | | Received By 3 | | By 3 | | Date / Time 3/2/15 | | Received By 4 | |
| Requisitioned by Sample # 5 | | Date / Time 3/2/15 | | Received By 5 | | By 5 | | Date / Time 3/2/15 | | Received By 5 | |

Michelle -
 Additional
 Volume for LAB use
 samples - 4 e-9
 Thanks!

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 5

General Chemistry

QC Data Summaries

(Accutest New Jersey)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA3680
Account: ALLA - Accutest Lafayette
Project: CKALABR: CB&I/CPRA

| Analyte | Batch ID | QC Sample | Units | Original Result | DUP Result | RPD | QC Limits |
|-------------------------|-----------------|-----------|-------|-----------------|------------|-----------|-----------|
| % Gravel | GP87068/GN20958 | LA3680-1 | % | 0.0 | 0.0 | 0.0 | 0-77% |
| % Sand | GP87068/GN20958 | LA3680-1 | % | 83.4 | 90.3 | 7.9 | 0-31% |
| % Silt, Clay, Colloids | GP87068/GN20958 | LA3680-1 | % | 16.6 | 9.7 | 52.5* (a) | 0-36% |
| 0.0015 mm (Hydrometer) | GP87068/GN20958 | LA3680-1 | % | <17 | <1.0 | 177.0 (b) | 0-61% |
| 0.005 mm (Hydrometer) | GP87068/GN20958 | LA3680-1 | % | <17 | <1.0 | 177.0 (b) | 0-87% |
| 0.030 mm (Hydrometer) | GP87068/GN20958 | LA3680-1 | % | <17 | 2.0 | 157.0 (b) | 0-50% |
| 0.375 Inch Sieve | GP87068/GN20958 | LA3680-1 | % | 100 | 100 | 0.0 | 0-27% |
| 0.75 Inch Sieve | GP87068/GN20958 | LA3680-1 | % | 100 | 100 | 0.0 | 0-21% |
| 1.5 Inch Sieve | GP87068/GN20958 | LA3680-1 | % | 100 | 100 | 0.0 | 0-20% |
| 3 Inch Sieve | GP87068/GN20958 | LA3680-1 | % | 100 | 100 | 0.0 | 0-20% |
| No.10 Sieve (2.00 mm) | GP87068/GN20958 | LA3680-1 | % | 100 | 100 | 0.0 | 0-18% |
| No.100 Sieve (0.15 mm) | GP87068/GN20958 | LA3680-1 | % | 28.6 | 22.8 | 22.6 | 0-32% |
| No.16 Sieve (1.18 mm) | GP87068/GN20958 | LA3680-1 | % | 100 | 100 | 0.0 | 0-21% |
| No.200 Sieve (0.075 mm) | GP87068/GN20958 | LA3680-1 | % | 16.6 | 9.7 | 52.5* (a) | 0-27% |
| No.30 Sieve (0.60 mm) | GP87068/GN20958 | LA3680-1 | % | 99.9 | 99.9 | 0.0 | 0-27% |
| No.4 Sieve (4.75 mm) | GP87068/GN20958 | LA3680-1 | % | 100 | 100 | 0.0 | 0-17% |
| No.50 Sieve (0.30 mm) | GP87068/GN20958 | LA3680-1 | % | 97.8 | 98.6 | 0.8 | 0-25% |
| No.8 Sieve (2.36 mm) | GP87068/GN20958 | LA3680-1 | % | 100 | 100 | 0.0 | 0-18% |

Associated Samples:

Batch GP87068: LA3680-1, LA3680-2, LA3680-3, LA3680-4, LA3680-5, LA3680-6, LA3680-7, LA3680-8, LA3680-9, LA3680-10, LA3680-11, LA3680-12, LA3680-13

(*) Outside of QC limits

(a) High RPD due to possible sample nonhomogeneity.

(b) RPD acceptable due to low duplicate and sample concentrations.

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03/17/15

Technical Report for

CK Associates- Baton Rouge

CB&I/CPRA

Accutest Job Number: LA4304

Sampling Date: 03/05/15

Report to:

C-K ASSOCIATES, INC.
17170 PERKINS ROAD
BATON ROUGE, LA 70810
gus.zieske@c-ka.com

ATTN: Gus Zieske

Total number of pages in report: **16**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Elizabeth Martin 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), FL(E87657), KY(#31), NC(487), SC(73004001), TX(T104704186-15-7), WV(257)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

CK Associates- Baton Rouge

Job No: LA4304

CB&I/CPRA

| Sample Number | Collected | | Received | Matrix | | Client Sample ID |
|---------------|-----------|---------|----------|--------|----------|------------------|
| | Date | Time By | | Code | Type | |
| LA4304-1 | 03/05/15 | 09:00 | 03/06/15 | SO | Sediment | CBI LH19 |
| LA4304-2 | 03/05/15 | 09:00 | 03/06/15 | SO | Sediment | CBI LH20 |
| LA4304-3 | 03/05/15 | 09:00 | 03/06/15 | SO | Sediment | CBI LH21 |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: LA4304
Account: CK Associates- Baton Rouge
Project: CB&I/CPRA
Collected: 03/05/15

| Lab Sample ID | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---------------|------------------|-----------------|----|-----|-------|--------|
|---------------|------------------|-----------------|----|-----|-------|--------|

LA4304-1 CBI LH19

| | | | | | | |
|--------------------------------------|-------|-----|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 98.7 | | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 98.1 | | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 97.6 | | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 97.5 | | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 97.3 | | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 95.7 | | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 76.0 | | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 9.1 | | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 5.4 | | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| % Gravel ^a | 1.9 | | | | % | ASTM D422-63 |
| % Sand ^a | 92.7 | | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 5.4 | | | | % | ASTM D422-63 |

LA4304-2 CBI LH20

| | | | | | | |
|--------------------------------------|-------|-----|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 98.6 | | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 93.9 | | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 90.2 | | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 85.4 | | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 84.5 | | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 83.7 | | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 79.9 | | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 54.9 | | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 12.6 | | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 7.5 | | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | 2.4 | | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | < 1.0 | 1.0 | | | % | ASTM D422-63 |
| % Gravel ^a | 9.8 | | | | % | ASTM D422-63 |
| % Sand ^a | 82.7 | | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 7.5 | | | | % | ASTM D422-63 |

LA4304-3 CBI LH21

| | | | | | | |
|---------------------------|-----|--|--|--|---|--------------|
| 3 Inch Sieve ^a | 100 | | | | % | ASTM D422-63 |
|---------------------------|-----|--|--|--|---|--------------|

Summary of Hits

Job Number: LA4304
Account: CK Associates- Baton Rouge
Project: CB&I/CPRA
Collected: 03/05/15

| Lab Sample ID Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|--------------------------------------|------------------|-----------------|----|-----|-------|--------------|
| 1.5 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.75 Inch Sieve ^a | | 100 | | | % | ASTM D422-63 |
| 0.375 Inch Sieve ^a | | 98.5 | | | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | | 97.6 | | | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | | 95.8 | | | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | | 95.1 | | | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | | 94.7 | | | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | | 90.4 | | | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | | 82.6 | | | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | | 24.1 | | | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | | 16.5 | | | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | | 6.0 | | | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | | 2.0 | | | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | | 1.1 | | | % | ASTM D422-63 |
| % Gravel ^a | | 2.4 | | | % | ASTM D422-63 |
| % Sand ^a | | 81.1 | | | % | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | | 16.5 | | | % | ASTM D422-63 |

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

Sample Results

Report of Analysis

Report of Analysis

| | |
|-----------------------------------|--------------------------------|
| Client Sample ID: CBI LH19 | Date Sampled: 03/05/15 |
| Lab Sample ID: LA4304-1 | Date Received: 03/06/15 |
| Matrix: SO - Sediment | Percent Solids: n/a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^a | 100 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 98.7 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 98.1 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 97.6 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 97.5 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 97.3 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 95.7 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 76.0 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 9.1 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 5.4 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | < 1.0 | 1.0 | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | < 1.0 | 1.0 | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | < 1.0 | 1.0 | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Gravel ^a | 1.9 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Sand ^a | 92.7 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 5.4 | | % | 1 | 03/16/15 | | ASTM D422-63 |

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|-----------------------------------|--------------------------------|
| Client Sample ID: CBI LH20 | Date Sampled: 03/05/15 |
| Lab Sample ID: LA4304-2 | Date Received: 03/06/15 |
| Matrix: SO - Sediment | Percent Solids: n/a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|-----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^a | 100 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 98.6 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 93.9 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 90.2 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 85.4 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 84.5 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 83.7 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 79.9 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 54.9 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 12.6 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 7.5 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | 2.4 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | < 1.0 | 1.0 | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | < 1.0 | 1.0 | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Gravel ^a | 9.8 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Sand ^a | 82.7 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 7.5 | | % | 1 | 03/16/15 | | ASTM D422-63 |

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Report of Analysis

| | |
|-----------------------------------|--------------------------------|
| Client Sample ID: CBI LH21 | Date Sampled: 03/05/15 |
| Lab Sample ID: LA4304-3 | Date Received: 03/06/15 |
| Matrix: SO - Sediment | Percent Solids: n/a |
| Project: CB&I/CPRA | |

General Chemistry

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|--|--------|----|-------|----|----------|----|--------------|
| Particle Size Analysis (Sieve and Hydrometer Testing) | | | | | | | |
| 3 Inch Sieve ^a | 100 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 1.5 Inch Sieve ^a | 100 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.75 Inch Sieve ^a | 100 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.375 Inch Sieve ^a | 98.5 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.4 Sieve (4.75 mm) ^a | 97.6 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.8 Sieve (2.36 mm) ^a | 95.8 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.10 Sieve (2.00 mm) ^a | 95.1 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.16 Sieve (1.18 mm) ^a | 94.7 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.30 Sieve (0.60 mm) ^a | 90.4 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.50 Sieve (0.30 mm) ^a | 82.6 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.100 Sieve (0.15 mm) ^a | 24.1 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| No.200 Sieve (0.075 mm) ^a | 16.5 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.030 mm (Hydrometer) ^a | 6.0 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.005 mm (Hydrometer) ^a | 2.0 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| 0.0015 mm (Hydrometer) ^a | 1.1 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Gravel ^a | 2.4 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Sand ^a | 81.1 | | % | 1 | 03/16/15 | | ASTM D422-63 |
| % Silt, Clay, Colloids ^a | 16.5 | | % | 1 | 03/16/15 | | ASTM D422-63 |

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Gulf Coast
500 Ambassador Caffery Pkwy, Scott, LA 70583
TEL: 337-237-4775 FAX: 337-237-7838
www.accutest.com

| | |
|-------------------|------------------------------|
| FED-EX Tracking # | Bottle Order Control # |
| Accutest Quote # | Accutest Job # LA4304 |

| Client / Reporting Information | | Project Information | | | | | | | | | | Requested Analyses | | | | | | | | | | | | Matrix Codes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------------|---|------|------------|--------|--------------|-----|------|--------|------|-------|---|----------|------|-----|--------|--------|-------|--------------|--|--|--|--|---|--------------------------------|------|------|------------|--------|--------------|-----|------|--------|------|-------|------|----------|------|-----|--------|--------|-------|--------------|---|----------|--------|------|-----|-----|---|--|--|--|--|--|---|--|--|--|--|--|--|--|--|---|--------|---|---|---|---|---|--|--|--|--|--|---|--|--|--|--|--|--|--|--|---|--------|---|---|---|---|---|--|--|--|--|--|---|--|--|--|--|--|--|--|--|
| Company Name CK Associates | | Project Name CB: I/CARA | | | | | | | | | | <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Brown Size (SEIVE)</div> | | | | | | | | | | | | DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank EB-Equipment Blank RB- Rinse Blank TB-Trip Blank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Street Address 1770 Perkins Rd | | Street BR LA 70810 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| City, State, Zip BR LA 70810 | | Billing Information (if different from Report to) Company Name | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Contact Gus Zeske gus.zeske@c-ka.com | | Street Address SAME | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phone # 225 923 6945 | | City, State, Zip | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampler(s) Name(s) | | Project Manager | | | | | | | | | | <table border="1"> <tr> <th>Accutest Sample #</th> <th>Field ID / Point of Collection</th> <th>Date</th> <th>Time</th> <th>Sampled By</th> <th>Matrix</th> <th># of bottles</th> <th>HCl</th> <th>NO3H</th> <th>ZANNOH</th> <th>HNO3</th> <th>H2SO4</th> <th>NO2H</th> <th>DI Water</th> <th>MEDH</th> <th>TSP</th> <th>NH4SO4</th> <th>ENSOHE</th> <th>OTHER</th> <th>LAB USE ONLY</th> </tr> <tr> <td>1</td> <td>CB1 LH19</td> <td>3.5.15</td> <td>0900</td> <td>GGZ</td> <td>SED</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>↓ LH20</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>↓ LH21</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | | | | | | | Accutest Sample # | Field ID / Point of Collection | Date | Time | Sampled By | Matrix | # of bottles | HCl | NO3H | ZANNOH | HNO3 | H2SO4 | NO2H | DI Water | MEDH | TSP | NH4SO4 | ENSOHE | OTHER | LAB USE ONLY | 1 | CB1 LH19 | 3.5.15 | 0900 | GGZ | SED | 1 | | | | | | X | | | | | | | | | 2 | ↓ LH20 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | | | X | | | | | | | | | 3 | ↓ LH21 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | | | X | | | | | | | | |
| Accutest Sample # | Field ID / Point of Collection | Date | Time | Sampled By | Matrix | # of bottles | HCl | NO3H | ZANNOH | HNO3 | H2SO4 | NO2H | DI Water | MEDH | TSP | NH4SO4 | ENSOHE | OTHER | LAB USE ONLY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | CB1 LH19 | 3.5.15 | 0900 | GGZ | SED | 1 | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | ↓ LH20 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | ↓ LH21 | ↓ | ↓ | ↓ | ↓ | ↓ | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|--|--|--|--|--|--|--|--|--|---|--|---|--|--|--|--|--|--|--|--|--|--|--|
| Turnaround Time (Business days) | | Data Deliverable Information | | | | | | | | | | Comments / Special Instructions | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY <small>Emergency & Rush T/A data available VIA Lablink</small> | | Approved By (Accutest PM) / Date: _____ _____ _____ _____ | | | | | | | | | | <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> TRRP <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> EDD Format <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> Other _____ <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" <small>Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary</small> | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | Accutest PM RAB (G) Service Center | | | | | | | | | | | |

Sample Custody must be documented below each time samples change possession, including courier delivery.

| | | | | | | | | |
|--|--------------------------------|---------------------------------|-------------------------------|-------------------------------------|---|---|---------------------------------|----------------------------------|
| Relinquished by Sampler: Robert Widdell | Date Time: 3.5.15 1435 | Received By: [Signature] | Date Time: [Signature] | Relinquished By: [Signature] | Date Time: [Signature] | Received By: [Signature] | Date Time: [Signature] | |
| Relinquished by Sampler: [Signature] | Date Time: 3/4/15 16:15 | Received By: [Signature] | Date Time: [Signature] | Relinquished By: [Signature] | Date Time: [Signature] | Received By: [Signature] | Date Time: [Signature] | |
| Relinquished by: [Signature] | Date Time: [Signature] | Received By: [Signature] | Date Time: [Signature] | Custody Seat # NOC5 | <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not intact | Preserved when applicable <input checked="" type="checkbox"/> | On Ice <input type="checkbox"/> | Cooler Temp: 3.5 (DU) 360 |

LA4304: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: LA4304 **Client:** CK ASSOCIATES **Project:** CB&I
Date / Time Received: 3/6/2015 4:15:00 PM **Delivery Method:** Accutest Courier **Airbill #'s:** _____
Cooler Temps (Initial/Adjusted): #1: (3.5/3.4): _____

| <u>Cooler Security</u> | | <u>Y</u> | <u>or</u> | <u>N</u> | | <u>Y</u> | <u>or</u> | <u>N</u> |
|---------------------------|--------------------------|----------|-----------|-------------------------------------|-----------------------|-------------------------------------|-----------|--------------------------|
| 1. Custody Seals Present: | <input type="checkbox"/> | | | <input checked="" type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input type="checkbox"/> | | | <input checked="" type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |

| <u>Cooler Temperature</u> | | <u>Y</u> | <u>or</u> | <u>N</u> |
|----------------------------|-------------------------------------|----------|-----------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | | | <input type="checkbox"/> |
| 2. Thermometer ID: | DV260; | | | |
| 3. Cooler media: | Ice (direct contact) | | | |
| 4. No. Coolers: | 1 | | | |

| <u>Quality Control Preservation</u> | <u>Y</u> | <u>or</u> | <u>N</u> | <u>N/A</u> |
|-------------------------------------|-------------------------------------|-----------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| <u>Sample Integrity - Documentation</u> | | <u>Y</u> | <u>or</u> | <u>N</u> |
|---|-------------------------------------|----------|-----------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | | | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | | | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | | | <input type="checkbox"/> |

| <u>Sample Integrity - Condition</u> | | <u>Y</u> | <u>or</u> | <u>N</u> |
|-------------------------------------|-------------------------------------|----------|-----------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | | | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | | | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | | | |

| <u>Sample Integrity - Instructions</u> | <u>Y</u> | <u>or</u> | <u>N</u> | <u>N/A</u> |
|---|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

4.1
4

Misc. Forms

Custody Documents and Other Forms

(Accutest New Jersey)

Includes the following where applicable:

- Chain of Custody

590 Ambassador Caffery Parkway, Scott, LA, 70583
Phone: 504-304-5227 Fax: 504-237-7838
www.accutest.com

FEDEX Tracking # **9173 7256 9037** Order Order Number
Account Order # **LA4304** Accutest Job #

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|----------|--|--------|--|-------------|--|-----|--|--|--|------|--|-------|--|-----|--|-----|--|-------|--|-------|--------------|
| Client / Reporting Information | | Project Information | | Requested Analysis (see TEST CODE sheet) | | | | | | | | | | Matrix Codes | | | | | | | | | | | | | |
| Company Name: Accutest Laboratories | | Project Name: CB&VOPRA | | | | | | | | | | | | EW - Drinking Water GW - Ground Water IW - Water SW - Surface Water SO - Soil SEB - Sediment G - Gas LQ - Other Liquid AR - Air SOL - Other Solid NP - Nails PB - Paint Blank EB - Equipment Blank RB - Rese Blank TB - Tinc Blank | | | | | | | | | | | | | |
| Street Address: 500 Ambassador Caffery Parkway | | Street: 500 Ambassador Caffery Parkway | | | | | | | | | | | | | | | | | | | | | | | | | |
| City: Scott State: LA Zip: 70583 | | City: Scott State: LA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Contact: Name: kim@accutest.com E-mail: kim@accutest.com | | Project #: | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phone #: 800-304-5227 | | Client Purchase Order #: | | | | | | | | | | | | | | | | | | | | | | | | | |
| Samples' names: | | Project Manager: | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approved Sample # | | Field ID / Point of Collection | | Collection | | Sample # | | Matrix | | Pre bottles | | HCL | | HNO3 | | H2O2 | | H2SO4 | | H2S | | H2O | | Other | | CH/MS | LAB USE ONLY |
| 1 | | CBI LH19 | | 3/5/15 9:00:00 AM | | SO 1 | | | | | | | | | | | | | | | | | | | | X | |
| 2 | | CBI LH20 | | 3/5/15 9:30:00 AM | | SO 1 | | | | | | | | | | | | | | | | | | | | X | LA |
| 3 | | CBI LH21 | | 3/5/15 9:00:00 AM | | SO 1 | | | | | | | | | | | | | | | | | | | | X | |

| | | | | | | | | | | | | | | |
|--|--|------------------------------------|--|---|--|--|--|--|--|--|--|--|--|---|
| T, turning Time / Business days: | | Approved By (Signature/PM) / Date: | | Data Deliverable Information | | | | | | | | | | Comments / Special Instructions |
| <input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input checked="" type="checkbox"/> other 3/16/2015 | | | | <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> TRRP <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> EDC Format <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> Other <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" A COLMS Commercial "B" = Residual OC Summary | | | | | | | | | | INITIAL ASSESSMENT <i>HL 2A</i> LABEL VERIFICATION <i>HL</i> |

| | | | | | | | | | | | |
|--|--|--------------------------------|--|-----------------------------|--|--|--|---|--|---------------------------------|--|
| Sample Custody must be documented below each time samples change possession, including courier delivery. | | | | | | | | | | | |
| 1 Released by: <i>[Signature]</i> | | Date Time: 3/5/15 11:00 | | Received By: FED EX | | Released By: FED EX | | Date Time: 3/5/15 11:00 | | Received By: <i>[Signature]</i> | |
| 3 Released by: <i>[Signature]</i> | | Date Time: 3/5/15 11:00 | | Received By: FED EX | | Released By: FED EX | | Date Time: 3/5/15 11:00 | | Received By: <i>[Signature]</i> | |
| 5 Released by: <i>[Signature]</i> | | Date Time: 3/5/15 11:00 | | Received By: FED EX | | Released By: FED EX | | Date Time: 3/5/15 11:00 | | Received By: <i>[Signature]</i> | |
| | | | | Custody Seals: CL-2A | | <input type="checkbox"/> read <input type="checkbox"/> not read | | Presence where applicable: <input type="checkbox"/> | | Cooler Temp: 4.5C | |

51
5

LA4304: Chain of Custody
Page 1 of 3
Accutest New Jersey



Date / Time: 3/9/2015 10:10:16 AM
CSR: lizm
Accutest Job #: LA4304
Client Project: CB&I/CPRA
Deliverable: COMMB
TAT: 7

Sub Lab: Accutest Mid-Atlantic
Address: 2235 Route 130
City: Dayton
State: NJ Zip: 08810
Contact: Sample Management
Phone: (732) 329-0200

| Accutest Sample # | Client Sample Description | Analysis | Location | Sampled By | Date Sampled | Time Sampled | Aliquot |
|-------------------|---------------------------|----------|----------|------------|--------------|--------------|---------|
| LA4304-1 | CBI LH19 | GRAINS | RR3 OL | | 3/5/2015 | 9:00:00 AM | |
| LA4304-2 | CBI LH20 | GRAINS | RR3 OL | | 3/5/2015 | 9:00:00 AM | |
| LA4304-3 | CBI LH21 | GRAINS | RR3 OL | | 3/5/2015 | 9:00:00 AM | |

Comments:

Sample Management Receipt:

Date:

LA4304: Chain of Custody
Page 2 of 3

5.1
5



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: LA4304 Client: Project:

Date / Time Received: 3/10/2015 11:00:00 AM Delivery Method: Airbill #s:

Cooler Temps (Initial/Adjusted): #1: (1.5/1.2); 0

Table with 2 columns: Section (Cooler Security), Item, and checkboxes (Y or N).

Table with 2 columns: Section (Cooler Temperature), Item, and checkboxes (Y or N).

Table with 3 columns: Section (Quality Control Preservation), Item, and checkboxes (Y or N, N/A).

Table with 2 columns: Section (Sample Integrity - Documentation), Item, and checkboxes (Y or N).

Table with 2 columns: Section (Sample Integrity - Condition), Item, and checkboxes (Y or N).

Table with 4 columns: Section (Sample Integrity - Instructions), Item, and checkboxes (Y or N, N/A).

Comments

Accutest Laboratories V:732.329.0200

2235 US Highway 130 F: 732.329.3499

Dayton, New Jersey www.accutest.com

5.1 5

Appendix D
Surface Soil Benthic Laboratory Reports
and Analysis Request/Chain-of-Custody
Documentation



17170 PERKINS ROAD
BATON ROUGE, LA 70810
PHONE (225) 755-1000
FAX (225) 751-2010
www.c-ka.com

HOUSTON, TX
PHONE (281) 397-9016
FAX (281) 397-6637

LELAP Certification Number 02080

LAKE CHARLES, LA
PHONE (337) 625-6577
FAX (337) 625-6580

SHREVEPORT, LA
PHONE (318) 797-8636
FAX (318) 798-0478

March 24, 2015

CB&I
4171 Essen Lane
Baton Rouge, Louisiana 70809
Attn: Mr. Glen Landry

Ref: Whole Sediment Toxicity Results
CK Project No: 12064
Test ID No.: 15021222, 15021223, 15021224, 15021225 and 15021226

Dear Mr. Landry:

Enclosed please find the Toxicity Test Report containing results of a set of 10-day acute toxicity tests using *Mysidopsis bahia* and *Leptocheirus plumulosus* performed on the CB&I **BD Area** samples. If you have any questions concerning this toxicity testing report or if I can be of any further assistance to you, please call me at (225) 755-1011 x 1100.

Sincerely,
CK Associates

A handwritten signature in cursive script that reads 'Monica S. Eues'.

Monica S. Eues
Quality Assurance Manager

MSE/hbb

Enc.: Whole Sediment Toxicity Report

Issue Date: March 25, 2015

WHOLE SEDIMENT TOXICITY TEST REPORT

FOR

CB&I – PROJECT # 153673

BD AREA

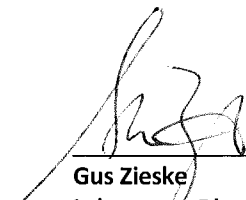
TEST INITIATION DATE: FEBRUARY 17, 2015

TEST IDENTIFICATION NO.: 15021222, 15021223, 15021224, 15021225 and
15021226



17170 Perkins Road
Baton Rouge, Louisiana 70810
225-755-1000

The results of this analysis relate only to the referenced sample as it was submitted to CK Associates. Unless otherwise noted, all test results meet the requirements of TNI. This report shall not be reproduced in full or in part without the written consent of CK Associates.



Gus Zieske
Laboratory Director

3.25.15
Date



Monica S. Eues
Quality Assurance Manager

3.24.15
Date

SUMMARY AND CONCLUSIONS

Permittee: CB&I
 4171 Essen Lane
 Baton Rouge, Louisiana 70809

Laboratory: CK Associates
 17170 Perkins Road
 Baton Rouge, Louisiana 70810
 LELAP Certification #02080

Method(s): *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. Inland Testing Manual EPA-823-B-98-004 1998*

Test Sample: BD Area
 Test ID No.: 15021222, 15021223, 15021224, 15021225 and 15021226
 Concentration: Whole Sediment
 Overlying Water: Synthetic Laboratory Water
 Sample Dates: January 30 and 31, 2015
 Test Initiation Date: February 17, 2015
 Purpose: Benthic Toxicity

Test Acceptance Criteria

Performance criteria for *M. bahia* survival was met.

Performance criteria for *L. plumulosus* survival was met.

Test Results

| Sediment Identification | <i>Mysidopsis bahia</i> | | | <i>Leptocheirus plumulosus</i> | | |
|-------------------------|-------------------------|------|-----------------------------|--------------------------------|------|-----------------------------|
| | % Survival | NOEC | Toxicity Indicated (Yes/No) | % Survival | NOEC | Toxicity Indicated (Yes/No) |
| Laboratory Control | 96 | | | 95 | | |
| Reference Sediment | 96 | | | 94 | | |
| BD 01 | 100 | 100 | No | 94 | 100 | No |
| BD 05 | 94 | 100 | No | 98 | 100 | No |
| BD 09 | 96 | 100 | No | 96 | 100 | No |
| BD 10 | 92 | 100 | No | 95 | 100 | No |

Test Conclusions

The test samples did not indicate acute toxicity to either of the test species in the 10-day exposure.

INTRODUCTION

Samples of CB&I (**BD Area**) were collected on January 30 and 31, 2015 and were received by CK Associates on February 2, 2015. A *Mysidopsis bahia* 10-Day Acute Toxicity Test and a *Leptocheirus plumulosus* 10-Day Acute Toxicity Test were conducted as described below.

METHODS

The samples were tested in accordance with Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. Inland Testing Manual EPA-823-B-98-004 1998. All test samples were prepared and overlying water added one day prior to the introduction of the test species. This allowed suspended particles to settle and established equilibrium between sediment and overlying water. All test chambers were maintained with constant aeration.

| <u>Test Parameters</u> | <u><i>Mysidopsis bahia</i></u> | <u><i>Leptocheirus plumulosus</i></u> |
|-----------------------------|--------------------------------|---------------------------------------|
| Organism Source | CK Associates | Aquatic Biotechnologies, Inc. |
| Organism Age | 5 days | 3-5 mm |
| Test Chamber Material | Polypropylene | Glass |
| Test Chamber Volume (mL) | 250 | 1,000 |
| Test Sediment Volume (mL) | 50 | 175 |
| Overlying Water Volume (mL) | 150 | 725 |

The tests were initiated by randomly placing five test organisms into plastic soufflé cups. Two soufflé cups were randomly placed into each test chamber for a total of 10 organisms per test replicate (*M. bahia* test). Four soufflé cups were randomly placed into each test chamber for a total of 20 organisms per test replicate (*L. plumulosus* test).

Water quality measurements were performed on all test solutions prior to test initiation and daily thereafter, as indicated on the attached data sheets. Overlying water was renewed on the 3rd, 5th and 7th day of the 10-day exposure. The test was conducted at $25 \pm 2^\circ\text{C}$ under fluorescent lighting with a photoperiod of 16 hours light and 8 hours dark. All test vessels were aerated at an estimated rate of 50 to 140 cubic centimeters/minute.

The lethal NOEC (No Observed Effect Concentration) was determined for each sample. The NOEC represents the concentration at and below which the sample result is not statistically different from the reference sediment result. Percent survival of exposed test organisms was determined at test termination by enumeration of live organisms. Survival is defined as any body or appendage movement. Following termination, the data were analyzed using TOXCALC version 5.0.23j.

The reference toxicants, sodium dodecyl sulfate (*M. bahia*) and ammonia (*L. plumulosus*), were used to monitor the sensitivity of the test organisms and the precision of the testing procedure. Acute reference toxicant tests are performed at least monthly and the resulting LC₅₀ values are plotted to determine if the results are within prescribed limits.

RESULTS

Mysidopsis bahia

Average survival percentages after 10 days of exposure are tabulated below.

| Percent Effluent | Percent Survival |
|--------------------------|------------------|
| Laboratory Control | 96 |
| BD-BG Reference Sediment | 96 |
| BD-01 | 100 |
| BD-05 | 94 |
| BD-09 | 96 |
| BD-10 | 92 |

The laboratory control met performance criteria for survival and variability. Based on the statistical analysis (pages 5 through 8) the 10-day survival NOECs of the CB&I BD samples were 100%. Detailed data for the test, including survival and water quality, are presented on pages 15 through 20.

Leptocheirus plumulosus

Average survival percentages after 10 days of exposure are tabulated below.

| Percent Effluent | Percent Survival |
|--------------------------|------------------|
| Laboratory Control | 95 |
| BD-BG Reference Sediment | 94 |
| BD-01 | 94 |
| BD-05 | 98 |
| BD-09 | 96 |
| BD-10 | 95 |

The laboratory control met performance criteria for survival and variability. Based on the statistical analysis (pages 9 through 12) the 10-day survival NOECs of the CB&I BD samples were 100. Detailed data for the test, including survival and water quality, are presented on pages 21 through 26.

QUALITY CONTROL

The reference toxicant LC₅₀ results for both organisms were within the control limits established with the twenty most recent reference toxicant LC₅₀ results (pages 13 and 14).

Acute-10-Day Survival

Start Date: 2/17/2015 Test ID: 15021226A Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021226 Sample Type: BD-01
 Sample Date: 1/31/2015 Protocol: E133792-ASTM E-1367-92 Test Species: MY-Mysidopsis bahia
 Comments: [A] EPA 823-B-98-004 3-23-15 MISE

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 0.90 | 0.90 | 1.00 |
| D-Control | 1.00 | 1.00 | 1.00 | 1.00 | 0.80 |
| 100 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

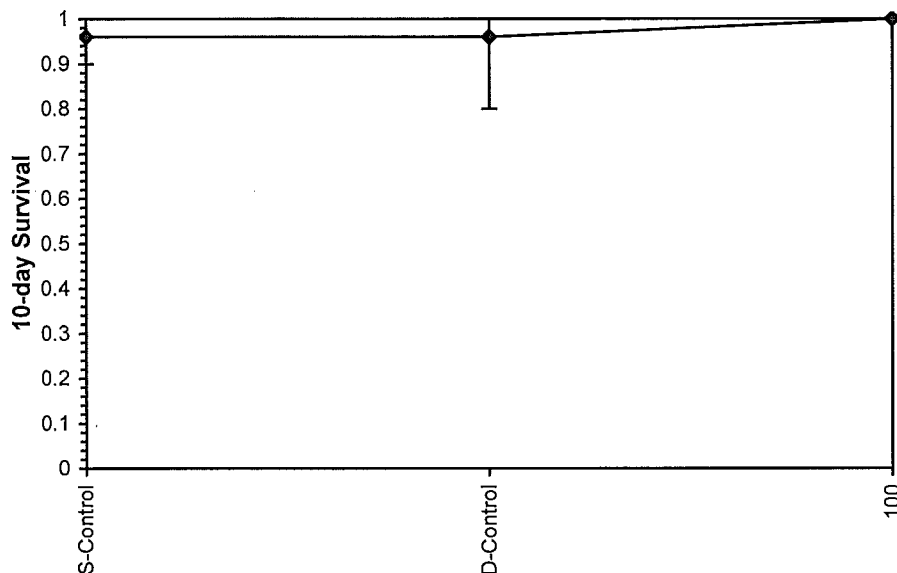
| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | Rank Sum | 1-Tailed Critical |
|-----------|------|--------|-------------------------------|--------|--------|-----|----------|-------------------|
| | | | Mean | Min | Max | CV% | | |
| S-Control | 0.96 | 1.0000 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | |
| D-Control | 0.96 | 1.0000 | 1.3510 | 1.1071 | 1.4120 | 10 | 5 | * |
| 100 | 1.00 | 1.0417 | 1.4120 | 1.4120 | 1.4120 | 0 | 5 | 30.00 19.00 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt |
|---|-----------|----------|---------|---------|
| Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01) | 0.62485 | 0.781 | -2.5156 | 7.15179 |
| Equality of variance cannot be confirmed | | | | |
| The control means are not significantly different (p = 0.96) | 0.05783 | 2.306 | | |

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences
 Treatments vs D-Control

Dose-Response Plot



Acute-10-Day Survival

Start Date: 2/17/2015 Test ID: 15021224A Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021224 Sample Type: BD-05
 Sample Date: 1/31/2015 Protocol: ~~E-133792-ASTM-E-1367-92~~ Test Species: MY-Mysidopsis bahia
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 0.90 | 0.90 | 1.00 |
| D-Control | 1.00 | 1.00 | 1.00 | 1.00 | 0.80 |
| 100 | 1.00 | 0.70 | 1.00 | 1.00 | 1.00 |

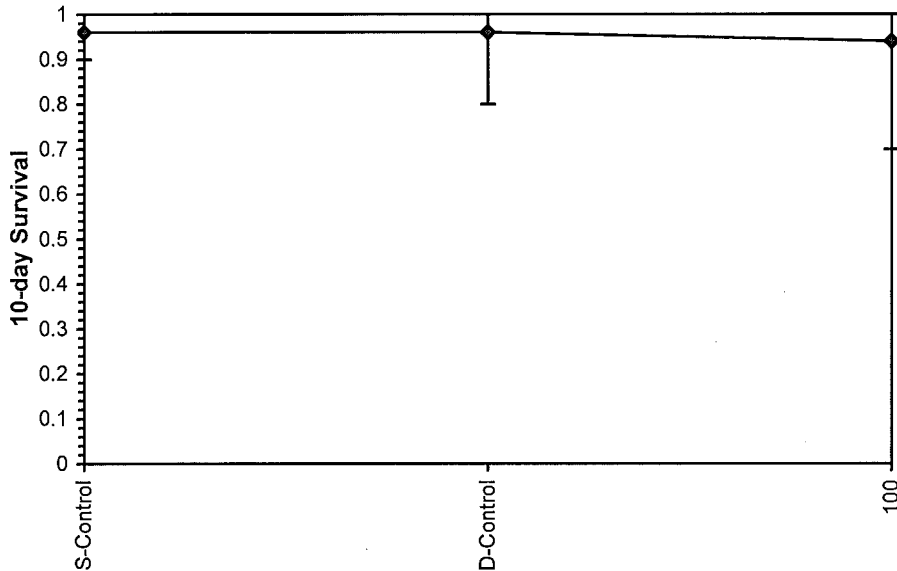
| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | Rank Sum | 1-Tailed Critical |
|-----------|------|--------|-------------------------------|--------|--------|-----|----------|-------------------|
| | | | Mean | Min | Max | CV% | | |
| S-Control | 0.96 | 1.0000 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | |
| D-Control | 0.96 | 1.0000 | 1.3510 | 1.1071 | 1.4120 | 10 | 5 | * |
| 100 | 0.94 | 0.9792 | 1.3278 | 0.9912 | 1.4120 | 14 | 5 | 27.00 19.00 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt |
|---|-----------|----------|--------|---------|
| Shapiro-Wilk's Test indicates non-normal distribution ($p \leq 0.01$) | 0.5909 | 0.781 | -1.844 | 1.96445 |
| F-Test indicates equal variances ($p = 0.55$) | 1.90569 | 23.1545 | | |
| The control means are not significantly different ($p = 0.96$) | 0.05783 | 2.306 | | |

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences
 Treatments vs D-Control

Dose-Response Plot



Acute-10-Day Survival

Start Date: 2/17/2015 Test ID: 15021223A Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021223 Sample Type: BD-09
 Sample Date: 1/30/2015 Protocol: E-133792-ASTM E-1367-92 Test Species: MY-Mysidopsis bahia
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 0.90 | 0.90 | 1.00 |
| D-Control | 1.00 | 1.00 | 1.00 | 1.00 | 0.80 |
| 100 | 0.90 | 1.00 | 0.90 | 1.00 | 1.00 |

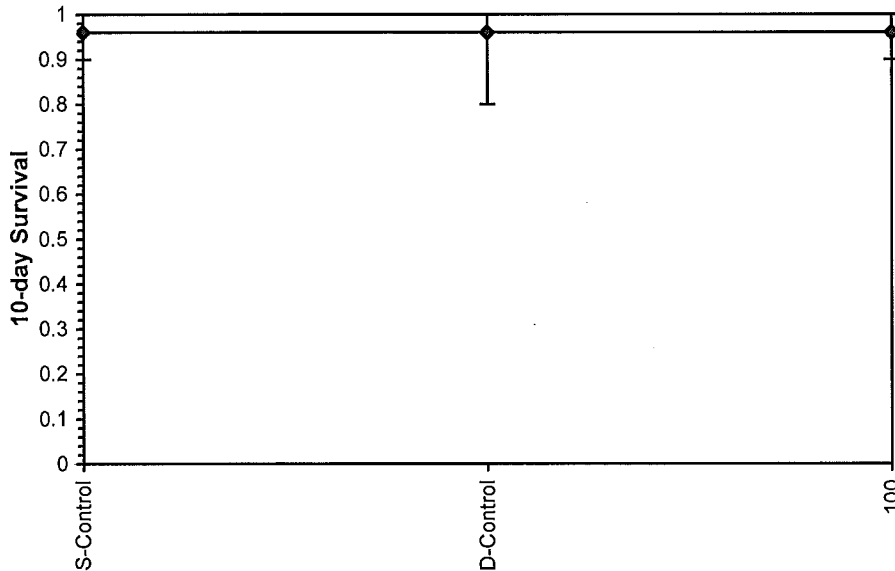
| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | | Rank Sum | 1-Tailed Critical |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|----------|-------------------|
| | | | Mean | Min | Max | CV% | N | | |
| S-Control | 0.96 | 1.0000 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | | |
| D-Control | 0.96 | 1.0000 | 1.3510 | 1.1071 | 1.4120 | 10 | 5 | * | |
| 100 | 0.96 | 1.0000 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | 26.00 | 19.00 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt |
|---|-----------|----------|---------|---------|
| Shapiro-Wilk's Test indicates non-normal distribution ($p \leq 0.01$) | 0.66562 | 0.781 | -1.5857 | 1.66217 |
| F-Test indicates equal variances ($p = 0.43$) | 2.33299 | 23.1545 | | |
| The control means are not significantly different ($p = 0.96$) | 0.05783 | 2.306 | | |

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences
 Treatments vs D-Control

Dose-Response Plot



Acute-10-Day Survival

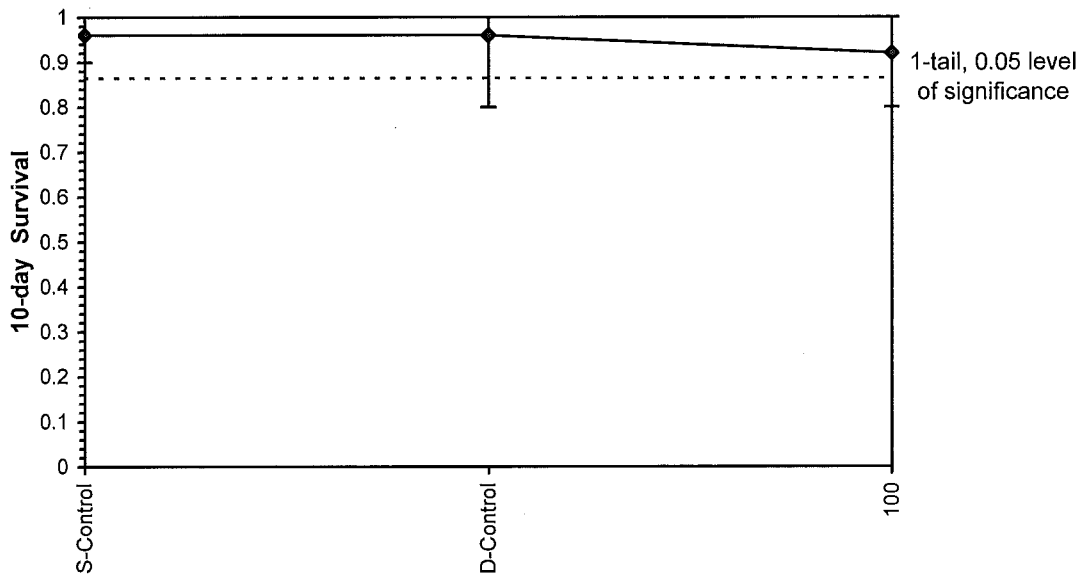
Start Date: 2/17/2015 Test ID: 15021222A Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021222 Sample Type: BD-10
 Sample Date: 1/30/2015 Protocol: E133792-ASTM-E-1367-92 Test Species: MY-Mysidopsis bahia
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 0.90 | 0.90 | 1.00 |
| D-Control | 1.00 | 1.00 | 1.00 | 1.00 | 0.80 |
| 100 | 1.00 | 0.90 | 0.80 | 1.00 | 0.90 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|----------|-------|--------|----------|--|
| | | | Mean | Min | Max | CV% | Critical | | | MSD | |
| S-Control | 0.96 | 1.0000 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | | | | |
| D-Control | 0.96 | 1.0000 | 1.3510 | 1.1071 | 1.4120 | 10 | 5 | * | | | |
| 100 | 0.92 | 0.9583 | 1.2859 | 1.1071 | 1.4120 | 10 | 5 | 0.777 | 1.860 | 0.1560 | |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.84814 | 0.781 | -1.0921 | 0.22772 | | |
| F-Test indicates equal variances ($p = 0.92$) | 1.11848 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.96$) | 0.05783 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.08718 | 0.09153 | 0.01062 | 0.0176 | 0.45961 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

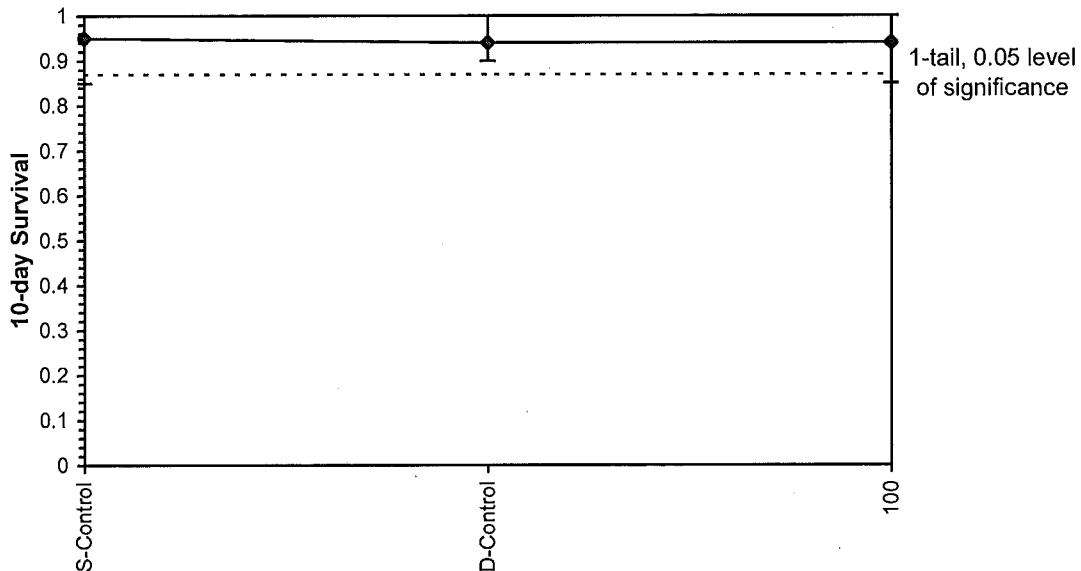
Start Date: 2/17/2015 Test ID: 15021226L Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021226 Sample Type: BD-01
 Sample Date: 1/31/2015 Protocol: ~~E133792-ASTM E 1367-92~~ Test Species: Leptocheirus plumulosus
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.85 | 0.95 | 1.00 | 0.95 | 1.00 |
| D-Control | 0.90 | 1.00 | 0.95 | 0.95 | 0.90 |
| 100 | 1.00 | 0.85 | 1.00 | 0.90 | 0.95 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | | 1-Tailed | | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|----------|----------|--------|
| | | | Mean | Min | Max | CV% | N | t-Stat | Critical | MSD |
| S-Control | 0.95 | 1.0106 | 1.3562 | 1.1731 | 1.4588 | 9 | 5 | | | |
| D-Control | 0.94 | 1.0000 | 1.3295 | 1.2490 | 1.4588 | 7 | 5 | * | | |
| 100 | 0.94 | 1.0000 | 1.3370 | 1.1731 | 1.4588 | 9 | 5 | -0.109 | 1.860 | 0.1278 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.90648 | 0.781 | -0.0443 | -1.2013 | | |
| F-Test indicates equal variances ($p = 0.48$) | 2.13318 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.69$) | 0.41048 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.07306 | 0.07749 | 0.00014 | 0.01181 | 0.91573 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

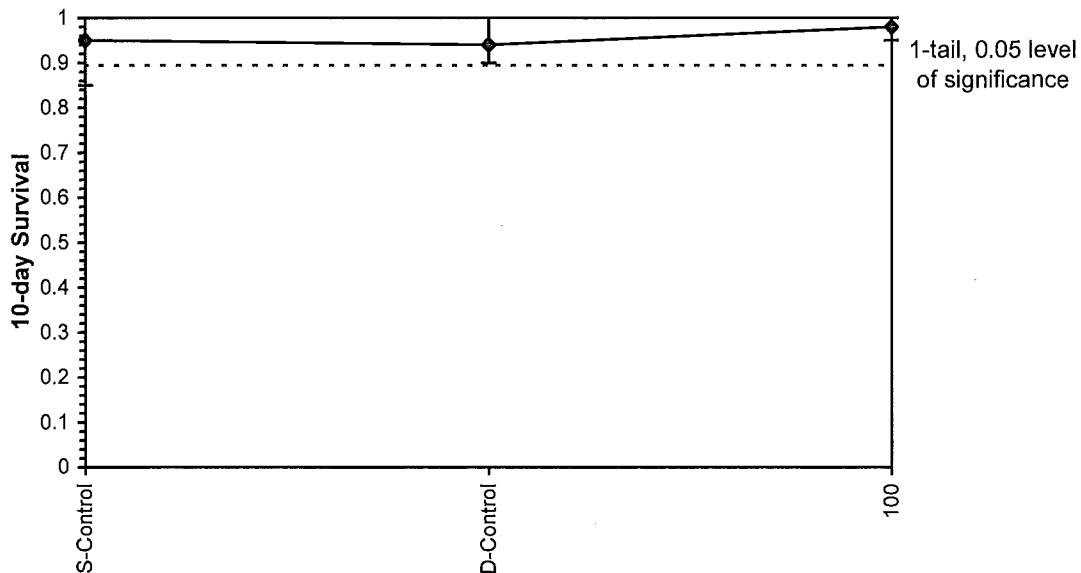
Start Date: 2/17/2015 Test ID: 15021224L Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021224 Sample Type: BD-05
 Sample Date: 1/31/2015 Protocol: ~~E133792-ASTM E 1367-92~~ Test Species: Leptocheirus plumulosus
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.85 | 0.95 | 1.00 | 0.95 | 1.00 |
| D-Control | 0.90 | 1.00 | 0.95 | 0.95 | 0.90 |
| 100 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.95 | 1.0106 | 1.3562 | 1.1731 | 1.4588 | 9 | 5 | | | |
| D-Control | 0.94 | 1.0000 | 1.3295 | 1.2490 | 1.4588 | 7 | 5 | * | | |
| 100 | 0.98 | 1.0426 | 1.4134 | 1.3453 | 1.4588 | 4 | 5 | -1.757 | 1.860 | 0.0888 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.87667 | 0.781 | 0.29911 | -0.7788 | | |
| F-Test indicates equal variances ($p = 0.53$) | 1.95131 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.69$) | 0.41048 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences Treatments vs D-Control | 0.04796 | 0.05087 | 0.01759 | 0.0057 | 0.11703 | 1, 8 |

Dose-Response Plot



Acute-10-Day Survival

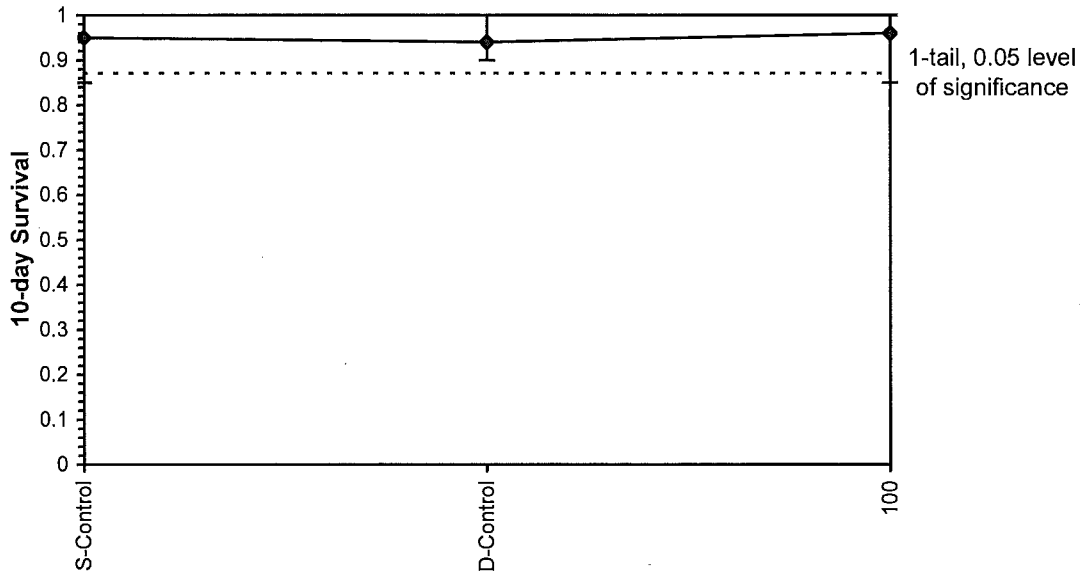
Start Date: 2/17/2015 Test ID: 15021223L Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021223 Sample Type: BD-09
 Sample Date: 1/30/2015 Protocol: E133792-ASTM-E-1367-92 Test Species: Leptocheirus plumulosus
 Comments: A

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.85 | 0.95 | 1.00 | 0.95 | 1.00 |
| D-Control | 0.90 | 1.00 | 0.95 | 0.95 | 0.90 |
| 100 | 0.95 | 1.00 | 1.00 | 1.00 | 0.85 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.95 | 1.0106 | 1.3562 | 1.1731 | 1.4588 | 9 | 5 | | | |
| D-Control | 0.94 | 1.0000 | 1.3295 | 1.2490 | 1.4588 | 7 | 5 | * | | |
| 100 | 0.96 | 1.0213 | 1.3789 | 1.1731 | 1.4588 | 9 | 5 | -0.726 | 1.860 | 0.1266 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|--------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.92708 | 0.781 | -0.8103 | 0.3469 | | |
| F-Test indicates equal variances ($p = 0.50$) | 2.07674 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.69$) | 0.41048 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences Treatments vs D-Control | 0.07228 | 0.07666 | 0.00611 | 0.0116 | 0.48851 | 1, 8 |

Dose-Response Plot



Acute-10-Day Survival

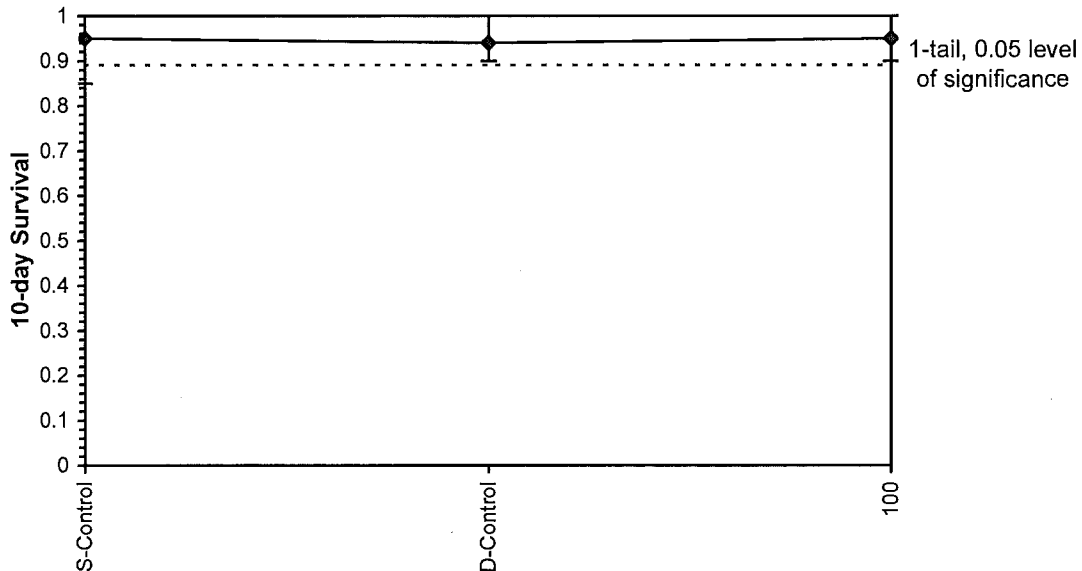
Start Date: 2/17/2015 Test ID: 15021222L Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021222 Sample Type: BD-10
 Sample Date: 1/30/2015 Protocol: E133792-ASTM E 1367-92 Test Species: Leptocheirus plumulosus
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.85 | 0.95 | 1.00 | 0.95 | 1.00 |
| D-Control | 0.90 | 1.00 | 0.95 | 0.95 | 0.90 |
| 100 | 0.95 | 0.95 | 0.90 | 1.00 | 0.95 |

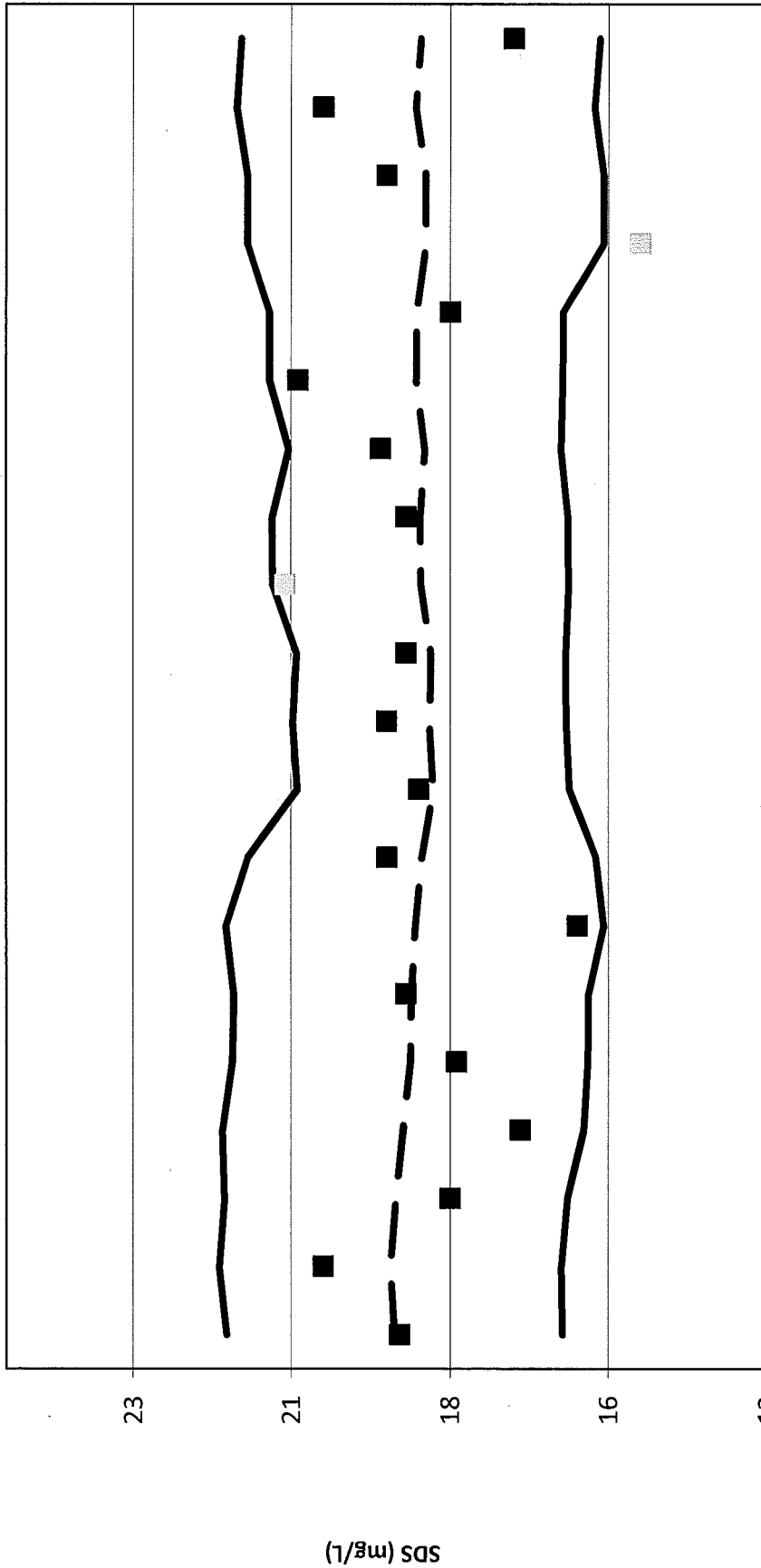
| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|----------|--------|--------|----------|--|
| | | | Mean | Min | Max | CV% | Critical | | | MSD | |
| S-Control | 0.95 | 1.0106 | 1.3562 | 1.1731 | 1.4588 | 9 | 5 | | | | |
| D-Control | 0.94 | 1.0000 | 1.3295 | 1.2490 | 1.4588 | 7 | 5 | * | | | |
| 100 | 0.95 | 1.0106 | 1.3487 | 1.2490 | 1.4588 | 6 | 5 | -0.377 | 1.860 | 0.0950 | |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.90191 | 0.781 | 0.46143 | -0.3963 | | |
| F-Test indicates equal variances ($p = 0.77$) | 1.36564 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.69$) | 0.41048 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences Treatments vs D-Control | 0.05181 | 0.05495 | 0.00093 | 0.00653 | 0.71624 | 1, 8 |

Dose-Response Plot

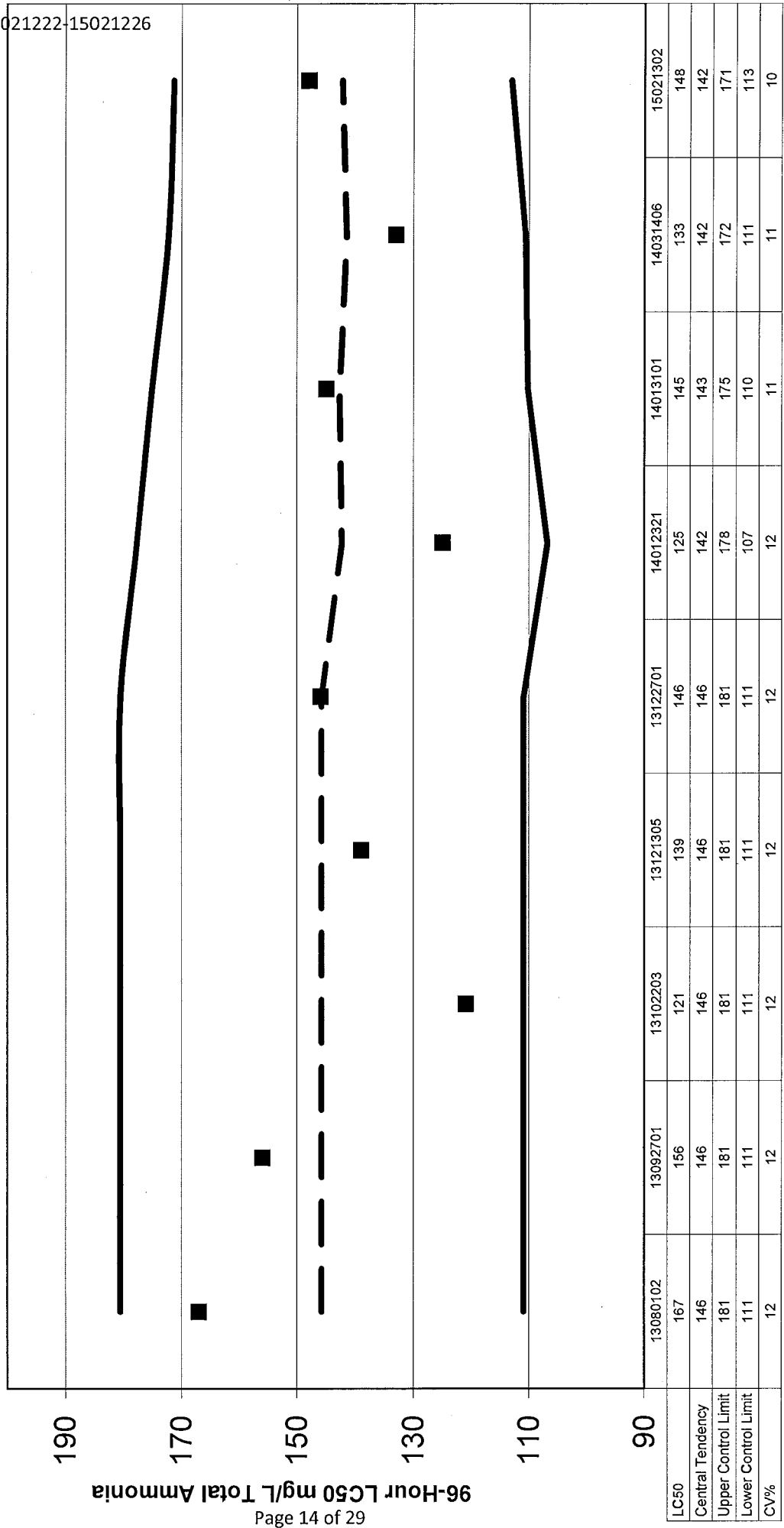


CK Associates Sodium Dodecyl Sulfate Reference Toxicant Control Chart 96-Hour LC₅₀ for *Mysidopsis bahia*



| | 1308120 | 1308300 | 1309041 | 1310070 | 1311180 | 1312160 | 1402120 | 1403240 | 1404300 | 1405290 | 1406260 | 1407290 | 1409220 | 1410200 | 1411200 | 1412080 | 1412180 | 1501020 | 1503020 |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| LC50 within 2s | 19 | 20 | 18 | 17 | 18 | 19 | 16 | 19 | 19 | 19 | 19 | 21 | 19 | 20 | 18 | 19 | 19 | 20 | 17 |
| LC50 btw 2s and 3s | | | | | | | | | | | | | | | | | | | |
| LC50 beyond 3s | | | | | | | | | | | | | | | | | | | |
| Central Tendency LC50 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 19 | 19 | 18 | 18 | 19 | 18 |
| Upper Acceptable LC50 | 22 | 22 | 22 | 22 | 21 | 21 | 22 | 21 | 20 | 20 | 20 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| Lower Acceptable LC50 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| %CV | 7.0 | 7.1 | 7.2 | 7.6 | 7.5 | 7.5 | 8.0 | 7.4 | 5.9 | 5.9 | 5.8 | 6.3 | 5.8 | 6.2 | 6.2 | 7.6 | 7.6 | 7.6 | 7.7 |

C-K Associates, LLC
Reference - Water Column 96-Hour Acute Control Chart
Leptocheirus plumulosus
Total Ammonia mg/L



■ LC50 — Central Tendency - - - Upper Control Limit - - - Lower Control Limit ● CV%



Survival Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Template: 1

Sample ID: BD Area

Organism Age: 6 days old

QC Review: 662

Test ID: 15021222-26

Organism Batch: 9030

| |
|-----------------|
| Exposure Period |
| Day |
| Date |
| Time |
| Technician |

| |
|-----------------|
| Test Initiation |
| Tue |
| 2.17.15 |
| 1410 |
| NAG |

| |
|---|
| Observations Made at the End of 10-Day Exposure Period: |
| Tue Feb |
| 2.27.15 |
| 1000 |
| 062 |

2.27.15
062

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| Lab Control | 1 |
| | 2 |
| (Culture Sediment) | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 9 |
| 9 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-BG REF Sediment | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 8 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-01 | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |



Survival Data for 10-Day Whole Sediment Toxicity Test

Leptocheirus plumulosus
Mysidopsis Oshima

662 2.16.05

Client: CB & I

Sample ID: BD Area

Test ID: 15021222-26

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-05 | 3 |
| | 4 |
| | 5 |

| Number of Live Organisms |
|--------------------------|
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| Number of Live Organisms |
|--------------------------|
| 10 |
| 7 |
| 10 |
| 10 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-09 | 3 |
| | 4 |
| | 5 |

| Number of Live Organisms |
|--------------------------|
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| Number of Live Organisms |
|--------------------------|
| 9 |
| 10 |
| 9 |
| 10 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-10 | 3 |
| | 4 |
| | 5 |

| Number of Live Organisms |
|--------------------------|
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| Number of Live Organisms |
|--------------------------|
| 10 |
| 9 |
| 8 |
| 10 |
| 9 |

| Technician Observations | | | |
|-------------------------|------|----------|--------------|
| Date | Time | Initials | Observations |
| | | | |
| | | | |
| | | | |
| | | | |



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID BD Area

Lab ID: 15021222-26

DATA SHEET FOR 10-DAY

Mysidopsis bahia

STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

Control - Culture Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.0 | 7.6 | 1.86 | 02/17/15 | 1400 | NAG |
| 1 | | 24.9 | 19 | 8.0 | 6.6 | 4.14 | 02/18/15 | 1130 | NAG |
| 2 | | 25.2 | 19 | 8.1 | 6.9 | 2.61 | 02/19/15 | 1120 | NAG |
| 3 | yes | 24.9 | 21 | 7.9 | 6.3 | 4.14 | 02/20/15 | 1140 | NAG |
| 4 | | 26.4 | 20 | 8.0 | 6.0 | 0.46 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 21 | 8.1 | 6.2 | 0.39 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 21 | 7.3 | 6.0 | N/A | 02/23/15 | 1100 | NAG |
| 7 | | 24.9 | 20 | 8.1 | 6.0 | 0.12 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 22 | 8.1 | 6.6 | 2.18 | 02/25/15 | 1010 | ECH |
| 9 | | 24.6 | 21 | 7.8 | 5.7 | 0.16 | 02/26/15 | 0920 | NAG |
| 10 | Terminate | 24.5 | 21 | 7.9 | 6.2 | 0.56 | 02/27/15 | 0930 | 662 |

BD-BG Reference Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 19 | 7.0 | 6.1 | 0.67 | 02/17/15 | 1400 | NAG |
| 1 | | 24.9 | 20 | 7.6 | 6.5 | 0.91 | 02/18/15 | 1130 | NAG |
| 2 | | 25.2 | 19 | 7.6 | 6.7 | 2.70 | 02/19/15 | 1120 | NAG |
| 3 | yes | 24.9 | 20 | 7.5 | 6.3 | 4.68 | 02/20/15 | 1140 | NAG |
| 4 | | 26.4 | 21 | 7.8 | 6.1 | 1.02 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 21 | 7.8 | 6.2 | 2.00 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 22 | 7.2 | 6.0 | N/A | 02/23/15 | 1100 | NAG |
| 7 | | 24.9 | 20 | 8.0 | 6.3 | 1.77 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 21 | 7.8 | 5.7 | 1.89 | 02/25/15 | 1010 | ECH |
| 9 | | 24.6 | 21 | 7.8 | 5.5 | 0.22 | 02/26/15 | 0920 | NAG |
| 10 | Terminate | 24.5 | 22 | 7.7 | 6.3 | 0.72 | 02/27/15 | 0930 | 662 |

AS 2/24/15

Renewal: Conducted every 48 hours AS noted MSE 3-23-15

Feeding: Organisms were fed daily



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID BD Area

Lab ID: 15021222-26

DATA SHEET FOR 10-DAY

Mysidopsis bahia

STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

BD-01

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 19 | 7.3 | 6.4 | 0.11 | 02/17/15 | 1400 | NAG |
| 1 | | 24.9 | 19 | 7.9 | 6.9 | 1.38 | 02/18/15 | 1130 | NAG |
| 2 | | 25.2 | 19 | 7.8 | 6.4 | 2.97 | 02/19/15 | 1120 | NAG |
| 3 | yes | 24.9 | 21 | 8.1 | 6.0 | 4.50 | 02/20/15 | 1140 | NAG |
| 4 | | 26.4 | 22 | 8.1 | 6.4 | 1.65 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 22 | 7.7 | 5.2 | 2.46 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 21 | 7.8 | 6.3 | N/A | 02/23/15 | 1100 | NAG |
| 7 | | 24.9 | 21 | 8.2 | 6.9 | 1.77 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 21 | 8.1 | 6.5 | 2.04 | 02/25/15 | 1010 | ECH |
| 9 | | 24.6 | 21 | 8.0 | 5.9 | 0.29 | 02/26/15 | 0920 | NAG |
| 10 | Terminate | 24.5 | 21 | 8.0 | 6.3 | 0.80 | 02/27/15 | 0930 | CCZ |

BD-05

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 19 | 8.1 | 6.8 | 0.08 | 02/17/15 | 1400 | NAG |
| 1 | | 24.9 | 20 | 8.1 | 6.6 | 0.68 | 02/18/15 | 1130 | NAG |
| 2 | | 25.2 | 21 | 8.2 | 6.8 | 2.16 | 02/19/15 | 1120 | NAG |
| 3 | yes | 24.9 | 19 | 7.8 | 6.4 | 4.14 | 02/20/15 | 1140 | NAG |
| 4 | | 26.4 | 21 | 8.2 | 6.1 | 3.60 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 22 | 8.1 | 5.9 | 5.36 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 21 | 8.2 | 6.4 | N/A | 02/23/15 | 1330 | KCS |
| 7 | | 24.9 | 21 | 8.2 | 6.4 | 3.40 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 21 | 8.3 | 6.1 | 2.88 | 02/25/15 | 1010 | ECH |
| 9 | | 24.6 | 21 | 8.1 | 6.1 | 3.66 | 02/26/15 | 0920 | NAG |
| 10 | Terminate | 24.5 | 21 | 8.1 | 6.3 | 3.25 | 02/27/15 | 0930 | CCZ |

Renewal: Conducted every 48 hours AS noted 3-23-15 MSE

Feeding: Organisms were fed daily



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID BD Area

Lab ID: 15021222-26

DATA SHEET FOR 10-DAY

Mysidopsis bahia

STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

BD-09

NAG
2/27/15

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.2 | 6.9 | 0.08 | 02/17/15 | 1400 | NAG |
| 1 | | 24.9 | 20 | 8.1 | 7.0 | 1.14 | 02/18/15 | 1130 | NAG |
| 2 | | 25.2 | 21 | 8.2 | 6.8 | 1.80 | 02/19/15 | 1120 | NAG |
| 3 | yes | 24.9 | 21 | 8.0 | 6.4 | 3.24 | 02/20/15 | 1140 | NAG |
| 4 | y | 26.4 | 21 | 8.3 | 6.4 | 1.46 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 22 | 8.3 | 6.3 | 2.05 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 23 21 | 8.2 | 6.2 | N/A | 02/23/15 | 1100 | NAG |
| 7 | y | 24.9 | 21 | 8.3 | 6.3 | 2.01 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 22 | 8.4 | 6.5 | 2.12 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 21 | 7.9 | 5.7 | 1.23 | 02/26/15 | 0920 | NAG |
| 10 | Terminate | 24.5 | 21 | 7.9 | 6.1 | 1.41 | 02/27/15 | 0930 | GGZ |

BD-10

NAG
2/27/15

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.1 | 7.0 | 0.03 | 02/17/15 | 1400 | NAG |
| 1 | | 24.9 | 20 | 8.0 | 6.1 | 0.05 | 02/18/15 | 1130 | NAG |
| 2 | | 25.2 | 22 | 8.2 | 6.8 | 0.06 | 02/19/15 | 1120 | NAG |
| 3 | yes | 24.9 | 20 | 8.0 | 6.5 | 0.54 | 02/20/15 | 1140 | NAG |
| 4 | y | 26.4 | 21 | 8.3 | 6.4 | 0.68 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 21 | 8.2 | 6.0 | 0.29 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 23 21 | 8.4 | 6.2 | N/A | 02/23/15 | 1100 | NAG |
| 7 | y | 24.9 | 21 | 8.4 | 6.5 | 1.80 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 22 | 8.3 | 6.6 | 2.24 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 21 | 7.9 | 5.5 | 1.47 | 02/26/15 | 0920 | NAG |
| 10 | Terminate | 24.5 | 21 | 7.9 | 6.2 | 2.01 | 02/27/15 | 0930 | GGZ |

Renewal: Conducted every 48 hours as noted 3-23-15 MST

Feeding: Organisms were fed daily



Daily Instrument Usage Log
Mysidopsis bahia

Client: CB & I

Sample ID BD Area

Lab ID: 15021222-26

Meter Identification:

| Day | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|------------|-------------------|------------|----------------|-------------------|----------|------|---------|
| 0 | T-14.2 | M-003 | | | DR-890 | 02/17/15 | 1400 | NAG |
| 1 | T-14.2 | M-003 | | | DR-890 | 02/18/15 | 1130 | NAG |
| 2 | T-14.2 | M-003 | | | DR-890 | 02/19/15 | 1120 | NAG |
| 3 | T-14.2 | M-003 | | | DR-890 | 02/20/15 | 1140 | NAG |
| 4 | T-14.2 | M-003 | | | DR-890 | 02/21/15 | 1120 | KCS |
| 5 | T-14.2 | M-003 | | | DR-890 | 02/22/15 | 1000 | KCS |
| 6 | T-14.2 | M-003 | | | DR-890 | 02/23/15 | 1100 | NAG |
| 7 | T-14.2 | M-003 | | | DR-890 | 02/24/15 | 1330 | KCS |
| 8 | T-14.2 | M-003 | | | DR-890 | 02/25/15 | 1040 | EZH |
| 9 | T-14.2 | M-003 | | | DR-890 | 02/26/15 | 0920 | NAG |
| 10 | T-14.2 | M-003 | | | DR-890 | 02/27/15 | 0930 | GGZ |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Template: Z

Sample ID: BD Area

Organism Age: 3-5mm

QC Review: *GW*

Test ID: 15021222-26

Organism Batch:

| |
|-----------------|
| Exposure Period |
| Day |
| Date |
| Time |
| Technician |

| |
|-----------------|
| Test Initiation |
| Tue |
| 2.17.15 |
| 1320 |
| NAG |

| |
|---|
| Observations Made at the End of 10-Day Exposure Period: |
| <i>Just FAC</i> |
| 2.22.15 |
| 0900 |
| 662 |

*2.22.15
662*

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| Lab Control | 1 |
| | 2 |
| (Culture Sediment) | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 17 |
| 19 |
| 20 |
| 19 |
| 20 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-BG REF Sediment | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 18 |
| 20 |
| 19 |
| 19 |
| 18 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-01 | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 17 |
| 20 |
| 18 |
| 19 |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID: BD Area

Test ID: 15021222-26

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-05 | 3 |
| | 4 |
| | 5 |

| Number of Live Organisms |
|--------------------------|
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| Number of Live Organisms |
|--------------------------|
| 20 |
| 20 |
| 19 |
| 19 |
| 20 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-09 | 3 |
| | 4 |
| | 5 |

| Number of Live Organisms |
|--------------------------|
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| Number of Live Organisms |
|--------------------------|
| 19 |
| 20 |
| 20 |
| 20 |
| 17 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| BD-10 | 3 |
| | 4 |
| | 5 |

| Number of Live Organisms |
|--------------------------|
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| Number of Live Organisms |
|--------------------------|
| 19 |
| 19 |
| 18 |
| 20 |
| 19 |

| Technician Observations | | | |
|-------------------------|------|----------|--------------|
| Date | Time | Initials | Observations |
| | | | |
| | | | |
| | | | |
| | | | |



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID BD Area

Lab ID: 15021222-26

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

Control - Culture Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|---------------------------------|---------|
| 0 | Initiate | 24.6 | 20 | 8.0 | 6.5 | 1.86 | 02/17/15 | 1320 | NAG |
| 1 | | 24.9 | 20 | 8.0 | 6.8 | 3.24 | 02/18/15 | 1135 | NAG |
| 2 | | 25.2 | 19 | 8.1 | 6.6 | 3.51 | 02/19/15 | 1130 | NAG |
| 3 | yes | 24.9 | 21 | 7.7 | 6.3 | 3.33 | 02/20/15 | 1145 | NAG |
| 4 | | 26.4 | 19 | 7.9 | 5.5 | 1.44 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 19 | 7.9 | 5.6 | 0.70 | 02/22/15 | 0950 ¹⁰⁰⁰ | KCS |
| 6 | yes | 25.9 | 21 | 7.7 | 6.2 | N/A | 02/23/15 | 1230 | NAG |
| 7 | o | 24.9 | 20 | 8.1 | 6.0 | 0.25 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 20 | 8.0 | 6.3 | 0.25 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 20 | 8.0 | 6.1 | 0.13 | 02/26/15 | 0925 | NAG |
| 10 | Terminate | 24.5 | 20 | 8.1 | 6.3 | 0.07 | 02/27/15 | 0930 | 662 |

KCS
2/22/15

BD-BG Reference Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|-----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 21 | 8.0 | 6.9 | 0.167 | 02/17/15 | 1320 | NAG |
| 1 | | 24.9 | 20 | 7.4 | 6.7 | 1.17 | 02/18/15 | 1135 | NAG |
| 2 | | 25.2 | 19 | 7.7 | 6.6 | 1.47 | 02/19/15 | 1130 | NAG |
| 3 | yes | 24.9 | 22 | 8.0 | 6.3 | 1.74 | 02/20/15 | 1145 | NAG |
| 4 | | 26.4 | 20 | 7.9 | 6.1 | 1.68 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 20 | 7.9 | 6.2 | 6.60 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 21 | 7.4 | 6.1 | N/A | 02/23/15 | 1230 | NAG |
| 7 | o | 24.9 | 21 | 8.0 | 6.1 | 1.14 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 21 | 7.8 | 6.6 | 1.23 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 20 | 7.9 | 6.0 | 0.16 | 02/26/15 | 0925 | NAG |
| 10 | Terminate | 24.5 | 20 | 7.9 | 6.2 | <0.01 | 02/27/15 | 0930 | 662 |

2:20 KCS
2/24/15

Renewal: Conducted every 48 hours - AS noted 3-23-15 MSC

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID BD Area

Lab ID: 15021222-26

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

BD-01

NAG
2.17.15

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.1 | 6.8 | 0.11 0.86 | 02/17/15 | 1320 | NAG |
| 1 | | 24.9 | 19 | 7.9 | 6.9 | 0.93 | 02/18/15 | 1135 | NAG |
| 2 | | 25.2 | 19 | 7.9 | 7.0 | 1.41 | 02/19/15 | 1130 | NAG |
| 3 | yes | 24.9 | 22 | 7.9 | 6.7 | 1.80 | 02/20/15 | 1145 | NAG |
| 4 | | 26.4 | 20 | 8.1 | 6.3 | 1.02 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 20 | 8.0 | 6.3 | 1.41 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 21 | 7.8 | 6.3 | N/A | 02/23/15 | 1230 | NAG |
| 7 | | 24.9 | 21 | 8.2 | 6.3 | 0.94 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 21 | 8.1 | 6.6 | 0.99 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 20 | 8.0 | 6.2 | 0.21 | 02/26/15 | 0925 | NAG |
| 10 | Terminate | 24.5 | 20 | 7.9 | 6.4 | 0.61 | 02/27/15 | 0930 | 662 |

BD-05

2.17.15
NAG

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.0 | 6.9 | 0.53 0.67 | 02/17/15 | 1320 | NAG |
| 1 | | 24.9 | 21 | 8.0 | 6.9 | 0.54 | 02/18/15 | 1135 | NAG |
| 2 | | 25.2 | 21 | 8.0 | 6.8 | 1.59 | 02/19/15 | 1130 | NAG |
| 3 | yes | 24.9 | 22 | 8.6 | 6.5 | 3.33 | 02/20/15 | 1145 | NAG |
| 4 | | 26.4 | 21 | 8.1 | 6.4 | 2.60 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 21 | 8.2 | 6.3 | 4.59 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 21 | 8.0 | 6.4 | N/A | 02/23/15 | 1230 | NAG |
| 7 | | 24.9 | 21 | 8.3 | 6.4 | 3.99 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 22 | 8.3 | 6.7 | 5.11 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 20 | 8.1 | 6.2 | 1.53 | 02/26/15 | 0925 | NAG |
| 10 | Terminate | 24.5 | 20 | 8.0 | 6.3 | 2.45 | 02/27/15 | 0930 | 662 |

Renewal: Conducted every 48 hours AS noted 3-23-15 MGE

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID BD Area

Lab ID: 15021222-26

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

BD-09

2-17-15
NAG

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.1 | 7.0 | 0.08 | 02/17/15 | 1320 | NAG |
| 1 | | 24.9 | 20 | 8.1 | 6.8 | 0.08 | 02/18/15 | 1135 | NAG |
| 2 | | 25.2 | 20 | 8.1 | 6.9 | 0.33 | 02/19/15 | 1130 | NAG |
| 3 | yes | 24.9 | 20 | 7.8 | 6.5 | 0.05 | 02/20/15 | 1145 | NAG |
| 4 | | 26.4 | 20 | 8.2 | 6.5 | 1.12 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 21 | 8.2 | 6.4 | 1.29 | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 21 | 8.1 | 6.5 | N/A | 02/23/15 | 1230 | NAG |
| 7 | | 24.9 | 21 | 8.3 | 6.5 | 1.24 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 21 | 8.1 | 6.6 | 1.59 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 20 | 8.1 | 6.5 | 0.45 | 02/26/15 | 0925 | NAG |
| 10 | Terminate | 24.5 | 20 | 8.0 | 6.6 | 1.96 | 02/27/15 | 0930 | 662 |

BD-10

2-17-15
NAG

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.1 | 7.1 | 0.08 | 02/17/15 | 1320 | NAG |
| 1 | | 24.9 | 19 | 8.0 | 6.8 | 0.66 | 02/18/15 | 1135 | NAG |
| 2 | | 25.2 | 19 | 7.9 | 6.5 | 1.35 | 02/19/15 | 1130 | NAG |
| 3 | yes | 24.9 | 21 | 8.0 | 6.3 | 1.80 | 02/20/15 | 1145 | NAG |
| 4 | | 26.4 | 21 | 8.2 | 6.4 | 0.03 | 02/21/15 | 1120 | KCS |
| 5 | | 25.1 | 21 | 8.3 | 6.2 | 1.29 ^{0.06} | 02/22/15 | 1000 | KCS |
| 6 | yes | 25.9 | 21 | 8.2 | 6.4 | N/A | 02/23/15 | 1230 | NAG |
| 7 | | 24.9 | 21 | 8.3 | 6.4 | 0.65 | 02/24/15 | 1330 | KCS |
| 8 | yes | 24.9 | 21 | 8.4 | 6.6 | 1.18 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 20 | 8.2 | 6.3 | 0.78 | 02/26/15 | 0925 | NAG |
| 10 | Terminate | 24.5 | 20 | 8.1 | 6.2 | 1.35 | 02/27/15 | 0930 | 662 |

KCS
2/22/15

Renewal: Conducted every 48 hours as noted MSE 3-23-15

Feeding: Organisms were not fed during the test exposure



Daily Instrument Usage Log
Leptocheirus plumulosus

Client: CB & I

Sample ID BD Area

Lab ID: 15021222-26

Meter Identification:

| Day | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|------------|-------------------|------------|----------------|-------------------|----------|------|---------|
| 0 | T-14.2 | M-003 | | | DR-890 | 02/17/15 | 1320 | NAG |
| 1 | T-14.2 | M-003 | | | DR-890 | 02/18/15 | 1135 | NAG |
| 2 | T-14.2 | M-003 | | | DR-890 | 02/19/15 | 1130 | NAG |
| 3 | T-14.2 | M-003 | | | DR-890 | 02/20/15 | 1145 | NAG |
| 4 | T-14.2 | M-003 | | | DR-890 | 02/21/15 | 1120 | KCS |
| 5 | T-14.2 | M-003 | | | DR-890 | 02/22/15 | 1000 | KCS |
| 6 | T-14.2 | M-003 | | | DR-890 | 02/23/15 | 1230 | NAG |
| 7 | T-14.2 | M-003 | | | DR-890 | 02/24/15 | 1330 | KCS |
| 8 | T-14.2 | M-003 | | | DR-890 | 02/25/15 | 1040 | EZH |
| 9 | T-14.2 | M-003 | | | DR-890 | 02/26/15 | 0925 | NAG |
| 10 | T-14.2 | M-003 | | | DR-890 | 02/27/15 | 0930 | GEZ |

Client: CB & I

Sample ID: BD Area

Test ID: 15021222-26

Site-spec.

Instruct.: Control sediment is lepto culture sediment. Overlying water is 20 ppt ASSW.

Note: All volumes are expressed in milliliters (mL)

Leptocheirus plumulosus

| Sediment Vol/Rep (mL) | Reps/Trt | Org/Rep | ASSW Vol/Rep (mL) |
|-----------------------|----------|---------|-------------------|
| 175 | 5 | 20 | 725 |

Mysidopsis bahia

| Sediment Vol/Rep (mL) | Reps/Trt | Org/Rep | ASSW Vol/Rep (mL) |
|-----------------------|----------|---------|-------------------|
| 50 | 5 | 10 | 150 |

| Conc. | Sediment (mL) | ASSW (mL) |
|-----------------------------|---------------|-----------|
| Lab control | 975 | 3625 |
| BD-BG REF | 975 | 3625 |
| BD-01 | 975 | 3625 |
| BD-05 | 975 | 3625 |
| BD-09 | 975 | 3625 |
| BD-10 | 975 | 3625 |
| Total ASSW for Test Renewal | | 21750 |

| Conc. | Sediment (mL) | ASSW (mL) |
|-----------------------------|---------------|-----------|
| Lab control | 250 | 750 |
| BD-BG REF | 250 | 750 |
| BD-01 | 250 | 750 |
| BD-05 | 250 | 750 |
| BD-09 | 250 | 750 |
| BD-10 | 250 | 750 |
| Total ASSW for Test Renewal | | 4500 |

| | |
|-------------------|------------------------|
| Initiation Date: | Tue, February 17, 2015 |
| WQ Parameter Vol: | 100 mL |

Note: Initiation Date = Organism Loading (ASSW, test sample and control sediment are placed in the test chambers the day prior to organism loading.)

Test Preparation Documentation for the Beginning of 10-Day Exposure Period
(ASSW + Sediment)

| | |
|-------------------|------------|
| Control Sediment | |
| Sediment Batch ID | 150212-CUL |

| Field Sediments | BD-BG Ref | BD-01 | BD-05 | BD-09 | BD-10 |
|-----------------|-----------|----------|----------|----------|----------|
| Sample ID | 15021225 | 15021226 | 15021224 | 15021223 | 15021222 |
| Collection Date | 1.31.15 | 1.31.15 | 1.31.15 | 1.31.15 | 1.31.15 |
| Collection Time | 1230 | 1400 | 1100 | 1025 | 0900 |

| | |
|-----------------------|---------------------------|
| Date | Monday, February 16, 2015 |
| Time | 1100 |
| Technician | NAG |
| Synthetic Water Batch | 2429 (Adjust to 20 ppt) |



Water Quality Data

Client: CB & I

Sample ID: BD Area

Test ID: 15021222-26

Synthetic Water

| | Batch | Batch | Batch |
|---|-------|-------|-------|
| Parameter | 2429 | 2430 | / |
| Dissolved Oxygen (mg/L O ₂) | 7.3 | 7.2 | / |
| pH (SU) | 8.2 | 8.3 | / |
| Salinity (ppt) | 20 | 20 | / |

Test Sediment Preparation

| Sample | Sieved Yes/No (due to indigenous organisms present) | Sieve Size | Analyst | Date | Time |
|-----------|---|------------|---------|---------|------|
| Reference | No | N/A | 662 | 2.16.15 | 1000 |
| BD-01 | | | | | |
| BD-05 | | | | | |
| BD-09 | | | | | |
| BD-10 | | | | | |



17170 PERKINS ROAD
BATON ROUGE, LA 70810
PHONE (225) 755-1000
FAX (225) 751-2010
www.c-ka.com

HOUSTON, TX
PHONE (281) 397-9016
FAX (281) 397-6637

LELAP Certification Number 02080

LAKE CHARLES, LA
PHONE (337) 625-6577
FAX (337) 625-6580

SHREVEPORT, LA
PHONE (318) 797-8636
FAX (318) 798-0478

March 24, 2015

CB&I
4171 Essen Lane
Baton Rouge, Louisiana 70809
Attn: Mr. Glen Landry

Ref: Whole Sediment Toxicity Results
CK Project No: 12064
Test ID No.: 15021214, 15021215 and 15021216

Dear Mr. Landry:

Enclosed please find the Toxicity Test Report containing results of a set of 10-day acute toxicity tests using *Mysidopsis bahia* and *Leptocheirus plumulosus* performed on the CB&I **SI Area** samples. If you have any questions concerning this toxicity testing report or if I can be of any further assistance to you, please call me at (225) 755-1011 x 1100.

Sincerely,
CK Associates

Monica S. Eues
Quality Assurance Manager

MSE/hbb

Enc.: Whole Sediment Toxicity Report

Issue Date: March 25, 2015

WHOLE SEDIMENT TOXICITY TEST REPORT

FOR

CB&I – PROJECT # 153673

SI AREA


TEST INITIATION DATE: FEBRUARY 13, 2015

TEST IDENTIFICATION NO.: 15021214, 15021215 and 15021216




17170 Perkins Road
Baton Rouge, Louisiana 70810
225-755-1000

The results of this analysis relate only to the referenced sample as it was submitted to CK Associates. Unless otherwise noted, all test results meet the requirements of TNI. This report shall not be reproduced in full or in part without the written consent of CK Associates.



Gus Zieske
Laboratory Director

3 25 15
Date



Monica S. Eues
Quality Assurance Manager

Date

SUMMARY AND CONCLUSIONS

Permittee: CB&I
 4171 Essen Lane
 Baton Rouge, Louisiana 70809

Laboratory: CK Associates
 17170 Perkins Road
 Baton Rouge, Louisiana 70810
 LELAP Certification #02080

Method(s): *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. Inland Testing Manual EPA-823-B-98-004 1998*

Test Sample: SI Area
 Test ID No.: 15021214, 15021215 and 15021216
 Concentration: Whole Sediment
 Overlying Water: Synthetic Laboratory Water
 Sample Dates: January 28 and 29, 2015
 Test Initiation Date: February 13, 2015
 Purpose: Benthic Toxicity

Test Acceptance Criteria

Performance criteria for *M. bahia* survival was met.

Performance criteria for *L. plumulosus* survival was met.

Test Results

| Sediment Identification | <i>Mysidopsis bahia</i> | | | <i>Leptocheirus plumulosus</i> | | |
|-------------------------|-------------------------|------|-----------------------------|--------------------------------|------|-----------------------------|
| | % Survival | NOEC | Toxicity Indicated (Yes/No) | % Survival | NOEC | Toxicity Indicated (Yes/No) |
| Laboratory Control | 96 | | | 99 | | |
| Reference Sediment | 94 | | | 98 | | |
| SI 01 | 98 | 100 | No | 97 | 100 | No |
| SI 09 | 100 | 100 | No | 100 | 100 | No |

Test Conclusions

The test samples did not indicate acute toxicity to either of the test species in the 10-day exposure.

INTRODUCTION

Samples of CB&I (SI) were collected on January 28 and 29, 2015 and were received by CK Associates on January 30, 2015. A *Mysidopsis bahia* 10-Day Acute Toxicity Test and a *Leptocheirus plumulosus* 10-Day Acute Toxicity Test were conducted as described below.

METHODS

The samples were tested in accordance with Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. Inland Testing Manual EPA-823-B-98-004 1998. All test samples were prepared and overlying water added one day prior to the introduction of the test species. This allowed suspended particles to settle and established equilibrium between sediment and overlying water. All test chambers were maintained with constant aeration.

| <u>Test Parameters</u> | <u><i>Mysidopsis bahia</i></u> | <u><i>Leptocheirus plumulosus</i></u> |
|-----------------------------|--------------------------------|---------------------------------------|
| Organism Source | CK Associates | Aquatic Biotechnologies, Inc. |
| Organism Age | 5 days | 3-5 mm |
| Test Chamber Material | Polypropylene | Glass |
| Test Chamber Volume (mL) | 250 | 1,000 |
| Test Sediment Volume (mL) | 50 | 175 |
| Overlying Water Volume (mL) | 150 | 725 |

The tests were initiated by randomly placing five test organisms into plastic soufflé cups. Two soufflé cups were randomly placed into each test chamber for a total of 10 organisms per test replicate (*M. bahia* test). Four soufflé cups were randomly placed into each test chamber for a total of 20 organisms per test replicate (*L. plumulosus* test).

Water quality measurements were performed on all test solutions prior to test initiation and daily thereafter, as indicated on the attached data sheets. Overlying water was renewed on the 3rd, 5th and 7th day of the 10-day exposure. The test was conducted at $25 \pm 2^\circ\text{C}$ under fluorescent lighting with a photoperiod of 16 hours light and 8 hours dark. All test vessels were aerated at an estimated rate of 50 to 140 cubic centimeters/minute.

The lethal NOEC (No Observed Effect Concentration) was determined for each sample. The NOEC represents the concentration at and below which the sample result is not statistically different from the reference sediment result. Percent survival of exposed test organisms was determined at test termination by enumeration of live organisms. Survival is defined as any body or appendage movement. Following termination, the data were analyzed using TOXCALC version 5.0.23j.

The reference toxicants, sodium dodecyl sulfate (*M. bahia*) and ammonia (*L. plumulosus*), were used to monitor the sensitivity of the test organisms and the precision of the testing procedure. Acute reference toxicant tests are performed at least monthly and the resulting LC₅₀ values are plotted to determine if the results are within prescribed limits.

RESULTS

Mysidopsis bahia

Average survival percentages after 10 days of exposure are tabulated below.

| Percent Effluent | Percent Survival |
|--------------------------|------------------|
| Laboratory Control | 96 |
| SI-BG Reference Sediment | 94 |
| SI-01 | 98 |
| SI-09 | 100 |

The laboratory control met performance criteria for survival and variability. Based on the statistical analysis (pages 5 through 6) the 10-day survival NOECs of the CB&I SI samples were 100%. Detailed data for the test, including survival and water quality, are presented on pages 11 through 15.

Leptocheirus plumulosus

Average survival percentages after 10 days of exposure are tabulated below.

| Percent Effluent | Percent Survival |
|--------------------------|------------------|
| Laboratory Control | 99 |
| SI-BG Reference Sediment | 98 |
| SI-01 | 97 |
| SI-09 | 100 |

The laboratory control met performance criteria for survival and variability. Based on the statistical analysis (pages 7 through 8) the 10-day survival NOECs of the CB&I SI samples were 100. Detailed data for the test, including survival and water quality, are presented on pages 16 through 20.

QUALITY CONTROL

The reference toxicant LC₅₀ results for both organisms were within the control limits established with the twenty most recent reference toxicant LC₅₀ results (pages 9 and 10).

Acute-10-Day Survival

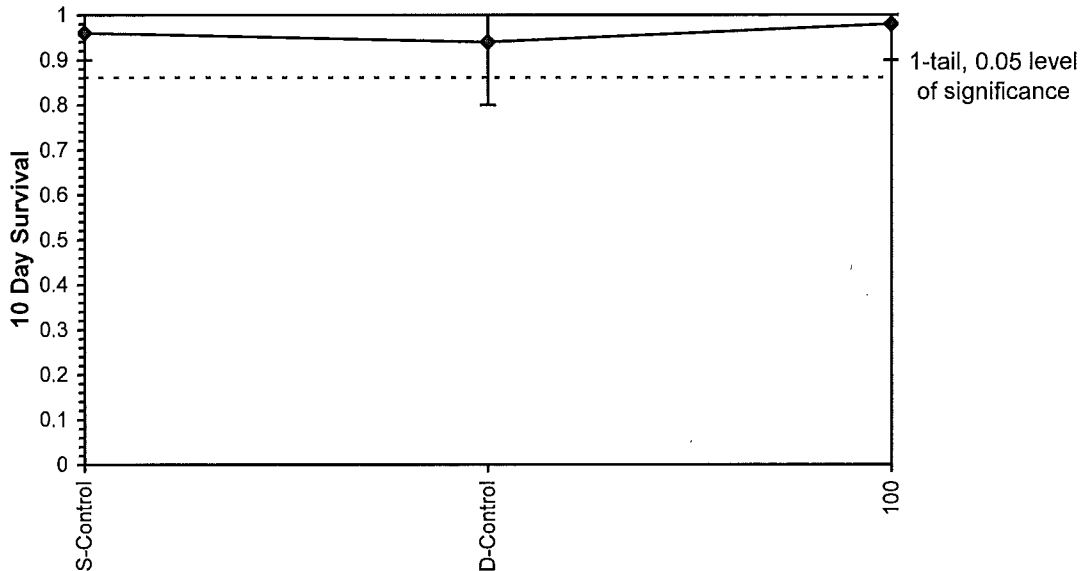
Start Date: 2/13/2015 Test ID: 15021214A Sample ID: CB&I
 End Date: 2/23/2015 Lab ID: 15021214 Sample Type: SI-01
 Sample Date: 1/28/2015 Protocol: ~~E133792-ASTM E 1367-92~~ Test Species: MY-Mysidopsis bahia
 Comments: [A] 823-B-98-004 MSF 3-24-15

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 0.90 | 0.90 | 1.00 | 1.00 |
| D-Control | 0.90 | 1.00 | 0.80 | 1.00 | 1.00 |
| 100 | 1.00 | 1.00 | 1.00 | 1.00 | 0.90 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | CV% | N | 1-Tailed | | |
|-----------|------|--------|-------------------------------|--------|--------|--------|-----|--------|----------|--------|--|
| | | | Mean | Min | Max | t-Stat | | | Critical | MSD | |
| S-Control | 0.96 | 1.0213 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | | | | |
| D-Control | 0.94 | 1.0000 | 1.3184 | 1.1071 | 1.4120 | 10 | 5 | * | | | |
| 100 | 0.98 | 1.0426 | 1.3794 | 1.2490 | 1.4120 | 5 | 5 | -0.876 | 1.860 | 0.1295 | |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.8291 | 0.781 | -1.1658 | 0.43544 | | |
| F-Test indicates equal variances ($p = 0.25$) | 3.56414 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.71$) | 0.38691 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.07651 | 0.0816 | 0.00929 | 0.01212 | 0.40675 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

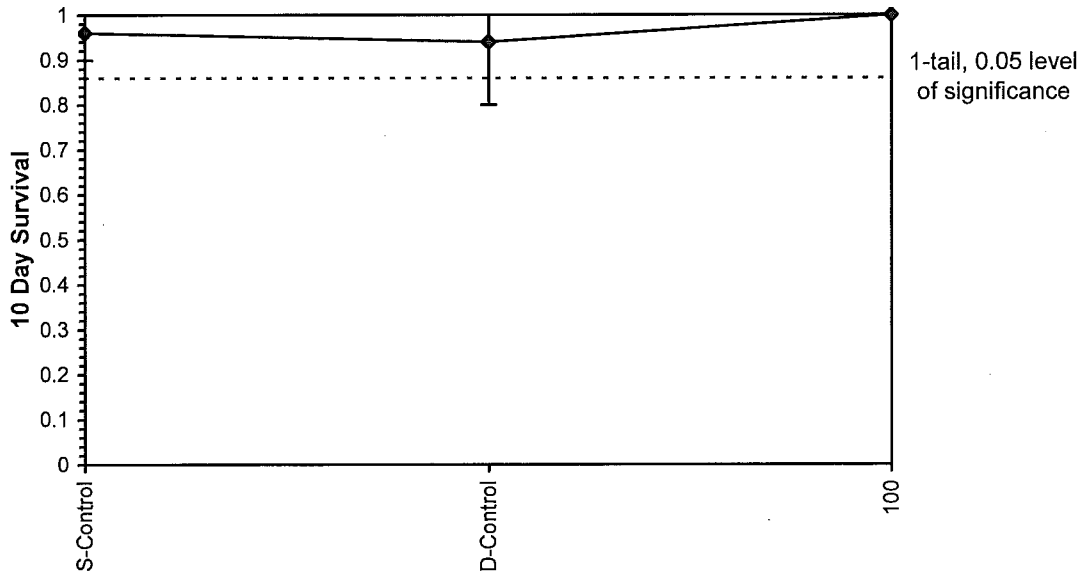
| | | |
|------------------------|----------------------------------|-----------------------------------|
| Start Date: 2/13/2015 | Test ID: 15021215A | Sample ID: CB&I |
| End Date: 2/23/2015 | Lab ID: 15021215 | Sample Type: SI-09 |
| Sample Date: 1/29/2015 | Protocol: E133792-ASTM E 1367-92 | Test Species: MY-Mysidopsis bahia |
| Comments: | [A] EPA-823-B-98-004 | |

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 0.90 | 0.90 | 1.00 | 1.00 |
| D-Control | 0.90 | 1.00 | 0.80 | 1.00 | 1.00 |
| 100 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|--------|----------|--------------|
| | | | Mean | Min | Max | CV% | | Critical | MSD |
| S-Control | 0.96 | 1.0213 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | | |
| D-Control | 0.94 | 1.0000 | 1.3184 | 1.1071 | 1.4120 | 10 | 5 | * | |
| 100 | 1.00 | 1.0638 | 1.4120 | 1.4120 | 1.4120 | 0 | 5 | -1.521 | 2.132 0.1312 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.81629 | 0.781 | -1.3155 | 2.58603 | | |
| Equality of variance cannot be confirmed | | | | | | |
| The control means are not significantly different ($p = 0.71$) | 0.38691 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Heteroscedastic t Test indicates no significant differences | 0.07768 | 0.08285 | 0.02189 | 0.00947 | 0.16686 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

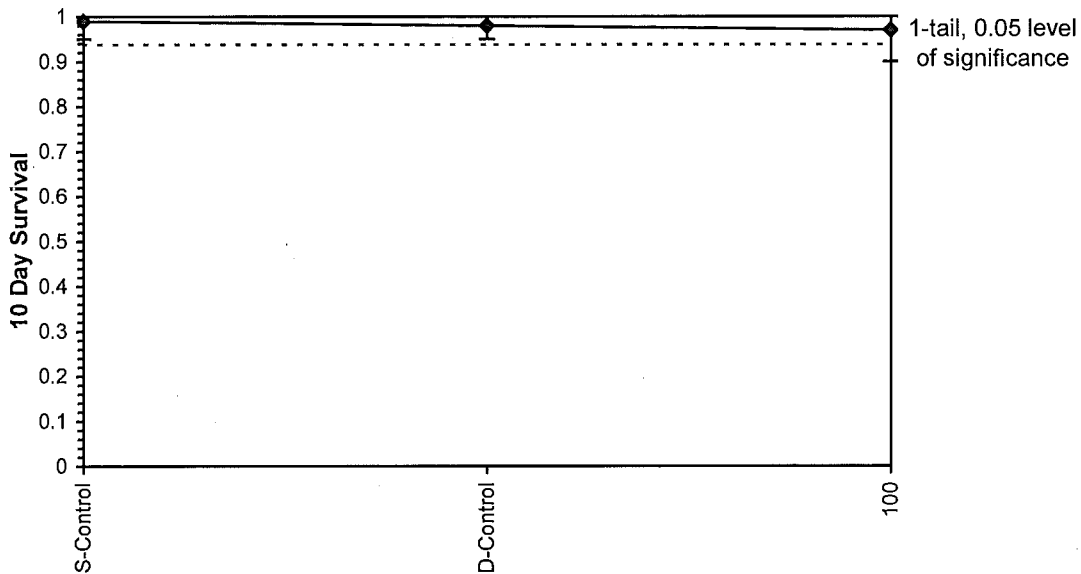
Start Date: 2/13/2015 Test ID: 15021214L Sample ID: CB&I
 End Date: 2/23/2015 Lab ID: 15021214 Sample Type: SI-01
 Sample Date: 1/28/2015 Protocol: ~~E133792-ASTM E 1367-92~~ Test Species: Leptocheirus plumulosus
 Comments: (A) EPA-823-B-98-004

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| D-Control | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| 100 | 0.90 | 0.95 | 1.00 | 1.00 | 1.00 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|----------|-------|--------|----------|--|
| | | | Mean | Min | Max | CV% | Critical | | | MSD | |
| S-Control | 0.99 | 1.0102 | 1.4361 | 1.3453 | 1.4588 | 4 | 5 | | | | |
| D-Control | 0.98 | 1.0000 | 1.4134 | 1.3453 | 1.4588 | 4 | 5 | * | | | |
| 100 | 0.97 | 0.9898 | 1.3941 | 1.2490 | 1.4588 | 7 | 5 | 0.380 | 1.860 | 0.0943 | |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.80923 | 0.781 | -0.8717 | -0.6165 | | |
| F-Test indicates equal variances ($p = 0.43$) | 2.32758 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.54$) | 0.63246 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.03745 | 0.0384 | 0.00093 | 0.00643 | 0.71412 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

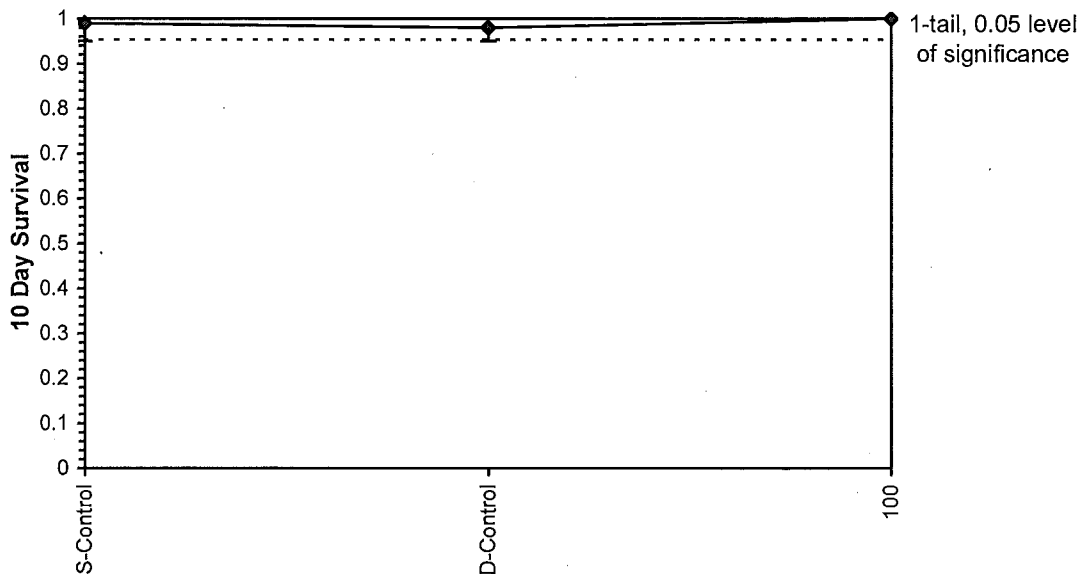
| | | |
|------------------------|----------------------------------|---------------------------------------|
| Start Date: 2/13/2015 | Test ID: 15021215L | Sample ID: CB&I |
| End Date: 2/23/2015 | Lab ID: 15021215 | Sample Type: SI-09 |
| Sample Date: 1/29/2015 | Protocol: E133792-ASTM E 1367-92 | Test Species: Leptocheirus plumulosus |
| Comments: | [A] EPA-823-B-98-004 | |

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| D-Control | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| 100 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

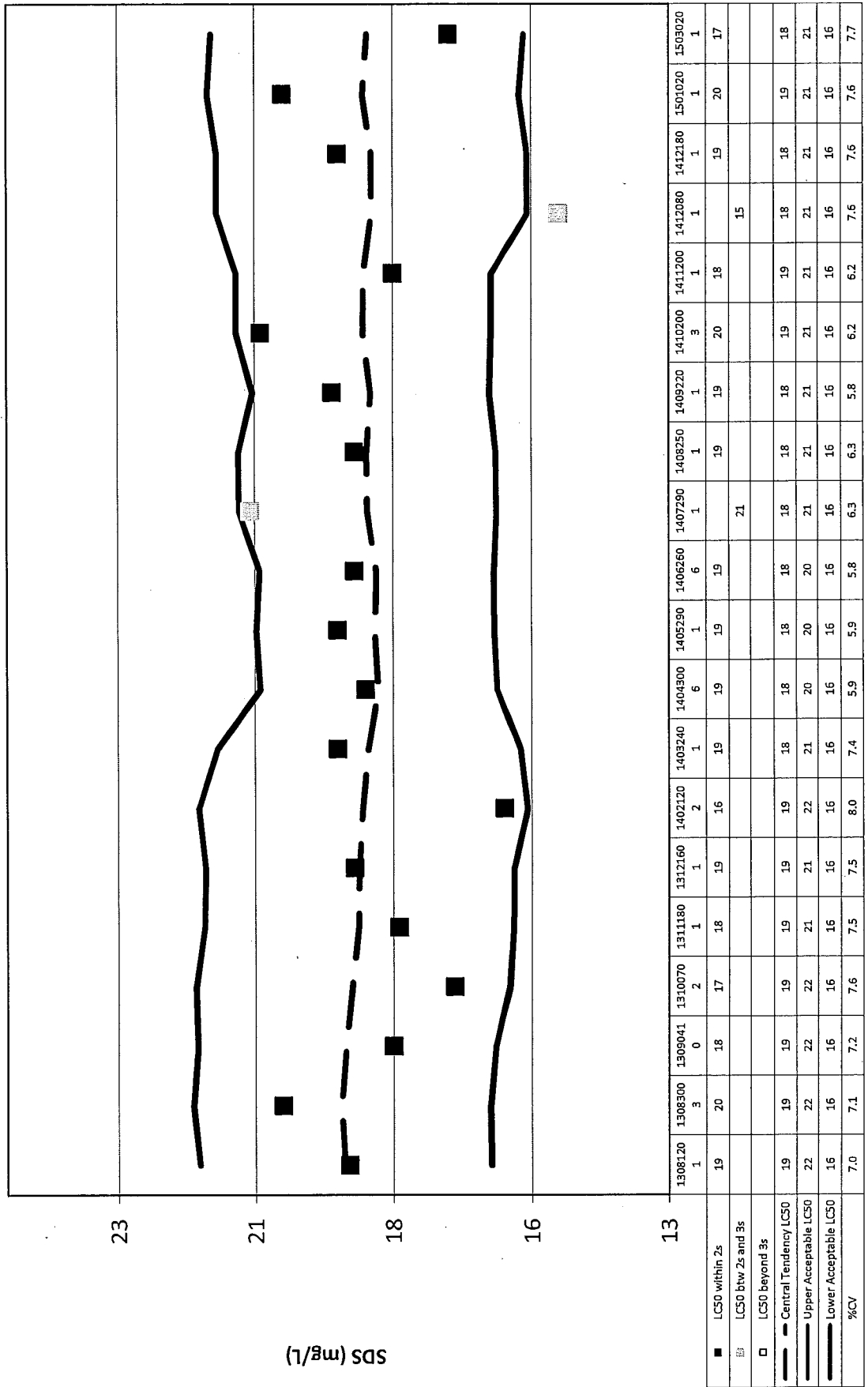
| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.99 | 1.0102 | 1.4361 | 1.3453 | 1.4588 | 4 | 5 | | | |
| D-Control | 0.98 | 1.0000 | 1.4134 | 1.3453 | 1.4588 | 4 | 5 | * | | |
| 100 | 1.00 | 1.0204 | 1.4588 | 1.4588 | 1.4588 | 0 | 5 | -1.633 | 2.132 | 0.0593 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution (p > 0.01) | 0.81451 | 0.781 | -0.6847 | -0.2143 | | |
| Equality of variance cannot be confirmed | | | | | | |
| The control means are not significantly different (p = 0.54) | 0.63246 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Heteroscedastic t Test indicates no significant differences | 0.02164 | 0.02219 | 0.00515 | 0.00193 | 0.14111 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



CK Associates
Sodium Dodecyl Sulfate Reference Toxicant Control Chart
96-Hour LC₅₀ for *Mysidopsis bahia*

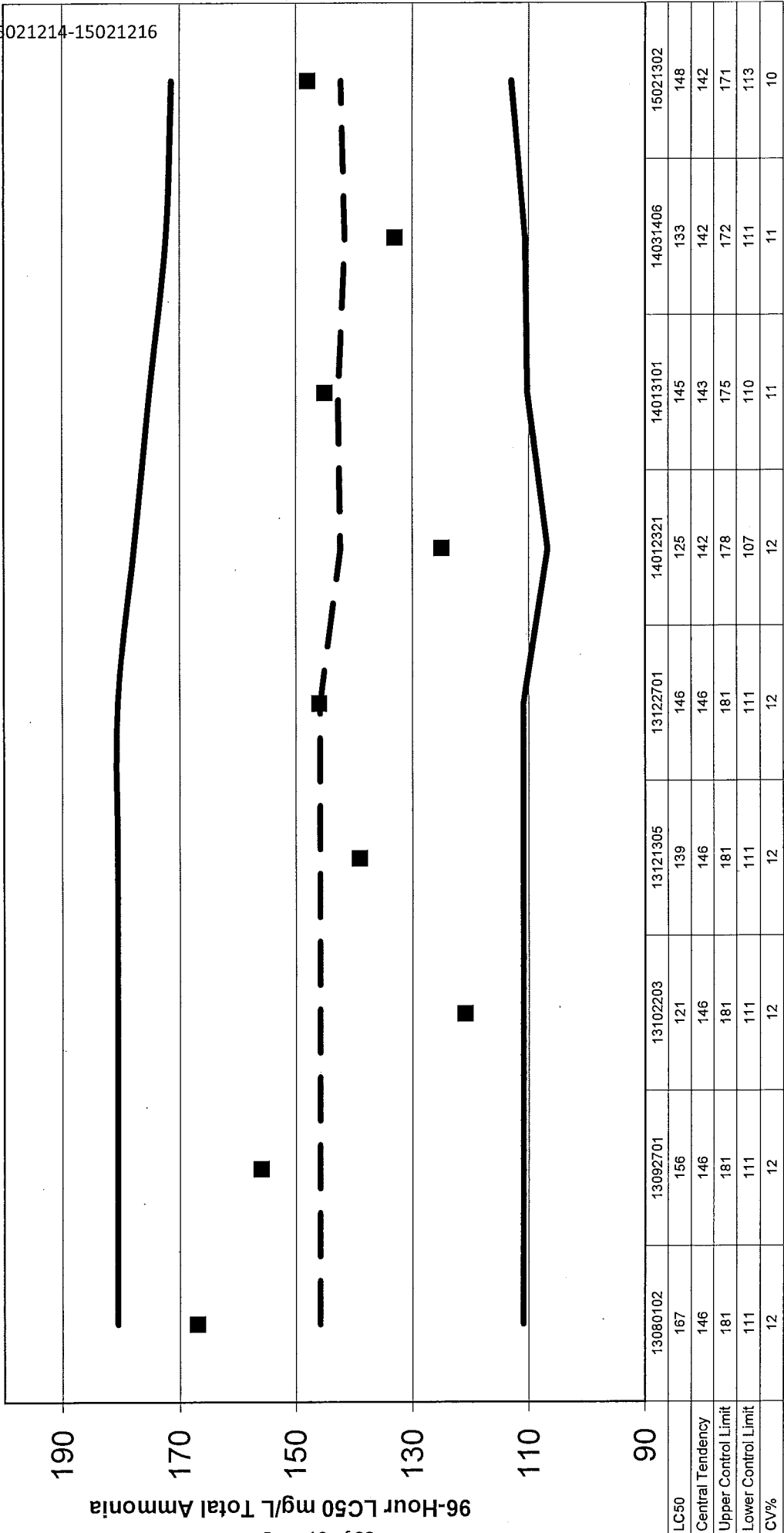


C-K Associates, LLC

Reference - Water Column 96-Hour Acute Control Chart

Leptocheirus plumulosus

Total Ammonia mg/L



LC50
 Central Tendency
 Upper Control Limit
 Lower Control Limit
 CV%



Survival Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Template: 1

Sample ID: SI Area

Organism Age: 5 day

QC Review: 662

Test ID: 15021214-16

Organism Batch: 9026

| |
|-----------------|
| Exposure Period |
| Day |
| Date |
| Time |
| Technician |

| |
|-----------------|
| Test Initiation |
| Fri |
| 2.13.15 |
| 1400 |
| 662 |

| |
|---|
| Observations Made at the End of 10-Day Exposure Period: |
| Fri |
| 2/23/15 |
| 1330 |
| 662 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| Lab Control | 1 |
| | 2 |
| (Culture Sediment) | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 9 |
| 9 |
| 10 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| SI-BG REF Sediment | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 9 |
| 10 |
| 8 |
| 10 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| SI-01 | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 9 |



Survival Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID: SI Area

Test ID: 15021214-16

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 10 | 10 |
| | 2 | 10 | 10 |
| SI-09 | 3 | 10 | 10 |
| | 4 | 10 | 10 |
| | 5 | 10 | 10 |

| Technician Observations | | | |
|-------------------------|------|----------|--------------|
| Date | Time | Initials | Observations |
| | | | |
| | | | |
| | | | |
| | | | |



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID SI Area

Lab ID: 15021214-16

DATA SHEET FOR 10-DAY
Mysidopsis bahia
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

Control - Culture Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.7 | 19 | 8.1 | 7.2 | 1.46 | 02/13/15 | 1330 | GGZ |
| 1 | | 24.5 | 20 | 8.2 | 7.1 | 2.82 | 02/14/15 | 1000 | ECH |
| 2 | | 25.9 | 20 | 8.3 | 7.0 | 2.30 | 02/15/15 | 0710 | ECH |
| 3 | Yes | 25.9 | 20 | 8.2 | 6.7 | 3.64 | 02/16/15 | 1400 | GGZ |
| 4 | | 24.6 | 22 | 8.0 | 7.1 | 1.62 | 02/17/15 | 1510 | NAG |
| 5 | yes | 24.9 | 23.21 | 8.0 | 6.9 | 2.70 | 02/18/15 | 1110 | NAG |
| 6 | | 25.2 | 20 | 8.0 | 6.8 | 1.78 | 02/19/15 | 1110 | NAG |
| 7 | yes | 24.9 | 21 | 7.7 | 6.5 | 0.34 | 02/20/15 | 1135 | NAG |
| 8 | | 26.4 | 21 | 7.9 | 6.4 | 0.32 | 02/21/15 | 1111 | KCS |
| 9 | | 25.1 | 21 | 8.0 | 6.2 | 0.47 | 02/22/15 | 1020 | KCS |
| 10 | Terminate | 25.9 | 21 | 7.8 | 6.2 | 0.56 | 02/23/15 | 1040 | NAG |

SI-BG Reference Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.7 | 19 | 8.1 | 7.2 | 0.20 | 02/13/15 | 1330 | GGZ |
| 1 | | 24.5 | 21 | 8.3 | 7.1 | 0.75 | 02/14/15 | 1000 | ECH |
| 2 | | 25.9 | 20 | 8.3 | 6.9 | 1.41 | 02/15/15 | 0710 | ECH |
| 3 | YES | 25.9 | 20 | 8.4 | 6.6 | 1.80 | 02/16/15 | 1400 | GGZ |
| 4 | | 24.6 | 21 | 8.2 | 7.1 | 1.38 | 02/17/15 | 1510 | NAG |
| 5 | yes | 24.9 | 21 | 7.7 | 6.7 | 2.16 | 02/18/15 | 1110 | NAG |
| 6 | | 25.2 | 20 | 8.0 | 6.7 | 1.92 | 02/19/15 | 1110 | NAG |
| 7 | yes | 24.9 | 21 | 8.1 | 6.2 | 1.26 | 02/20/15 | 1135 | NAG |
| 8 | | 25.1 | 22 | 8.1 | 6.3 | 1.83 | 02/21/15 | 1111 | KCS |
| 9 | | 25.1 | 21 | 8.1 | 6.4 | 1.45 | 02/22/15 | 1020 | KCS |
| 10 | Terminate | 25.9 | 21 | 8.0 | 6.5 | 0.59 | 02/23/15 | 1040 | NAG |

Renewal: Conducted every 48 hours AS noted MSE 3-24-15

Feeding: Organisms were fed daily



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID SI Area

Lab ID: 15021214-16

DATA SHEET FOR 10-DAY

Mysidopsis bahia

STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

SI-01

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.7 | 19 | 8.1 | 7.2 | 0.05 | 02/13/15 | 1330 | GGZ |
| 1 | | 24.5 | 21 | 8.2 | 7.0 | 0.23 | 02/14/15 | 1000 | ECH |
| 2 | | 25.9 | 22 | 8.3 | 6.8 | 0.09 | 02/15/15 | 0710 | ECH |
| 3 | YES | 25.9 | 20 | 8.2 | 6.6 | 0.34 | 02/16/15 | 1400 | GGZ |
| 4 | | 24.6 | 21 | 8.1 | 7.1 | 0.23 | 02/17/15 | 1510 | NAG |
| 5 | yes | 24.9 | 21 | 7.9 | 6.8 | 0.84 | 02/18/15 | 1110 | NAG |
| 6 | | 25.2 | 21 | 7.8 | 6.9 | 0.42 | 02/19/15 | 1110 | NAG |
| 7 | yes | 24.9 | 20 | 8.0 | 6.2 | 0.30 | 02/20/15 | 1135 | NAG |
| 8 | | 26.4 | 21 | 8.1 | 6.4 | 0.48 | 02/21/15 | 1111 | KCS |
| 9 | | 25.1 | 23.21 | 8.2 | 6.3 | 0.62 | 02/22/15 | 1020 | KCS |
| 10 | Terminate | 25.4 | 21 | 8.0 | 6.6 | 0.69 | 02/23/15 | 1040 | NAG |

KCS
2/22/15

SI-09

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.7 | 19 | 8.1 | 7.2 | 0.05 | 02/13/15 | 1330 | GGZ |
| 1 | | 24.5 | 21 | 8.2 | 7.1 | 0.43 | 02/14/15 | 1000 | ECH |
| 2 | | 25.9 | 20 | 8.3 | 6.8 | 0.26 | 02/15/15 | 0710 | ECH |
| 3 | YES | 25.9 | 21 | 8.2 | 6.6 | 0.74 | 02/16/15 | 1400 | GGZ |
| 4 | | 24.6 | 20 | 8.2 | 7.1 | 0.50 | 02/17/15 | 1510 | NAG |
| 5 | yes | 24.9 | 20 | 8.1 | 6.8 | 0.79 | 02/18/15 | 1110 | NAG |
| 6 | | 25.2 | 21 | 8.0 | 6.7 | 0.67 | 02/19/15 | 1110 | NAG |
| 7 | yes | 24.9 | 20 | 8.1 | 6.3 | 0.75 | 02/20/15 | 1135 | NAG |
| 8 | | 26.1 | 21 | 8.0 | 6.4 | 0.62 | 02/21/15 | 1111 | KCS |
| 9 | | 25.1 | 21 | 8.3 | 6.4 | 0.94 | 02/22/15 | 1020 | KCS |
| 10 | Terminate | 25.4 | 21 | 8.1 | 6.5 | 0.57 | 02/23/15 | 1040 | NAG |

Renewal: Conducted every 48 hours ^{As noted} MSE 3-24-15

Feeding: Organisms were fed daily



Daily Instrument Usage Log
Mysidopsis bahia

Client: CB & I

Sample ID SI Area

Lab ID: 15021214-16

Meter Identification:

| Day | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|------------|-------------------|------------|----------------|-------------------|----------|------|---------|
| 0 | T-14.2 | M-001 | | | DR-890 | 02/13/15 | 1330 | GG2 |
| 1 | T-14.2 | M-003 | | | DR-890 | 02/14/15 | 1000 | EZH |
| 2 | T-14.2 | M-003 | | | DR-890 | 02/15/15 | 0710 | EZH |
| 3 | T-14.2 | M-003 | | | DR-890 | 02/16/15 | 1400 | GG2 |
| 4 | T-14.2 | M-003 | | | DR-890 | 02/17/15 | 1510 | NAG |
| 5 | T-14.2 | M-003 | | | DR-890 | 02/18/15 | 1110 | NAG |
| 6 | T-14.2 | M-003 | | | DR-890 | 02/19/15 | 1110 | NAG |
| 7 | T-14.2 | M-003 | | | DR-890 | 02/20/15 | 1135 | NAG |
| 8 | T-14.2 | M-003 | | | DR-890 | 02/21/15 | 1111 | KCS |
| 9 | T-14.2 | M-003 | | | DR-890 | 02/22/15 | 1020 | KCS |
| 10 | T-14.2 | M-003 | | | DR-890 | 02/23/15 | 1040 | NAG |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Template: 2

Sample ID: SI Area

Organism Age: 3-5mm

QC Review: 662

Test ID: 15021214-16

Organism Batch: 05476

| |
|-----------------|
| Exposure Period |
| Day |
| Date |
| Time |
| Technician |

| |
|-----------------|
| Test Initiation |
| Fri |
| 2.13.15 |
| 1420 |
| 662 |

| |
|---|
| Observations Made at the End of 10-Day Exposure Period: |
| Fri |
| 2.23.15 |
| 1345 |
| 662 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| Lab Control | 1 |
| | 2 |
| (Culture Sediment) | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 19 |
| 20 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| SI-BG REF Sediment | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 19 |
| 20 |
| 20 |
| 19 |
| 20 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| SI-01 | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 18 |
| 19 |
| 20 |
| 20 |
| 20 |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID: SI Area

Test ID: 15021214-16

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 20 | 20 |
| | 2 | 20 | 20 |
| SI-09 | 3 | 20 | 20 |
| | 4 | 20 | 20 |
| | 5 | 20 | 20 |

| Technician Observations | | | |
|-------------------------|------|----------|--------------|
| Date | Time | Initials | Observations |
| | | | |
| | | | |
| | | | |
| | | | |



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID SI Area

Lab ID: 15021214-16

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

Control - Culture Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------------|----------|------|---------|
| 0 | Initiate | 24.7 | 19 | 8.1 | 7.2 | 1.46 | 02/13/15 | 1330 | GCZ |
| 1 | | 24.5 | 19 | 8.0 | 7.0 | 3.40 | 02/14/15 | 1000 | EZH |
| 2 | | 25.9 | 18 | 8.1 | 6.7 | 4.97 | 02/15/15 | 0710 | EZH |
| 3 | yes | 25.9 | 18 | 8.2 | 6.6 | 5.20 | 02/16/15 | 1400 | GCZ |
| 4 | | 24.6 | 20 | 8.0 | 6.9 | 3.72 | 02/17/15 | 1520 | NAG |
| 5 | yes | 24.9 | 20 | 7.9 | 6.5 | 1.80 | 02/18/15 | 1120 | NAG |
| 6 | y | 25.2 | 21 | 7.8 | 6.4 | 0.39 ^{2.31} | 02/19/15 | 1115 | NAG |
| 7 | yes | 24.9 | 21 | 7.7 | 6.3 | 1.32 | 02/20/15 | 1130 | NAG |
| 8 | y | 26.4 | 21 | 7.9 | 6.2 | 0.64 | 02/21/15 | 1111 | KCS |
| 9 | | 25.1 | 21 | 8.0 | 6.3 | 0.39 | 02/22/15 | 1020 | KCS |
| 10 | Terminate | 25.9 | 21 | 7.9 | 6.3 | 0.23 | 02/23/15 | 1040 | NAG |

NAG
2.19.15

SI-BG Reference Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.7 | 19 | 8.1 | 7.2 | 0.20 | 02/13/15 | 1330 | GCZ |
| 1 | | 24.5 | 19 | 8.1 | 7.0 | 1.10 | 02/14/15 | 1000 | EZH |
| 2 | | 25.9 | 20 | 8.2 | 6.7 | 1.65 | 02/15/15 | 0710 | EZH |
| 3 | Yes | 25.9 | 20 | 8.3 | 6.7 | 3.42 | 02/16/15 | 1400 | GCZ |
| 4 | | 24.6 | 21 | 8.0 | 6.6 | 1.92 | 02/17/15 | 1520 | NAG |
| 5 | yes | 24.9 | 21 | 8.1 | 6.2 | 1.74 | 02/18/15 | 1120 | NAG |
| 6 | | 25.2 | 21 | 8.0 | 6.5 | 2.13 | 02/19/15 | 1115 | NAG |
| 7 | yes | 24.9 | 22 | 8.0 | 6.3 | 1.89 | 02/20/15 | 1130 | NAG |
| 8 | | 26.4 | 21 | 8.1 | 6.3 | 1.89 | 02/21/15 | 1111 | KCS |
| 9 | | 25.1 | 21 | 8.2 | 6.1 | 1.86 | 02/22/15 | 1020 | KCS |
| 10 | Terminate | 25.9 | 21 | 8.0 | 6.2 | 1.78 | 02/23/15 | 1040 | NAG |

Renewal: Conducted every 48 hours AS noted MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID SI Area

Lab ID: 15021214-16

DATA SHEET FOR 10-DAY

Leptocheirus plumulosus

STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

SI-01

KCS 2/21/15

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.7 | 19 | 8.1 | 7.2 | 0.05 | 02/13/15 | 1330 | GGZ |
| 1 | | 24.5 | 19 | 8.1 | 7.3 | 0.23 | 02/14/15 | 1000 | EZH |
| 2 | | 25.9 | 20 | 8.1 | 6.8 | 1.05 | 02/15/15 | 0710 | EZH |
| 3 | Yes | 25.9 | 21 | 8.2 | 6.7 | 1.30 | 02/16/15 | 1400 | GGZ |
| 4 | | 24.6 | 21 | 8.1 | 6.7 | 0.78 | 02/17/15 | 1520 | NAG |
| 5 | yes | 24.9 | 21 | 8.0 | 6.7 | 0.21 | 02/18/15 | 1120 | NAG |
| 6 | | 25.2 | 21 | 8.0 | 6.9 | 1.02 | 02/19/15 | 1115 | NAG |
| 7 | yes | 24.9 | 22 | 7.9 | 6.7 | 0.72 | 02/20/15 | 1130 | NAG |
| 8 | | 26.4 | 21 | 8.1 | 6.4 | 0.64 | 02/21/15 | 1111 | KCS |
| 9 | | 25.1 | 21 | 8.2 | 6.2 | 0.46 | 02/22/15 | 1020 | KCS |
| 10 | Terminate | 25.9 | 21 | 8.1 | 6.5 | 0.26 | 02/23/15 | 1040 | NAG |

SI-09

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.7 | 19 | 8.1 | 7.2 | 0.05 | 02/13/15 | 1330 | GGZ |
| 1 | | 24.5 | 20 | 8.1 | 7.1 | 0.34 | 02/14/15 | 1000 | EZH |
| 2 | | 25.9 | 20 | 8.2 | 6.8 | 0.78 | 02/15/15 | 0710 | EZH |
| 3 | Yes | 25.9 | 20 | 8.2 | 6.7 | 1.102 | 02/16/15 | 1400 | GGZ |
| 4 | | 24.6 | 21 | 8.1 | 7.0 | 0.81 | 02/17/15 | 1520 | NAG |
| 5 | yes | 24.9 | 21 | 8.1 | 6.8 | 0.60 | 02/18/15 | 1120 | NAG |
| 6 | | 25.2 | 21 | 8.1 | 6.8 | 0.84 | 02/19/15 | 1115 | NAG |
| 7 | yes | 24.9 | 22 | 8.0 | 6.5 | 1.02 | 02/20/15 | 1130 | NAG |
| 8 | | 26.4 | 21 | 8.2 | 6.5 | 1.89 | 02/21/15 | 1111 | KCS |
| 9 | | 25.1 | 21 | 8.2 | 6.4 | 0.80 | 02/22/15 | 1020 | KCS |
| 10 | Terminate | 25.9 | 22 | 8.1 | 6.5 | 0.72 | 02/23/15 | 1040 | NAG |

KCS 2/21/15

Renewal: Conducted every 48 hours as noted NSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Daily Instrument Usage Log
Leptocheirus plumulosus

Client: CB & I

Sample ID SI Area

Lab ID: 15021214-16

Meter Identification:

| Day | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|------------|-------------------|------------|----------------|-------------------|----------|-------------------------|---------|
| 0 | 7.14.2 | M-001 | | | DR-890 | 02/13/15 | 1330 | GGZ |
| 1 | T-14.2 | M-003 | | | DR-890 | 02/14/15 | 1400 | EZH |
| 2 | T-14.2 | M-003 | | | DR-890 | 02/15/15 | 0710 | EZH |
| 3 | T-14.2 | M-003 | | | DR-890 | 02/16/15 | 1400 | GGZ |
| 4 | T-14.2 | M-003 | | | DR-890 | 02/17/15 | 1520 | NAG |
| 5 | T-14.2 | M-003 | | | DR-890 | 02/18/15 | 1120 | NAG |
| 6 | T-14.2 | M-003 | | | DR-890 | 02/19/15 | 1115 | NAG |
| 7 | T-14.2 | M-003 | | | DR-890 | 02/20/15 | 1130 | NAG |
| 8 | T-14.2 | M-003 | | | DR-890 | 02/21/15 | 1111 | KCS |
| 9 | T-14.2 | M-003 | | | DR-890 | 02/22/15 | 1020 1000 | KCS |
| 10 | T-14.2 | M-003 | | | DR-890 | 02/23/15 | 1040 | NAG |

KCS
2/22/15

Client: CB & I

Sample ID: SI Area

Test ID: 15021214-16

Site-spec.

Instruct.: Control sediment is lepto culture sediment. Overlying water is 20 ppt ASSW.

Note: All volumes are expressed in milliliters (mL)

Leptocheirus plumulosus

| Sediment Vol/Rep (mL) | Reps/Trt | Org/Rep | ASSW Vol/Rep (mL) |
|-----------------------|----------|---------|-------------------|
| 175 | 5 | 20 | 725 |

Mysidopsis bahia

| Sediment Vol/Rep (mL) | Reps/Trt | Org/Rep | ASSW Vol/Rep (mL) |
|-----------------------|----------|---------|-------------------|
| 50 | 5 | 10 | 150 |

| Conc. | Sediment (mL) | ASSW (mL) |
|-----------------------------|---------------|-----------|
| Lab control | 975 | 3625 |
| SI-BG Ref | 975 | 3625 |
| SI-01 | 975 | 3625 |
| SI-09 | 975 | 3625 |
| Total ASSW for Test Renewal | | 14500 |

| Conc. | Sediment (mL) | ASSW (mL) |
|-----------------------------|---------------|-----------|
| Lab control | 250 | 750 |
| SI-BG Ref | 250 | 750 |
| SI-01 | 250 | 750 |
| SI-09 | 250 | 750 |
| Total ASSW for Test Renewal | | 3000 |

| | |
|-------------------|------------------------|
| Initiation Date: | Fri, February 13, 2015 |
| WQ Parameter Vol: | 100 mL |

Note: Initiation Date = Organism Loading (ASSW, test sample and control sediment are placed in the test chambers the day prior to organism loading.)

**Test Preparation Documentation for the Beginning of 10-Day Exposure Period
(ASSW + Sediment)**

| | |
|-------------------|------------|
| Control Sediment | |
| Sediment Batch ID | 150212-COL |

| Field Sediments | SI-BG Ref | SI-01 | SI-09 |
|-----------------|-----------|----------|----------|
| Sample ID | 15021216 | 15021214 | 15021215 |
| Collection Date | 1.29.15 | 1.28.15 | 1.29.15 |
| Collection Time | 1225 | 0940 | 1200 |

| | |
|-----------------------|-----------------------------|
| Date | Thursday, February 12, 2015 |
| Time | 1300 |
| Technician | 662 |
| Synthetic Water Batch | 2428 (Adjust to 20ppt) |



Water Quality Data

Client: CB & I
 Sample ID: SI Area
 Test ID: 15021214-16

Synthetic Water

| | Batch | Batch | Batch |
|---|-------|-------|-------|
| Parameter | 2428 | 2429 | / |
| Dissolved Oxygen (mg/L O ₂) | 7.3 | 7.3 | / |
| pH (SU) | 8.3 | 8.2 | / |
| Salinity (ppt) | 2.0 | 2.0 | / |

Test Sediment Preparation

| Sample | Sieved Yes/No (due to indigenous organisms present) | Sieve Size | Analyst | Date | Time |
|-----------|---|------------|---------|---------|------|
| Reference | No | N/A | GGZ | 2.12.15 | 1300 |
| SI-01 | No | ↓ | ↓ | ↓ | ↓ |
| SI-09 | No | ↓ | ↓ | ↓ | ↓ |

**CHAIN OF CUSTODY
AND
ANALYTICAL REQUEST RECORD**

Test ID No : 15021214-15021216

CLIENT: CPRA/CB+I **P.O. NUMBER:** _____ **SAMPLED BY:** K. Simonneau
PROJECT NO.: 153673 **LABORATORY*:** _____ **DATE:** _____
C. Paul

| SAMPLE IDENTIFICATION | DATE | TIME | MATRIX | NO. OF CONTAINERS | PRESERVATIVE | ANALYSES AND INSTRUCTIONS |
|-----------------------|---------|------|--------|-------------------|--------------|--|
| LH-17(0-6) | 1/26/15 | 1120 | Soil | 1 | --- | Benthic Toxicity 15021217 |
| LH-16(0-6) | 1/26/15 | 1240 | Soil | 1 | --- | 15021218 |
| LH-04(0-6) | 1/27/15 | 0830 | Soil | 1 | --- | 15021219 |
| LH-08(0-6) | 1/27/15 | 1315 | Soil | 1 | --- | 15021220 |
| LH-BG(0-6) | 1/28/15 | 1410 | Soil | 1 | --- | Reference sediment 15021221 |
| SI-01(0-6) | 1/28/15 | 0940 | Soil | 1 | --- | 15021214 |
| SI-29(0-6) | 1/29/15 | 1200 | Soil | 1 | --- | Benthic 15021215 |
| SI-BG(0-6) | 1/29/15 | 1225 | Soil | 1 | --- | Reference sediment Benthic Toxicity 15021216 |
| | | | | | | |
| | | | | | | |

| | | | | | |
|--|---------|-------|-------------------------|---------|------|
| Relinquished by: <u>Kevin Simonneau</u> (Signature) | Date | Time | Received by: (Name) | Date | Time |
| | 1/30/15 | 12:45 | (Signature) | | |
| Relinquished by: _____ (Signature) | Date | Time | Received by Laboratory: | Date | Time |
| | | | (Name) <u>Gus Zeske</u> | 1.30.15 | 1245 |
| Relinquished by: _____ (Signature) | Date | Time | (Signature) | Date | Time |
| | | | <u>[Signature]</u> | | |

Method of Shipment: _____ **Condition of Samples upon receipt at laboratory:** _____ **Temperature upon receipt:** _____



17170 PERKINS ROAD
BATON ROUGE, LA 70810
PHONE (225) 755-1000
FAX (225) 751-2010
www.c-ka.com

HOUSTON, TX
PHONE (281) 397-9016
FAX (281) 397-6637

LELAP Certification Number 02080

LAKE CHARLES, LA
PHONE (337) 625-6577
FAX (337) 625-6580

SHREVEPORT, LA
PHONE (318) 797-8636
FAX (318) 798-0478

March 24, 2015

CB&I
4171 Essen Lane
Baton Rouge, Louisiana 70809
Attn: Mr. Glen Landry

Ref: Whole Sediment Toxicity Results
CK Project No: 12064
Test ID No.: 15021217, 15021218, 15021219, 15021220 and 15021221

Dear Mr. Landry:

Enclosed please find the Toxicity Test Report containing results of a set of 10-day acute toxicity tests using *Mysidopsis bahia* and *Leptocheirus plumulosus* performed on the CB&I LH Area samples. If you have any questions concerning this toxicity testing report or if I can be of any further assistance to you, please call me at (225) 755-1011 x 1100.

Sincerely,
CK Associates

Monica S. Eues
Quality Assurance Manager

MSE/hbb

Enc.: Whole Sediment Toxicity Report

Issue Date: March 25, 2015

WHOLE SEDIMENT TOXICITY TEST REPORT

FOR

CB&I – PROJECT # 153673

LH AREA

TEST INITIATION DATE: FEBRUARY 17, 2015

**TEST IDENTIFICATION NO.: 15021217, 15021218, 15021219, 15021220 and
15021221**




17170 Perkins Road
Baton Rouge, Louisiana 70810
225-755-1000

The results of this analysis relate only to the referenced sample as it was submitted to CK Associates. Unless otherwise noted, all test results meet the requirements of TNI. This report shall not be reproduced in full or in part without the written consent of CK Associates.



Gus Zieske
Laboratory Director

3 25 15
Date



Monica S. Eues
Quality Assurance Manager

3 24 15
Date

SUMMARY AND CONCLUSIONS

Permittee: CB&I
 4171 Essen Lane
 Baton Rouge, Louisiana 70809

Laboratory: CK Associates
 17170 Perkins Road
 Baton Rouge, Louisiana 70810
 LELAP Certification #02080

Method(s): *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. Inland Testing Manual EPA-823-B-98-004 1998*

Test Sample: LH Area
 Test ID No.: 15021217, 15021218, 15021219, 15021220 and 15021221
 Concentration: Whole Sediment
 Overlying Water: Synthetic Laboratory Water
 Sample Dates: January 26, 27 and 28, 2015
 Test Initiation Date: February 17, 2015
 Purpose: Benthic Toxicity

Test Acceptance Criteria

Performance criteria for *M. bahia* survival was met.

Performance criteria for *L. plumulosus* survival was met.

Test Results

| Sediment Identification | <i>Mysidopsis bahia</i> | | | <i>Leptocheirus plumulosus</i> | | |
|-------------------------|-------------------------|------|-----------------------------|--------------------------------|------|-----------------------------|
| | % Survival | NOEC | Toxicity Indicated (Yes/No) | % Survival | NOEC | Toxicity Indicated (Yes/No) |
| Laboratory Control | 96 | | | 96 | | |
| Reference Sediment | 94 | | | 96 | | |
| LH 04 | 98 | 100 | No | 98 | 100 | No |
| LH 08 | 100 | 100 | No | 94 | 100 | No |
| LH 16 | 96 | 100 | No | 97 | 100 | No |
| LH 17 | 94 | 100 | No | 99 | 100 | No |

Test Conclusions

The test samples did not indicate acute toxicity to either of the test species in the 10-day exposure.

INTRODUCTION

Samples of CB&I (LH Area) were collected on January 26, 27 and 28, 2015 and were received by CK Associates on January 30, 2015. A *Mysidopsis bahia* 10-Day Acute Toxicity Test and a *Leptocheirus plumulosus* 10-Day Acute Toxicity Test were conducted as described below.

METHODS

The samples were tested in accordance with Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. Inland Testing Manual EPA-823-B-98-004 1998. All test samples were prepared and overlying water added one day prior to the introduction of the test species. This allowed suspended particles to settle and established equilibrium between sediment and overlying water. All test chambers were maintained with constant aeration.

| <u>Test Parameters</u> | <u><i>Mysidopsis bahia</i></u> | <u><i>Leptocheirus plumulosus</i></u> |
|-----------------------------|--------------------------------|---------------------------------------|
| Organism Source | CK Associates | Aquatic Biotechnologies, Inc. |
| Organism Age | 5 days | 3-5 mm |
| Test Chamber Material | Polypropylene | Glass |
| Test Chamber Volume (mL) | 250 | 1,000 |
| Test Sediment Volume (mL) | 50 | 175 |
| Overlying Water Volume (mL) | 150 | 725 |

The tests were initiated by randomly placing five test organisms into plastic soufflé cups. Two soufflé cups were randomly placed into each test chamber for a total of 10 organisms per test replicate (*M. bahia* test). Four soufflé cups were randomly placed into each test chamber for a total of 20 organisms per test replicate (*L. plumulosus* test).

Water quality measurements were performed on all test solutions prior to test initiation and daily thereafter, as indicated on the attached data sheets. Overlying water was renewed on the 3rd, 5th and 7th day of the 10-day exposure. The test was conducted at $25 \pm 2^\circ\text{C}$ under fluorescent lighting with a photoperiod of 16 hours light and 8 hours dark. All test vessels were aerated at an estimated rate of 50 to 140 cubic centimeters/minute.

The lethal NOEC (No Observed Effect Concentration) was determined for each sample. The NOEC represents the concentration at and below which the sample result is not statistically different from the reference sediment result. Percent survival of exposed test organisms was determined at test termination by enumeration of live organisms. Survival is defined as any body or appendage movement. Following termination, the data were analyzed using TOXCALC version 5.0.23j.

The reference toxicants, sodium dodecyl sulfate (*M. bahia*) and ammonia (*L. plumulosus*), were used to monitor the sensitivity of the test organisms and the precision of the testing procedure. Acute reference toxicant tests are performed at least monthly and the resulting LC₅₀ values are plotted to determine if the results are within prescribed limits.

RESULTS

Mysidopsis bahia

Average survival percentages after 10 days of exposure are tabulated below.

| Percent Effluent | Percent Survival |
|--------------------------|------------------|
| Laboratory Control | 96 |
| LH-BG Reference Sediment | 94 |
| LH 04 | 98 |
| LH 08 | 100 |
| LH 16 | 96 |
| LH 17 | 94 |

The laboratory control met performance criteria for survival and variability. Based on the statistical analysis (pages 5 through 8) the 10-day survival NOECs of the CB&I LH samples were 100%. Detailed data for the test, including survival and water quality, are presented on pages 15 through 20.

Leptocheirus plumulosus

Average survival percentages after 10 days of exposure are tabulated below.

| Percent Effluent | Percent Survival |
|--------------------------|------------------|
| Laboratory Control | 96 |
| LH-BG Reference Sediment | 96 |
| LH 04 | 98 |
| LH 08 | 94 |
| LH 16 | 97 |
| LH 17 | 99 |

The laboratory control met performance criteria for survival and variability. Based on the statistical analysis (pages 9 through 12) the 10-day survival NOECs of the CB&I LH samples were 100. Detailed data for the test, including survival and water quality, are presented on pages 21 through 26.

QUALITY CONTROL

The reference toxicant LC₅₀ results for both organisms were within the control limits established with the twenty most recent reference toxicant LC₅₀ results (pages 13 and 14).

Acute-10-Day Survival

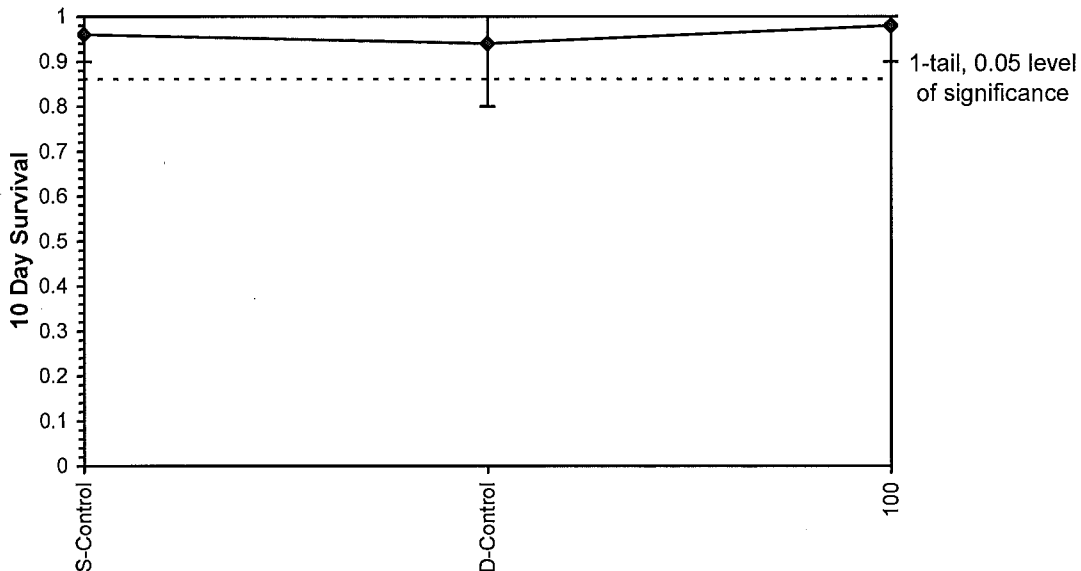
Start Date: 2/17/2015 Test ID: 15021219A Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021219 Sample Type: LH-04
 Sample Date: 1/27/2015 Protocol: ~~E1337-92-ASTM E 1367-92~~ Test Species: MY-Mysidopsis bahia
 Comments: [A] EPA-823-B-98-004 MSE 3-23-15

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.90 | 1.00 | 1.00 | 0.90 | 1.00 |
| D-Control | 1.00 | 1.00 | 0.90 | 0.80 | 1.00 |
| 100 | 1.00 | 0.90 | 1.00 | 1.00 | 1.00 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.96 | 1.0213 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | | | |
| D-Control | 0.94 | 1.0000 | 1.3184 | 1.1071 | 1.4120 | 10 | 5 | * | | |
| 100 | 0.98 | 1.0426 | 1.3794 | 1.2490 | 1.4120 | 5 | 5 | -0.876 | 1.860 | 0.1295 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.8291 | 0.781 | -1.1658 | 0.43544 | | |
| F-Test indicates equal variances ($p = 0.25$) | 3.56414 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.71$) | 0.38691 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.07651 | 0.0816 | 0.00929 | 0.01212 | 0.40675 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

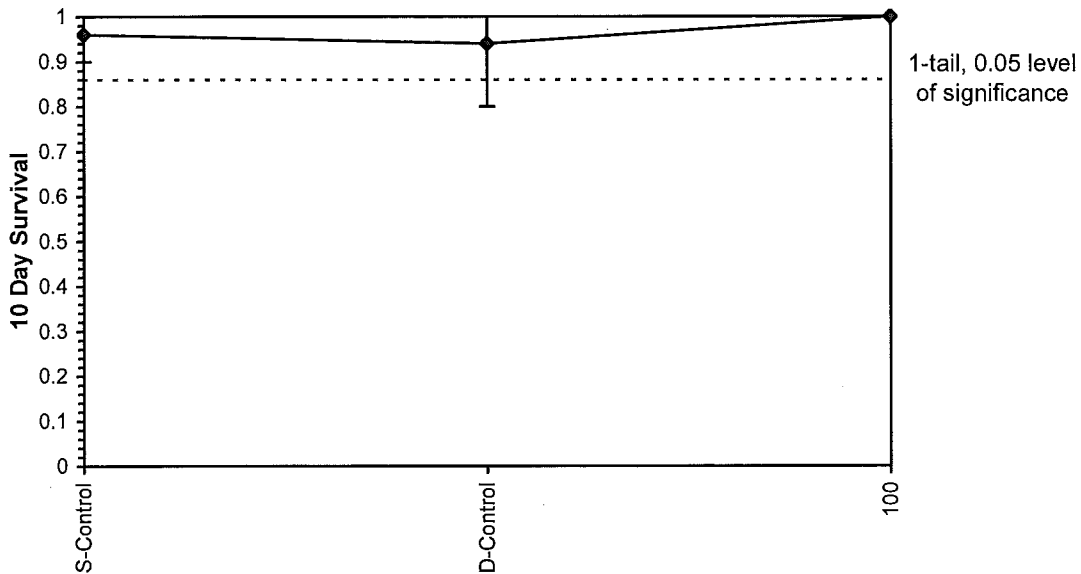
Start Date: 2/17/2015 Test ID: 15021220A Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021220 Sample Type: LH-08
 Sample Date: 1/27/2015 Protocol: E-133792-ASTM E-1367-92 Test Species: MY-Mysidopsis bahia
 Comments: (A)

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.90 | 1.00 | 1.00 | 0.90 | 1.00 |
| D-Control | 1.00 | 1.00 | 0.90 | 0.80 | 1.00 |
| 100 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | CV% | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|----------|-----|--------|--------|----------|--|
| | | | Mean | Min | Max | Critical | | | | MSD | |
| S-Control | 0.96 | 1.0213 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | | | | |
| D-Control | 0.94 | 1.0000 | 1.3184 | 1.1071 | 1.4120 | 10 | 5 | * | | | |
| 100 | 1.00 | 1.0638 | 1.4120 | 1.4120 | 1.4120 | 0 | 5 | -1.521 | 2.132 | 0.1312 | |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.81629 | 0.781 | -1.3155 | 2.58603 | | |
| Equality of variance cannot be confirmed | | | | | | |
| The control means are not significantly different ($p = 0.71$) | 0.38691 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Heteroscedastic t Test indicates no significant differences | 0.07768 | 0.08285 | 0.02189 | 0.00947 | 0.16686 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

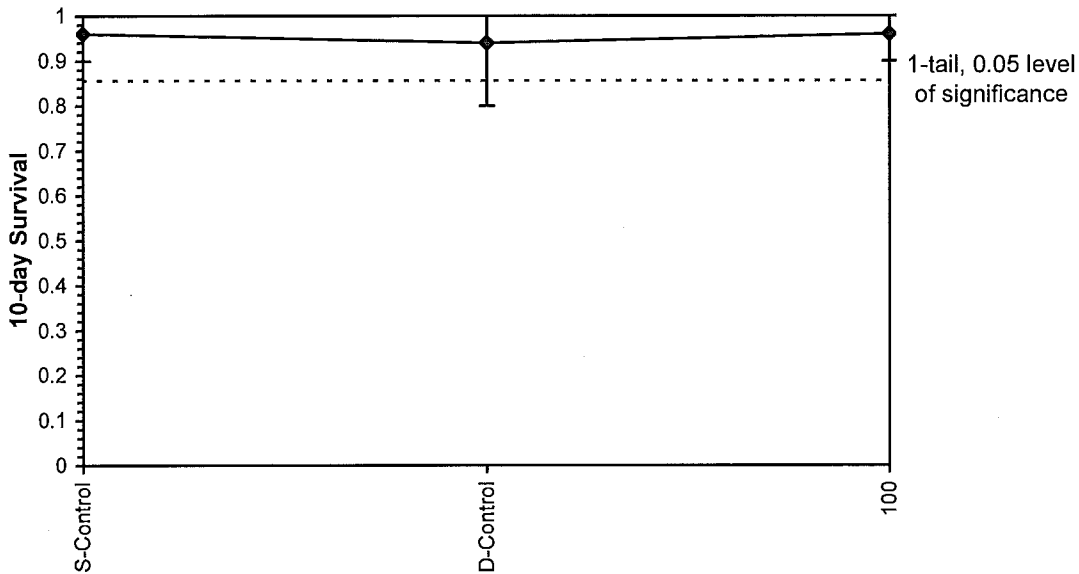
Start Date: 2/17/2015 Test ID: 15021218A Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021218 Sample Type: LH-16
 Sample Date: 1/26/2015 Protocol: E133792-ASTM E 1367-92 Test Species: MY-Mysidopsis bahia
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.90 | 1.00 | 1.00 | 0.90 | 1.00 |
| D-Control | 1.00 | 1.00 | 0.90 | 0.80 | 1.00 |
| 100 | 1.00 | 1.00 | 1.00 | 0.90 | 0.90 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|----------|--------|--------|----------|--|
| | | | Mean | Min | Max | CV% | Critical | | | MSD | |
| S-Control | 0.96 | 1.0213 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | | | | |
| D-Control | 0.94 | 1.0000 | 1.3184 | 1.1071 | 1.4120 | 10 | 5 | * | | | |
| 100 | 0.96 | 1.0213 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | -0.387 | 1.860 | 0.1364 | |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.81086 | 0.781 | -0.8871 | -0.547 | | |
| F-Test indicates equal variances ($p = 0.42$) | 2.3761 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.71$) | 0.38691 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.08132 | 0.08673 | 0.00201 | 0.01345 | 0.70891 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

Start Date: 2/17/2015 Test ID: 15021217A Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021217 Sample Type: LH-17
 Sample Date: 1/26/2015 Protocol: ~~E133792-ASTM-E 1367-92~~ Test Species: MY-Mysidopsis bahia
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.90 | 1.00 | 1.00 | 0.90 | 1.00 |
| D-Control | 1.00 | 1.00 | 0.90 | 0.80 | 1.00 |
| 100 | 0.90 | 0.80 | 1.00 | 1.00 | 1.00 |

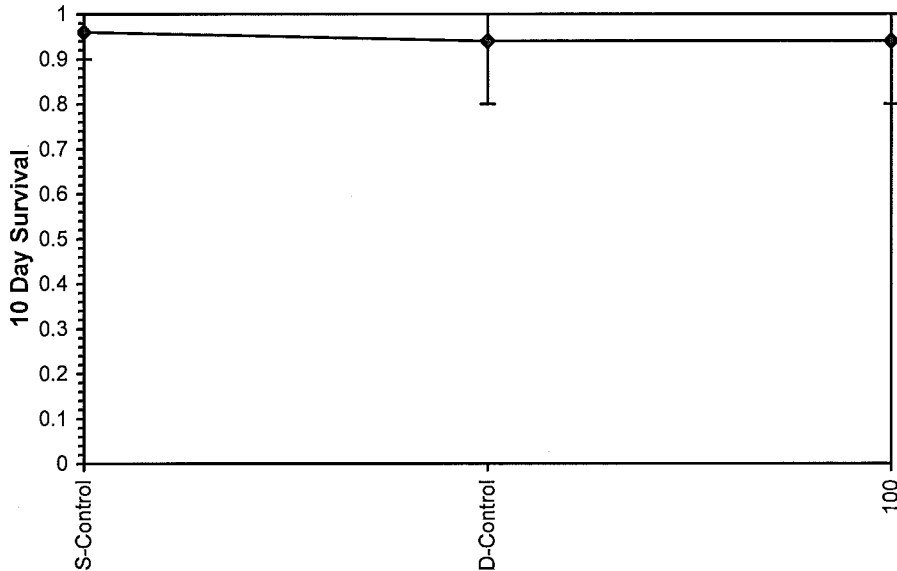
| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | Rank Sum | 1-Tailed Critical |
|-----------|------|--------|-------------------------------|--------|--------|-----|----------|-------------------|
| | | | Mean | Min | Max | CV% | | |
| S-Control | 0.96 | 1.0213 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | |
| D-Control | 0.94 | 1.0000 | 1.3184 | 1.1071 | 1.4120 | 10 | 5 | * |
| 100 | 0.94 | 1.0000 | 1.3184 | 1.1071 | 1.4120 | 10 | 5 | 27.50 19.00 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt |
|---|-----------|----------|---------|---------|
| Shapiro-Wilk's Test indicates non-normal distribution ($p \leq 0.01$) | 0.7196 | 0.781 | -0.9302 | -0.8766 |
| F-Test indicates equal variances ($p = 1.00$) | 1 | 23.1545 | | |
| The control means are not significantly different ($p = 0.71$) | 0.38691 | 2.306 | | |

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences
 Treatments vs D-Control

Dose-Response Plot



Acute-10-Day Survival

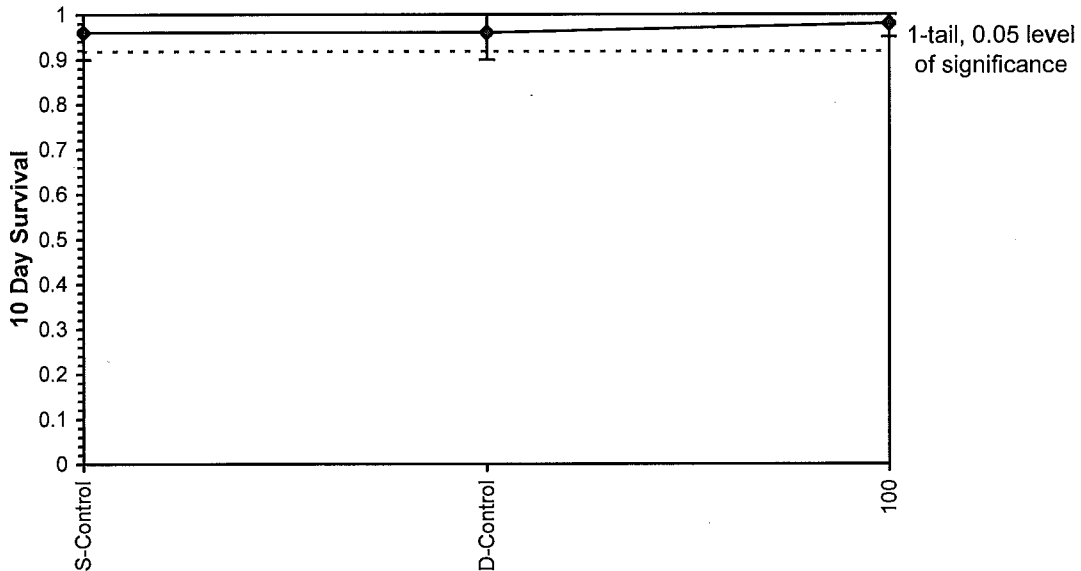
Start Date: 2/17/2015 Test ID: 15021219L Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021219 Sample Type: LH-04
 Sample Date: 1/27/2015 Protocol: E133792-ASTM E 1367-92 Test Species: Leptocheirus plumulosus
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.95 | 0.95 | 1.00 | 0.90 | 1.00 |
| D-Control | 0.90 | 0.95 | 1.00 | 1.00 | 0.95 |
| 100 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.96 | 1.0000 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | | | |
| D-Control | 0.96 | 1.0000 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | * | | |
| 100 | 0.98 | 1.0208 | 1.4134 | 1.3453 | 1.4588 | 4 | 5 | -0.865 | 1.860 | 0.0902 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|--------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.9143 | 0.781 | -0.326 | -1.1665 | | |
| F-Test indicates equal variances ($p = 0.51$) | 2.04489 | 23.1545 | | | | |
| The control means are not significantly different ($p = 1.00$) | 0 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.0423 | 0.04403 | 0.0044 | 0.00588 | 0.41235 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

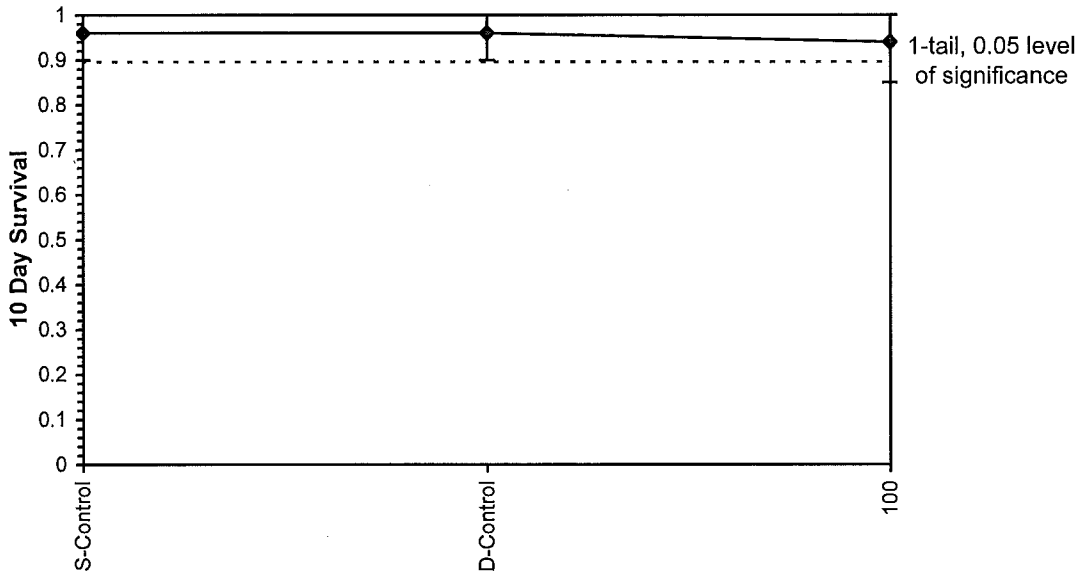
| | | |
|------------------------|----------------------------------|---------------------------------------|
| Start Date: 2/17/2015 | Test ID: 15021220L | Sample ID: CB&I |
| End Date: 2/27/2015 | Lab ID: 15021220 | Sample Type: LH-08 |
| Sample Date: 1/27/2015 | Protocol: E133792-ASTM-E-1367-92 | Test Species: Leptocheirus plumulosus |
| Comments: | [A] | |

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.95 | 0.95 | 1.00 | 0.90 | 1.00 |
| D-Control | 0.90 | 0.95 | 1.00 | 1.00 | 0.95 |
| 100 | 0.85 | 1.00 | 0.90 | 1.00 | 0.95 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.96 | 1.0000 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | | | |
| D-Control | 0.96 | 1.0000 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | * | | |
| 100 | 0.94 | 0.9792 | 1.3370 | 1.1731 | 1.4588 | 9 | 5 | 0.497 | 1.860 | 0.1288 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.92014 | 0.781 | -0.2534 | -1.3366 | | |
| F-Test indicates equal variances ($p = 0.51$) | 2.03555 | 23.1545 | | | | |
| The control means are not significantly different ($p = 1.00$) | 0 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.06465 | 0.06729 | 0.00296 | 0.01199 | 0.63237 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

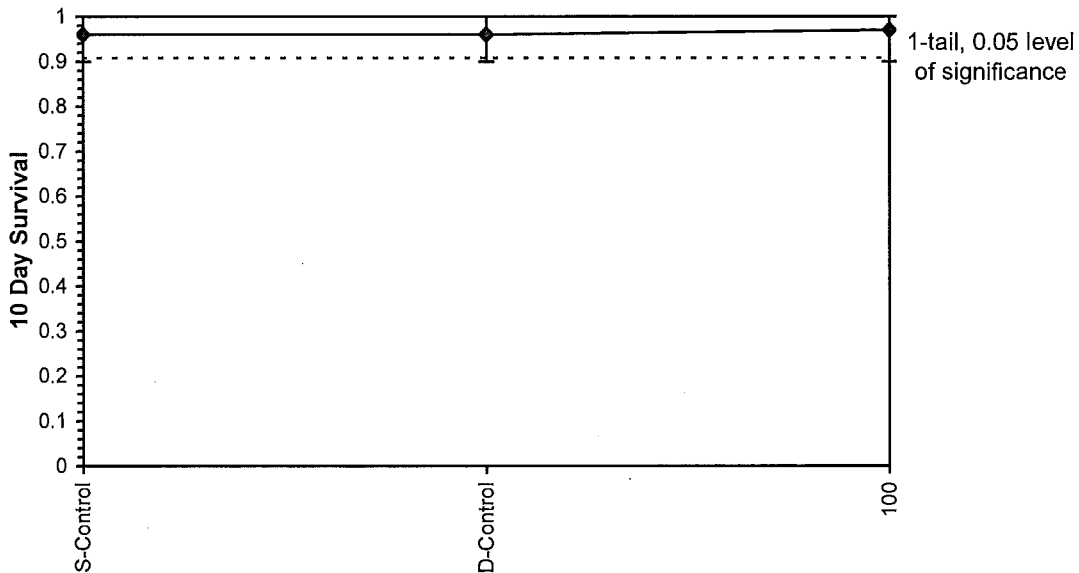
| | | |
|------------------------|----------------------------------|---------------------------------------|
| Start Date: 2/17/2015 | Test ID: 15021218L | Sample ID: CB&I |
| End Date: 2/27/2015 | Lab ID: 15021218 | Sample Type: LH-16 |
| Sample Date: 1/26/2015 | Protocol: E133792-ASTM E 1367-92 | Test Species: Leptocheirus plumulosus |
| Comments: | [A] | |

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.95 | 0.95 | 1.00 | 0.90 | 1.00 |
| D-Control | 0.90 | 0.95 | 1.00 | 1.00 | 0.95 |
| 100 | 1.00 | 1.00 | 1.00 | 0.95 | 0.90 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.96 | 1.0000 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | | | |
| D-Control | 0.96 | 1.0000 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | * | | |
| 100 | 0.97 | 1.0104 | 1.3941 | 1.2490 | 1.4588 | 7 | 5 | -0.390 | 1.860 | 0.1081 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.86268 | 0.781 | -0.6184 | -1.0761 | | |
| F-Test indicates equal variances ($p = 0.90$) | 1.13824 | 23.1545 | | | | |
| The control means are not significantly different ($p = 1.00$) | 0 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.05236 | 0.0545 | 0.00129 | 0.00845 | 0.70638 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

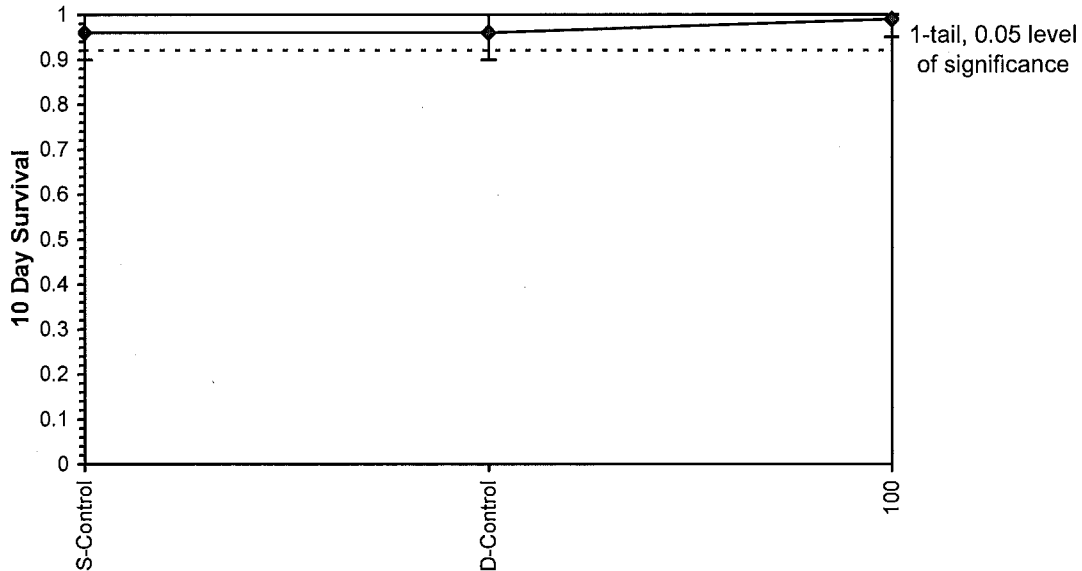
Start Date: 2/17/2015 Test ID: 15021217L Sample ID: CB&I
 End Date: 2/27/2015 Lab ID: 15021217 Sample Type: LH-17
 Sample Date: 1/26/2015 Protocol: E133792-ASTM-E-1367-92 Test Species: Leptocheirus plumulosus
 Comments: [A]

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.95 | 0.95 | 1.00 | 0.90 | 1.00 |
| D-Control | 0.90 | 0.95 | 1.00 | 1.00 | 0.95 |
| 100 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |

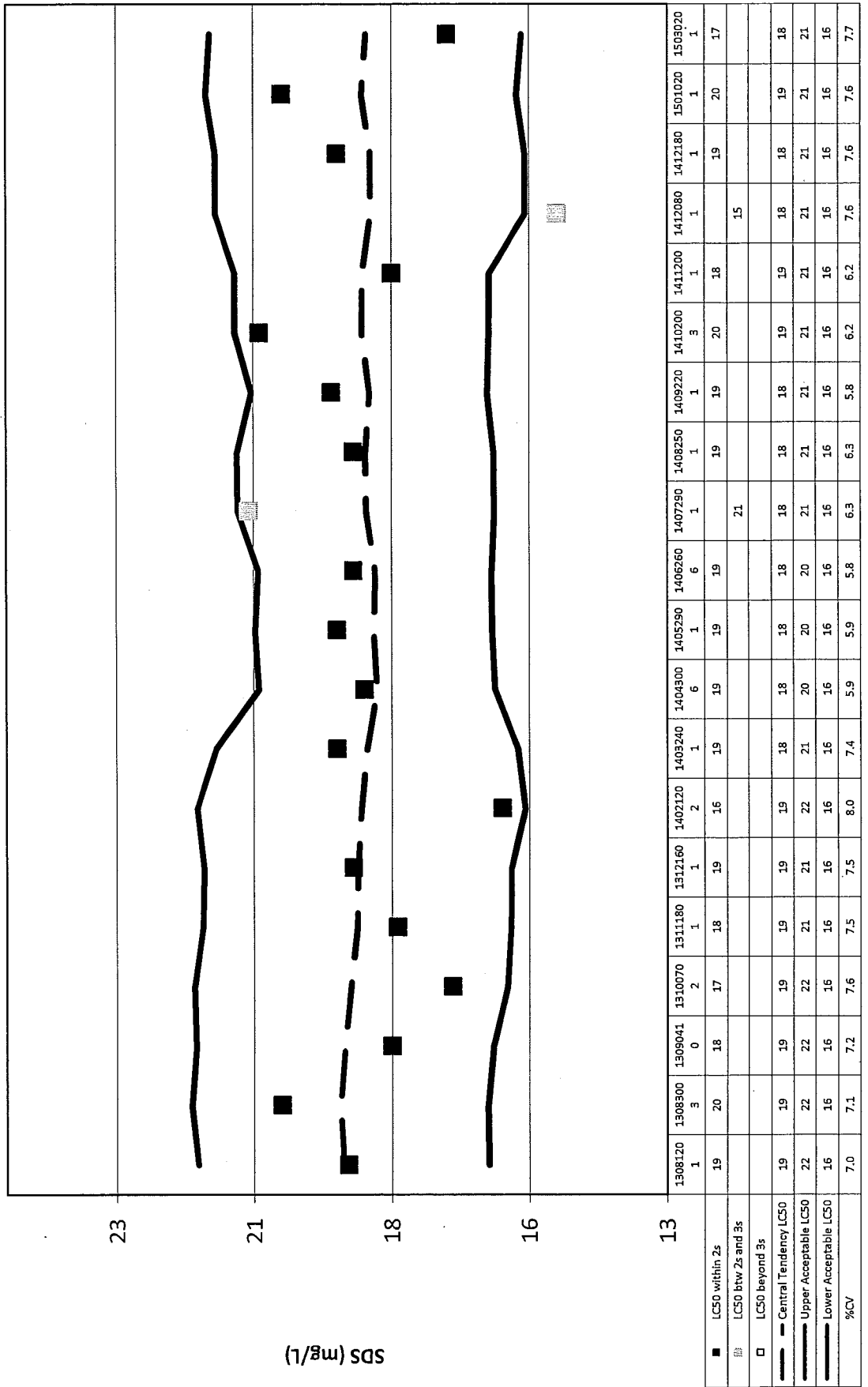
| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.96 | 1.0000 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | | | |
| D-Control | 0.96 | 1.0000 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | * | | |
| 100 | 0.99 | 1.0313 | 1.4361 | 1.3453 | 1.4588 | 4 | 5 | -1.412 | 1.860 | 0.0851 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.91131 | 0.781 | -0.5412 | -0.2049 | | |
| F-Test indicates equal variances ($p = 0.30$) | 3.06733 | 23.1545 | | | | |
| The control means are not significantly different ($p = 1.00$) | 0 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.03955 | 0.04116 | 0.01045 | 0.00524 | 0.19559 | 1, 8 |
| Treatments vs D-Control | | | | | | |

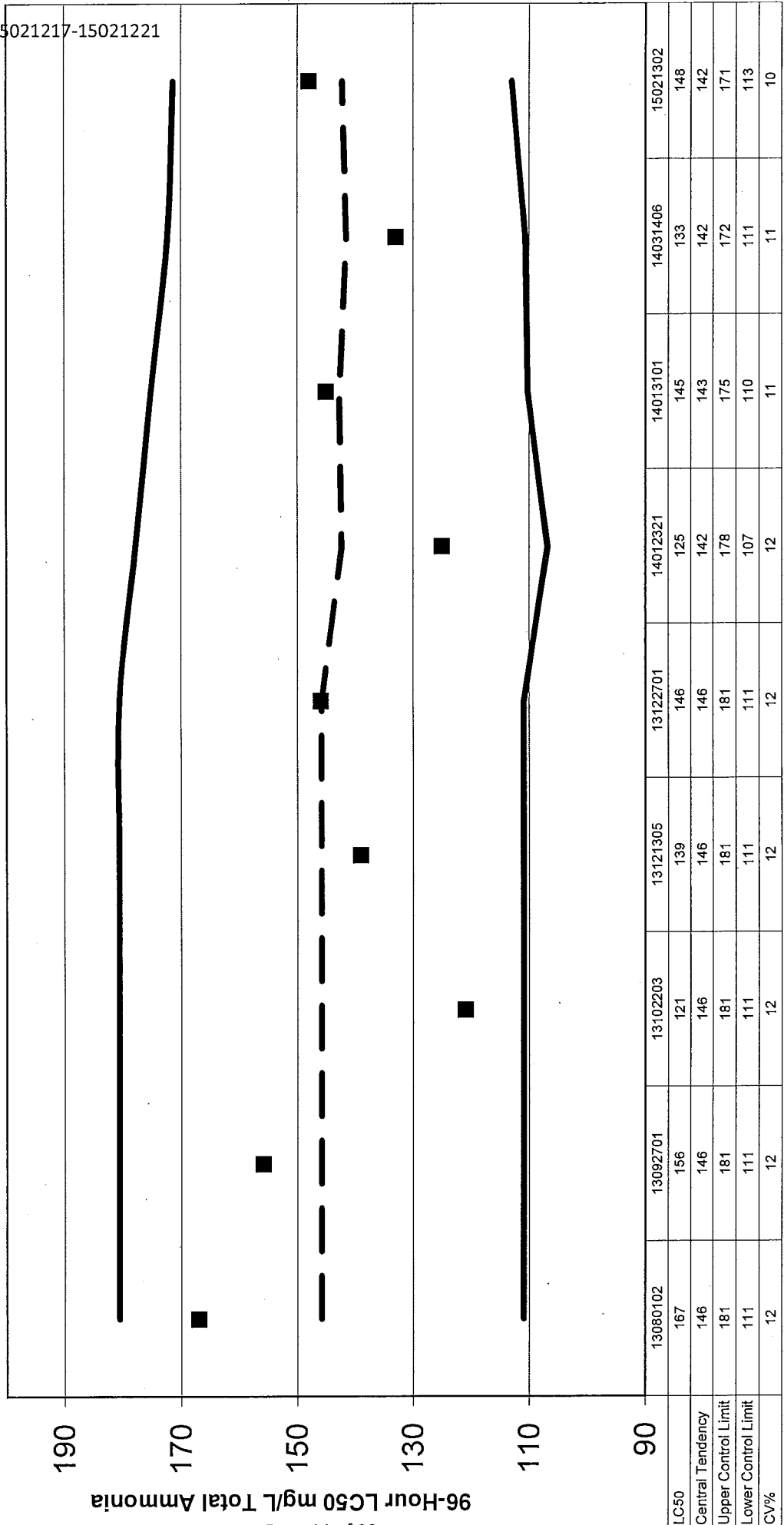
Dose-Response Plot



CK Associates
Sodium Dodecyl Sulfate Reference Toxicant Control Chart
96-Hour LC₅₀ for *Mysidopsis bahia*



C-K Associates, LLC
Reference - Water Column 96-Hour Acute Control Chart
Leptocheirus plumulosus
Total Ammonia mg/L



| | | | | |
|------|------------------|---------------------|---------------------|-----|
| ■ | — | — | — | ● |
| LC50 | Central Tendency | Upper Control Limit | Lower Control Limit | CV% |

| | 13080102 | 13092701 | 13102203 | 13121305 | 13122701 | 14012321 | 14013101 | 14031406 | 15021302 |
|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| LC50 | 167 | 156 | 121 | 139 | 146 | 125 | 145 | 133 | 148 |
| Central Tendency | 146 | 146 | 146 | 146 | 146 | 142 | 143 | 142 | 142 |
| Upper Control Limit | 181 | 181 | 181 | 181 | 181 | 178 | 175 | 172 | 171 |
| Lower Control Limit | 111 | 111 | 111 | 111 | 111 | 107 | 110 | 111 | 113 |
| CV% | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 10 |



Survival Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Template: 2

Sample ID: LH Area

Organism Age: 5 days old

QC Review: 662

Test ID: 15021217-21

Organism Batch: 9030

| |
|-----------------|
| Exposure Period |
| Day |
| Date |
| Time |
| Technician |

| |
|-----------------|
| Test Initiation |
| Tue |
| 2.17.15 |
| 1510 |
| NAC |

| |
|---|
| Observations Made at the End of 10-Day Exposure Period: |
| Tue FR |
| 2.27.15 |
| 0900 |
| 662 |

662
2.27.15

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| Lab Control | 1 |
| | 2 |
| (Culture Sediment) | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 9 |
| 10 |
| 10 |
| 9 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| LH-BG REF Sediment | 2 |
| | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 9 |
| 8 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| LH-04 | 2 |
| | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 9 |
| 10 |
| 10 |
| 10 |



Survival Data for 10-Day Whole Sediment Toxicity Test

Leptocheirus plumulosus

Hydrotus bairdi

662
2.16.15

Client: CB & I

Sample ID: LH Area

Test ID: 15021217-21

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 10 | 10 |
| | 2 | 10 | 10 |
| LH-08 | 3 | 10 | 10 |
| | 4 | 10 | 10 |
| | 5 | 10 | 10 |

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 10 | 10 |
| | 2 | 10 | 10 |
| LH-16 | 3 | 10 | 10 |
| | 4 | 10 | 9 |
| | 5 | 10 | 9 |

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 10 | 9 |
| | 2 | 10 | 8 |
| LH-17 | 3 | 10 | 10 |
| | 4 | 10 | 10 |
| | 5 | 10 | 10 |

| Technician Observations | | | |
|-------------------------|------|----------|--------------|
| Date | Time | Initials | Observations |
| | | | |
| | | | |
| | | | |
| | | | |



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID LH Area

Lab ID: 15021217-21

DATA SHEET FOR 10-DAY
Mysidopsis bahia
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

Control - Culture Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.0 | 7.4 | 2.64 | 02/17/15 | 1500 | NAG |
| 1 | | 24.9 | 21 | 8.1 | 6.9 | 3.90 | 02/18/15 | 1140 | NAG |
| 2 | | 25.2 | 21 | 8.3 | 6.6 | 4.41 | 02/19/15 | 1140 | NAG |
| 3 | yes | 24.9 | 22 | 7.7 | 6.2 | 4.14 | 02/20/15 | 1410 | NAG |
| 4 | | 26.4 | 20 | 8.1 | 6.4 | 1.32 | 02/21/15 | 1140 | GGZ |
| 5 | | 25.1 | 21 | 8.1 | 6.1 | 0.61 | 02/22/15 | 0950 | GGZ |
| 6 | yes | 25.9 | 21 | 7.8 | 6.3 | N/A | 02/23/15 | 1130 | NAG |
| 7 | | 24.9 | 20 | 8.1 | 6.2 | 0.46 | 02/24/15 | 1315 | GGZ |
| 8 | Yes | 24.9 | 20 | 8.1 | 6.2 | 0.18 | 02/25/15 | 1015 | GGZ |
| 9 | | 24.6 | 21 | 7.8 | 6.1 | 0.24 | 02/26/15 | 0910 | GGZ |
| 10 | Terminate | 24.5 | 21 | 7.9 | 6.2 | <0.01 | 02/27/15 | 0815 | GGZ |

LH-BG Reference Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.0 | 6.9 | 0.63 | 02/17/15 | 1500 | NAG |
| 1 | | 24.9 | 22 | 7.9 | 6.8 | 0.87 | 02/18/15 | 1140 | NAG |
| 2 | | 25.2 | 22 | 8.2 | 6.6 | 3.06 | 02/19/15 | 1140 | NAG |
| 3 | yes | 24.9 | 21 | 7.7 | 6.1 | 2.43 | 02/20/15 | 1410 | NAG |
| 4 | | 26.4 | 20 | 8.1 | 6.0 | 2.10 | 02/21/15 | 1140 | GGZ |
| 5 | | 25.1 | 20 | 8.2 | 6.2 | 1.74 | 02/22/15 | 0950 | GGZ |
| 6 | yes | 25.9 | 21 | 7.9 | 6.1 | N/A | 02/23/15 | 1130 | NAG |
| 7 | | 24.9 | 21 | 8.1 | 6.2 | 0.64 | 02/24/15 | 1315 | GGZ |
| 8 | Yes | 24.9 | 21 | 8.1 | 6.5 | 1.86 | 02/25/15 | 1015 | GGZ |
| 9 | | 24.6 | 20 | 7.9 | 6.1 | 0.36 | 02/26/15 | 0910 | GGZ |
| 10 | Terminate | 24.5 | 21 | 7.9 | 6.2 | <0.01 | 02/27/15 | 0815 | GGZ |

Renewal: Conducted every 48 hours AS noted 3-24-15 MSE

Feeding: Organisms were fed daily



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID LH Area

Lab ID: 15021217-21

DATA SHEET FOR 10-DAY

Mysidopsis bahia

STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

LH-04

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 21 | 8.2 | 6.8 | 0.23 | 02/17/15 | 1500 | NAG |
| 1 | | 24.9 | 21 | 8.2 | 6.7 | 0.62 | 02/18/15 | 1140 | NAG |
| 2 | | 25.2 | 21 | 8.3 | 6.7 | 2.16 | 02/19/15 | 1140 | NAG |
| 3 | yes | 24.9 | 21 | 8.2 | 6.6 | 1.98 | 02/20/15 | 1410 | NAG |
| 4 | | 26.4 | 22 | 8.2 | 6.1 | 1.34 | 02/21/15 | 1140 | GGZ |
| 5 | | 25.1 | 22 | 8.2 | 6.2 | 1.71 | 02/22/15 | 0950 | GGZ |
| 6 | yes | 25.9 | 21 | 8.0 | 6.3 | N/A | 02/23/15 | 1130 | NAG |
| 7 | | 24.9 | 20 | 8.3 | 6.4 | 0.51 | 02/24/15 | 1315 | GGZ |
| 8 | Yes | 24.9 | 20 | 8.2 | 6.4 | 0.57 | 02/25/15 | 1015 | GGZ |
| 9 | | 24.6 | 20 | 8.0 | 6.2 | 0.20 | 02/26/15 | 0910 | GGZ |
| 10 | Terminate | 24.5 | 21 | 7.9 | 6.3 | 0.04 | 02/27/15 | 0815 | GGZ |

LH-08

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.2 | 7.1 | 0.13 | 02/17/15 | 1500 | NAG |
| 1 | | 24.9 | 22 | 8.1 | 6.8 | 0.44 | 02/18/15 | 1140 | NAG |
| 2 | | 25.2 | 22 | 8.1 | 7.0 | 1.20 | 02/19/15 | 1140 | NAG |
| 3 | yes | 24.6 | 21 | 8.0 | 6.5 | 2.52 | 02/20/15 | 1410 | NAG |
| 4 | | 26.4 | 22 | 8.2 | 6.7 | 1.38 | 02/21/15 | 1140 | GGZ |
| 5 | | 25.1 | 22 | 8.1 | 6.4 | 1.16 | 02/22/15 | 0950 | GGZ |
| 6 | yes | 25.9 | 20 | 8.0 | 6.6 | N/A | 02/23/15 | 1130 | NAG |
| 7 | | 24.9 | 20 | 8.3 | 6.5 | 0.86 | 02/24/15 | 1315 | GGZ |
| 8 | Yes | 24.9 | 21 | 8.2 | 6.4 | 0.69 | 02/25/15 | 1015 | GGZ |
| 9 | | 24.6 | 21 | 8.0 | 6.3 | 0.40 | 02/26/15 | 0910 | GGZ |
| 10 | Terminate | 24.5 | 21 | 7.9 | 6.3 | 0.32 | 02/27/15 | 0815 | GGZ |

Renewal: Conducted every 48 hours As noted MSE 3-24-15

Feeding: Organisms were fed daily



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Sample ID LH Area

Lab ID: 15021217-21

DATA SHEET FOR 10-DAY
Mysidopsis bahia
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

LH-16

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.2 | 7.2 | 0.08 | 02/17/15 | 1500 | NAG |
| 1 | | 24.9 | 21 | 8.2 | 7.0 | 0.30 | 02/18/15 | 1140 | NAG |
| 2 | | 25.2 | 21 | 8.2 | 6.9 | 1.26 | 02/19/15 | 1140 | NAG |
| 3 | yes | 24.9 | 21 | 8.1 | 6.0 | 1.35 | 02/20/15 | 1410 | NAG |
| 4 | 0 | 26.4 | 20 | 8.2 | 6.3 | 0.98 | 02/21/15 | 1140 | CCZ |
| 5 | | 25.1 | 20 | 8.2 | 6.4 | 0.68 | 02/22/15 | 0950 | CCZ |
| 6 | yes | 25.9 | 22 | 8.2 | 6.3 | N/A | 02/23/15 | 1130 | NAG |
| 7 | | 24.9 | 21 | 8.1 | 6.2 | 0.30 | 02/24/15 | 1315 | CCZ |
| 8 | Yes | 24.9 | 21 | 8.1 | 6.4 | 0.25 | 02/25/15 | 1015 | CCZ |
| 9 | | 24.6 | 21 | 8.0 | 6.3 | 0.16 | 02/26/15 | 0910 | CCZ |
| 10 | Terminate | 24.5 | 21 | 7.9 | 6.3 | 0.01 | 02/27/15 | 0815 | CCZ |

LH-17

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.2 | 7.1 | 0.19 | 02/17/15 | 1500 | NAG |
| 1 | | 24.9 | 21 | 8.3 | 6.9 | 0.69 | 02/18/15 | 1140 | NAG |
| 2 | | 25.2 | 22 | 8.2 | 6.9 | 1.53 | 02/19/15 | 1140 | NAG |
| 3 | yes | 24.9 | 21 | 8.2 | 6.7 | 2.61 | 02/20/15 | 1410 | NAG |
| 4 | | 26.4 | 20 | 8.1 | 6.8 | 1.10 | 02/21/15 | 1140 | CCZ |
| 5 | | 25.1 | 20 | 8.1 | 6.7 | 1.86 | 02/22/15 | 0950 | CCZ |
| 6 | yes | 25.9 | 21 | 8.2 | 6.9 | N/A | 02/23/15 | 1130 | NAG |
| 7 | | 24.9 | 21 | 8.1 | 6.8 | 0.60 | 02/24/15 | 1315 | CCZ |
| 8 | Yes | 24.9 | 21 | 8.0 | 6.4 | 0.36 | 02/25/15 | 1015 | CCZ |
| 9 | | 24.6 | 20 | 8.0 | 6.4 | 0.13 | 02/26/15 | 0910 | CCZ |
| 10 | Terminate | 24.5 | 20 | 7.9 | 6.4 | 0.01 | 02/27/15 | 0815 | CCZ |

Renewal: Conducted every 48 hours ^{As noted} MSE 3-24-15

Feeding: Organisms were fed daily



Daily Instrument Usage Log
Mysidopsis bahia

Client: CB & I

Sample ID LH Area

Lab ID: 15021217-21

Meter Identification:

| Day | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|------------|-------------------|------------|----------------|-------------------|----------|------|---------|
| 0 | T-14.2 | M-003 | | | DR-890 | 02/17/15 | 1500 | NAG |
| 1 | T-14.2 | M-003 | | | DR-890 | 02/18/15 | 1140 | NAG |
| 2 | T-14.2 | M-003 | | | DR-890 | 02/19/15 | 1140 | NAG |
| 3 | T-14.2 | M-003 | | | DR-890 | 02/20/15 | 1410 | NAG |
| 4 | T-14.2 | M-003 | | | DR-890 | 02/21/15 | 1138 | KCS |
| 5 | T-14.2 | M-003 | | | DR-890 | 02/22/15 | 0950 | KCS |
| 6 | T-14.2 | M-003 | | | DR-890 | 02/23/15 | 1130 | NAG |
| 7 | T-14.2 | M-003 | | | DR-890 | 02/24/15 | 1315 | KCS |
| 8 | T-14.2 | M-003 | | | DR-890 | 02/25/15 | 1055 | ECH |
| 9 | T-14.2 | M-003 | | | DR-890 | 02/26/15 | 0910 | NAG |
| 10 | T-14.2 | M-003 | | | DR-890 | 02/27/15 | 0815 | GGZ |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Template: 1

Sample ID: LH Area

Organism Age: 3-5mm

QC Review: 662

Test ID: 15021217-21

Organism Batch:

| |
|-----------------|
| Exposure Period |
| Day |
| Date |
| Time |
| Technician |

| |
|-----------------|
| Test Initiation |
| Tue |
| 2.17.15 |
| 1150 |
| NAG |

| |
|---|
| Observations Made at the End of 10-Day Exposure Period: |
| Tue FRI |
| 2.27.15 |
| 0830 |
| 662 |

662
2.27.15

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| Lab Control | 1 |
| | 2 |
| (Culture Sediment) | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 19 |
| 19 |
| 20 |
| 18 |
| 20 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| LH-BG REF Sediment | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20* |

| |
|--------------------------|
| Number of Live Organisms |
| 18 |
| 19 |
| 20 |
| 20 |
| 19 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| LH-04 | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 19 |
| 19 |
| 20 |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID: LH Area

Test ID: 15021217-21

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 20 | 17 |
| | 2 | 20 | 20 |
| LH-08 | 3 | 20 | 18 |
| | 4 | 20 | 20 |
| | 5 | 20 | 19 |

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 20 | 20 |
| | 2 | 20 | 20 |
| LH-16 | 3 | 20 | 20 |
| | 4 | 20 | 19 |
| | 5 | 20 | 18 |

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 20 | 19 |
| | 2 | 20 | 20 |
| LH-17 | 3 | 20 | 20 |
| | 4 | 20 | 20 |
| | 5 | 20 | 20 |

| Technician Observations | | | |
|-------------------------|------|----------|--------------|
| Date | Time | Initials | Observations |
| | | | |
| | | | |
| | | | |
| | | | |



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15021217-21

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

Control - Culture Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 19 | 7.8 | 6.6 | 2.64 | 02/17/15 | 1150 | NAG |
| 1 | | 24.9 | 20 | 8.1 | 6.7 | 4.32 | 02/18/15 | 1150 | NAG |
| 2 | | 25.2 | 20 | 8.1 | 6.8 | 3.60 | 02/19/15 | 1150 | NAG |
| 3 | yes | 24.9 | 20 | 7.9 | 6.3 | 2.52 | 02/20/15 | 1420 | NAG |
| 4 | y | 26.4 | 20 | 8.1 | 6.4 | 0.45 | 02/21/15 | 1138 | KCS |
| 5 | | 25.1 | 20 | 7.5 | 6.2 | 0.24 | 02/22/15 | 0950 | KCS |
| 6 | yes | 25.9 | 21 | 7.7 | 6.5 | N/A | 02/23/15 | 1300 | NAG |
| 7 | y | 24.9 | 21 | 7.8 | 6.1 | 0.10 | 02/24/15 | 1315 | KCS |
| 8 | yes | 24.9 | 21 | 8.1 | 6.3 | 0.13 | 02/25/15 | 1015 | ELH |
| 9 | | 24.6 | 20 | 8.0 | 6.4 | 0.09 | 02/26/15 | 0915 | NAG |
| 10 | Terminate | 24.5 | 20 | 7.9 | 6.5 | 20.01 | 02/27/15 | 0815 | 602 |

LH-BG Reference Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 19 | 7.6 | 6.9 | 0.63 | 02/17/15 | 1150 | NAG |
| 1 | | 24.9 | 21 | 8.1 | 6.8 | 1.32 | 02/18/15 | 1150 | NAG |
| 2 | | 25.2 | 21 | 8.0 | 6.6 | 0.99 | 02/19/15 | 1150 | NAG |
| 3 | yes | 24.9 | 21 | 7.9 | 6.2 | 0.72 | 02/20/15 | 1420 | NAG |
| 4 | y | 26.4 | 21 | 8.1 | 6.1 | 1.35 | 02/21/15 | 1138 | KCS |
| 5 | | 25.1 | 21 | 7.8 | 6.2 | 1.77 | 02/22/15 | 0950 | KCS |
| 6 | yes | 25.9 | 22 | 7.8 | 6.1 | N/A | 02/23/15 | 1300 | NAG |
| 7 | | 24.9 | 21 | 7.9 | 6.1 | 1.02 | 02/24/15 | 1315 | KCS |
| 8 | yes | 24.9 | 21 | 8.1 | 6.4 | 0.87 | 02/25/15 | 1015 | ELH |
| 9 | | 24.6 | 20 | 8.0 | 6.1 | 0.72 | 02/26/15 | 0915 | NAG |
| 10 | Terminate | 24.5 | 20 | 7.9 | 6.2 | 0.20 | 02/27/15 | 0815 | 602 |

Renewal: Conducted ~~every 48 hours~~ AS NOTED MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15021217-21

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

LH-04

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 19 | 7.9 | 7.0 | 0.23 | 02/17/15 | 1150 | NAG |
| 1 | | 24.9 | 21 | 8.1 | 6.9 | 0.75 | 02/18/15 | 1150 | NAG |
| 2 | | 25.2 | 21 | 8.2 | 6.7 | 1.32 | 02/19/15 | 1150 | NAG |
| 3 | yes | 24.9 | 22 | 8.1 | 6.2 | 1.86 | 02/20/15 | 1410 | NAG |
| 4 | | 26.4 | 21 | 8.2 | 6.2 | 0.88 | 02/21/15 | 1138 | KCS |
| 5 | | 25.1 | 21 | 8.1 | 6.3 | 0.96 | 02/22/15 | 0950 | KCS |
| 6 | yes | 25.9 | 22 | 8.0 | 6.3 | N/A | 02/23/15 | 1300 | NAG |
| 7 | | 24.9 | 21 | 8.1 | 6.1 | 0.54 | 02/24/15 | 1315 | KCS |
| 8 | yes | 24.9 | 21 | 8.2 | 6.5 | 0.36 | 02/25/15 | 1015 | EZH |
| 9 | | 24.6 | 20 | 8.1 | 6.1 | 0.11 | 02/26/15 | 0915 | NAG |
| 10 | Terminate | 24.5 | 20 | 8.1 | 6.2 | 0.01 | 02/27/15 | 0815 | CCZ |

LH-08

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 7.8 | 6.6 | 0.13 | 02/17/15 | 1150 | NAG |
| 1 | | 24.9 | 20 | 8.1 | 6.9 | 0.57 | 02/18/15 | 1150 | NAG |
| 2 | | 25.2 | 21 | 8.1 | 6.9 | 0.84 | 02/19/15 | 1150 | NAG |
| 3 | yes | 24.9 | 21 | 8.0 | 6.2 | 1.29 | 02/20/15 | 1410 | NAG |
| 4 | | 26.4 | 20 | 8.2 | 6.5 | 0.62 | 02/21/15 | 1138 | KCS |
| 5 | | 25.1 | 20 | 8.1 | 6.5 | 0.36 | 02/22/15 | 0950 | KCS |
| 6 | yes | 25.9 | 22 | 8.0 | 6.4 | N/A | 02/23/15 | 1300 | NAG |
| 7 | | 24.9 | 21 | 8.1 | 6.3 | 0.49 | 02/24/15 | 1315 | KCS |
| 8 | yes | 24.9 | 21 | 8.2 | 6.1 | 0.53 | 02/25/15 | 1010 | EZH |
| 9 | | 24.6 | 20 | 8.1 | 6.4 | 0.20 | 02/26/15 | 0915 | NAG |
| 10 | Terminate | 24.5 | 20 | 8.0 | 6.3 | 0.20 | 02/27/15 | 0815 | CCZ |

Renewal: Conducted ~~every 48 hours~~ as noted MSF 3-24-15

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15021217-21

DATA SHEET FOR 10-DAY

Leptocheirus plumulosus

STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

LH-16

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 19 | 8.1 | 7.0 | 0.08 | 02/17/15 | 1150 | NAG |
| 1 | | 24.9 | 21 | 8.1 | 6.9 | 0.69 | 02/18/15 | 1150 | NAG |
| 2 | | 25.2 | 21 | 8.2 | 7.0 | 0.42 | 02/19/15 | 1150 | NAG |
| 3 | yes | 24.9 | 22 | 8.2 | 6.4 | 0.72 | 02/20/15 | 1410 | NAG |
| 4 | y | 26.4 | 20 | 8.3 | 6.4 | 0.68 | 02/21/15 | 1138 | KCS |
| 5 | | 25.1 | 21 | 8.2 | 6.6 | 0.64 | 02/22/15 | 0950 | KCS |
| 6 | yes | 25.9 | 22 | 8.2 | 6.4 | N/A | 02/23/15 | 1300 | NAG |
| 7 | y | 24.9 | 21 | 8.2 | 6.5 | 0.34 | 02/24/15 | 1315 | KCS |
| 8 | yes | 24.9 | 21 | 8.3 | 6.7 | 0.28 | 02/25/15 | 1015 | EZH |
| 9 | | 24.6 | 20 | 8.2 | 6.3 | 0.12 | 02/26/15 | 0915 | NAG |
| 10 | Terminate | 24.5 | 20 | 8.1 | 6.3 | 0.01 | 02/27/15 | 0815 | CCZ |

LH-17

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.6 | 20 | 8.0 | 6.8 | 0.19 | 02/17/15 | 1150 | NAG |
| 1 | | 24.9 | 21 | 8.1 | 6.9 | 1.59 | 02/18/15 | 1150 | NAG |
| 2 | | 25.2 | 21 | 8.2 | 6.9 | 1.32 | 02/19/15 | 1150 | NAG |
| 3 | yes | 24.9 | 22 | 8.2 | 6.4 | 1.77 | 02/20/15 | 1410 | NAG |
| 4 | y | 26.4 | 21 | 8.3 | 6.6 | 0.90 | 02/21/15 | 1138 | KCS |
| 5 | | 25.1 | 21 | 8.2 | 6.6 | 1.02 | 02/22/15 | 0950 | KCS |
| 6 | yes | 25.9 | 22 | 8.2 | 6.4 | N/A | 02/23/15 | 1300 | NAG |
| 7 | y | 24.9 | 21 | 8.3 | 6.5 | 0.33 | 02/24/15 | 1315 | KCS |
| 8 | yes | 24.9 | 22 | 8.3 | 6.7 | 0.22 | 02/25/15 | 1015 | EZH |
| 9 | | 24.6 | 20 | 8.2 | 6.5 | 0.10 | 02/26/15 | 0915 | NAG |
| 10 | Terminate | 24.5 | 20 | 8.1 | 6.4 | 20.01 | 02/27/15 | 0815 | CCZ |

Renewal: Conducted every 48 hours AS NOTED MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Daily Instrument Usage Log
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15021217-21

Meter Identification:

| Day | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|------------|-------------------|------------|----------------|-------------------|----------|------|---------|
| 0 | T-14.2 | M-003 | | | DR-890 | 02/17/15 | 1150 | NAG |
| 1 | T-14.2 | M-003 | | | DR-890 | 02/18/15 | 1150 | NAG |
| 2 | T-14.2 | M-003 | | | DR-890 | 02/19/15 | 1150 | NAG |
| 3 | T-14.2 | M-003 | | | DR-890 | 02/20/15 | 1420 | NAG |
| 4 | T-14.2 | M-003 | | | DR-890 | 02/21/15 | 1138 | KCS |
| 5 | T-14.2 | M-003 | | | DR-890 | 02/22/15 | 0950 | KCS |
| 6 | T-14.2 | M-003 | | | DR-890 | 02/23/15 | 1300 | NAG |
| 7 | T-14.2 | M-003 | | | DR-890 | 02/24/15 | 1315 | KCS |
| 8 | T-14.2 | M-003 | | | DR-890 | 02/25/15 | 1055 | EZH |
| 9 | T-14.2 | M-003 | | | DR-890 | 02/26/15 | 0915 | NAG |
| 10 | T-14.2 | M-003 | | | DR-890 | 02/27/15 | 0815 | GGZ |

Client: CB & I

Sample ID: LH Area

Test ID: 15021217-21

Site-spec.

Instruct.: Control sediment is lept culture sediment. Overlying water is 20 ppt ASSW.

Note: All volumes are expressed in milliliters (mL)

Leptocheirus plumulosus

| Sediment Vol/Rep (mL) | Reps/Trt | Org/Rep | ASSW Vol/Rep (mL) |
|-----------------------|----------|---------|-------------------|
| 175 | 5 | 20 | 725 |

Mysidopsis bahia

| Sediment Vol/Rep (mL) | Reps/Trt | Org/Rep | ASSW Vol/Rep (mL) |
|-----------------------|----------|---------|-------------------|
| 50 | 5 | 10 | 150 |

| Conc. | Sediment (mL) | ASSW (mL) |
|-----------------------------|---------------|-----------|
| Lab control | 975 | 3625 |
| LH-BG Ref | 975 | 3625 |
| LH-04 | 975 | 3625 |
| LH-08 | 975 | 3625 |
| LH-16 | 975 | 3625 |
| LH-17 | 975 | 3625 |
| Total ASSW for Test Renewal | | 21750 |

| Conc. | Sediment (mL) | ASSW (mL) |
|-----------------------------|---------------|-----------|
| Lab control | 250 | 750 |
| LH-BG Ref | 250 | 750 |
| LH-04 | 250 | 750 |
| LH-08 | 250 | 750 |
| LH-16 | 250 | 750 |
| LH-17 | 250 | 750 |
| Total ASSW for Test Renewal | | 4500 |

| | |
|-------------------|------------------------|
| Initiation Date: | Tue, February 17, 2015 |
| WQ Parameter Vol: | 100 mL |

Note: Initiation Date = Organism Loading (ASSW, test sample and control sediment are placed in the test chambers the day prior to organism loading.)

Test Preparation Documentation for the Beginning of 10-Day Exposure Period

(ASSW + Sediment)

| | |
|-------------------|------------|
| Control Sediment | |
| Sediment Batch ID | 150212-CUL |

| Field Sediments | LH-BG Ref | LH-04 | LH-08 | LH-16 | LH-17 |
|-----------------|-----------|----------|----------|----------|----------|
| Sample ID | 15021221 | 15021219 | 15021220 | 15021218 | 15021217 |
| Collection Date | 1.28.15 | 1.27.15 | 1.27.15 | 1.26.15 | 1.26.15 |
| Collection Time | 1415 | 0830 | 1315 | 1240 | 1120 |

| | |
|-----------------------|---------------------------|
| Date | Monday, February 16, 2015 |
| Time | 1200 |
| Technician | NAG |
| Synthetic Water Batch | 2429 (Adjust to 20ppt) |



Water Quality Data

Client: CB & I
 Sample ID: LH Area
 Test ID: 15021217-21

Synthetic Water

| | Batch | Batch | Batch |
|---|-------|-------|-------|
| Parameter | 2429 | 2430 | / |
| Dissolved Oxygen (mg/L O ₂) | 7.3 | 7.2 | / |
| pH (SU) | 8.2 | 8.3 | / |
| Salinity (ppt) | 20 | 20 | / |

Test Sediment Preparation

| Sample | Sieved Yes/No (due to indigenous organisms present) | Sieve Size | Analyst | Date | Time |
|-----------|---|------------|---------|---------|------|
| Reference | No | N/A | EGZ | 2.16.15 | 1030 |
| LH-04 | ↓ | ↓ | ↓ | ↓ | ↓ |
| LH-08 | ↓ | ↓ | ↓ | ↓ | ↓ |
| LH-16 | ↓ | ↓ | ↓ | ↓ | ↓ |
| LH-17 | ↓ | ↓ | ↓ | ↓ | ↓ |



17170 PERKINS ROAD
BATON ROUGE, LA 70810
PHONE (225) 755-1000
FAX (225) 751-2010
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HOUSTON, TX
PHONE (281) 397-9016
FAX (281) 397-6637

LELAP Certification Number 02080

LAKE CHARLES, LA
PHONE (337) 625-6577
FAX (337) 625-6580

SHREVEPORT, LA
PHONE (318) 797-8636
FAX (318) 798-0478

March 24, 2015

CB&I
4171 Essen Lane
Baton Rouge, Louisiana 70809
Attn: Mr. Glen Landry

Ref: Whole Sediment Toxicity Results
CK Project No: 12064
Test ID No.: 15030309, 15030310, 15030311 and 15021221

Dear Mr. Landry:

Enclosed please find the Toxicity Test Report containing results of a set of 10-day acute toxicity tests using *Mysidopsis bahia* and *Leptocheirus plumulosus* performed on the CB&I **LH Area** samples. If you have any questions concerning this toxicity testing report or if I can be of any further assistance to you, please call me at (225) 755-1011 x 1100.

Sincerely,
CK Associates

Monica S. Eues
Quality Assurance Manager

MSE/hbb

Enc.: Whole Sediment Toxicity Report

Issue Date: March 25, 2015

WHOLE SEDIMENT TOXICITY TEST REPORT
FOR
CB&I – PROJECT # 153673
LH AREA

TEST INITIATION DATE: MARCH 6, 2015

TEST IDENTIFICATION NO.: 15030309, 15030310, 15030311 and 15021221




17170 Perkins Road
Baton Rouge, Louisiana 70810
225-755-1000

The results of this analysis relate only to the referenced sample as it was submitted to CK Associates. Unless otherwise noted, all test results meet the requirements of TNI. This report shall not be reproduced in full or in part without the written consent of CK Associates.



Gus Zieske
Laboratory Director

3/25/15
Date



Monica S. Eues
Quality Assurance Manager

3/24/15
Date

SUMMARY AND CONCLUSIONS

Permittee: CB&I
 4171 Essen Lane
 Baton Rouge, Louisiana 70809

Laboratory: CK Associates
 17170 Perkins Road
 Baton Rouge, Louisiana 70810
 LELAP Certification #02080

Method(s): *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. Inland Testing Manual EPA-823-B-98-004 1998*

Test Sample: LH Area
 Test ID No.: 15030309, 15030310, 15030311 and 15021221
 Concentration: Whole Sediment
 Overlying Water: Synthetic Laboratory Water
 Sample Dates: January 28 and February 26, 2015
 Test Initiation Date: March 6, 2015
 Purpose: Benthic Toxicity

Test Acceptance Criteria

Performance criteria for *M. bahia* survival was met.

Performance criteria for *L. plumulosus* survival was met.

Test Results

| Sediment Identification | <i>Mysidopsis bahia</i> | | | <i>Leptocheirus plumulosus</i> | | |
|-------------------------|-------------------------|------|-----------------------------|--------------------------------|------|-----------------------------|
| | % Survival | NOEC | Toxicity Indicated (Yes/No) | % Survival | NOEC | Toxicity Indicated (Yes/No) |
| Laboratory Control | 98 | | | 96 | | |
| Reference Sediment | 100 | | | 98 | | |
| LH 19 | 96 | 100 | No | 95 | 100 | No |
| LH 20 | 94 | 100 | No | 98 | 100 | No |
| LH 21 | 96 | 100 | No | 96 | 100 | No |

Test Conclusions

The test samples did not indicate acute toxicity to either of the test species in the 10-day exposure.

INTRODUCTION

Samples of CB&I (**LH Area**) were collected on January 28 and February 26, 2015 and were received by CK Associates on January 30 (Reference) and February 27 (test samples), 2015. A *Mysidopsis bahia* 10-Day Acute Toxicity Test and a *Leptocheirus plumulosus* 10-Day Acute Toxicity Test were conducted as described below.

METHODS

The samples were tested in accordance with Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual. Inland Testing Manual EPA-823-B-98-004 1998. All test samples were prepared and overlying water added one day prior to the introduction of the test species. This allowed suspended particles to settle and established equilibrium between sediment and overlying water. All test chambers were maintained with constant aeration.

| <u>Test Parameters</u> | <u><i>Mysidopsis bahia</i></u> | <u><i>Leptocheirus plumulosus</i></u> |
|-----------------------------|--------------------------------|---------------------------------------|
| Organism Source | CK Associates | Aquatic Biotechnologies, Inc. |
| Organism Age | 5 days | 3-5 mm |
| Test Chamber Material | Polypropylene | Glass |
| Test Chamber Volume (mL) | 250 | 1,000 |
| Test Sediment Volume (mL) | 50 | 175 |
| Overlying Water Volume (mL) | 150 | 725 |

The tests were initiated by randomly placing five test organisms into plastic soufflé cups. Two soufflé cups were randomly placed into each test chamber for a total of 10 organisms per test replicate (*M. bahia* test). Four soufflé cups were randomly placed into each test chamber for a total of 20 organisms per test replicate (*L. plumulosus* test).

Water quality measurements were performed on all test solutions prior to test initiation and daily thereafter, as indicated on the attached data sheets. Overlying water was renewed on the 3rd, 5th and 7th day of the 10-day exposure. The test was conducted at 25 ± 2°C under fluorescent lighting with a photoperiod of 16 hours light and 8 hours dark. All test vessels were aerated at an estimated rate of 50 to 140 cubic centimeters/minute.

The lethal NOEC (No Observed Effect Concentration) was determined for each sample. The NOEC represents the concentration at and below which the sample result is not statistically different from the reference sediment result. Percent survival of exposed test organisms was determined at test termination by enumeration of live organisms. Survival is defined as any body or appendage movement. Following termination, the data were analyzed using TOXCALC version 5.0.23j.

The reference toxicants, sodium dodecyl sulfate (*M. bahia*) and ammonia (*L. plumulosus*), were used to monitor the sensitivity of the test organisms and the precision of the testing procedure. Acute reference toxicant tests are performed at least monthly and the resulting LC₅₀ values are plotted to determine if the results are within prescribed limits.

RESULTS

Mysidopsis bahia

Average survival percentages after 10 days of exposure are tabulated below.

| Percent Effluent | Percent Survival |
|--------------------------|------------------|
| Laboratory Control | 98 |
| LH-BG Reference Sediment | 100 |
| LH 19 | 96 |
| LH 20 | 94 |
| LH 21 | 96 |

The laboratory control met performance criteria for survival and variability. Based on the statistical analysis (pages 5 through 7) the 10-day survival NOECs of the CB&I LH samples were 100%. Detailed data for the test, including survival and water quality, are presented on pages 13 through 18.

Leptocheirus plumulosus

Average survival percentages after 10 days of exposure are tabulated below.

| Percent Effluent | Percent Survival |
|--------------------------|------------------|
| Laboratory Control | 96 |
| LH-BG Reference Sediment | 98 |
| LH 19 | 95 |
| LH 20 | 98 |
| LH 21 | 96 |

The laboratory control met performance criteria for survival and variability. Based on the statistical analysis (pages 8 through 10) the 10-day survival NOECs of the CB&I LH samples were 100. Detailed data for the test, including survival and water quality, are presented on pages 19 through 24.

QUALITY CONTROL

The reference toxicant LC₅₀ results for both organisms were within the control limits established with the twenty most recent reference toxicant LC₅₀ results (pages 11 and 12).

Acute-10-Day Survival

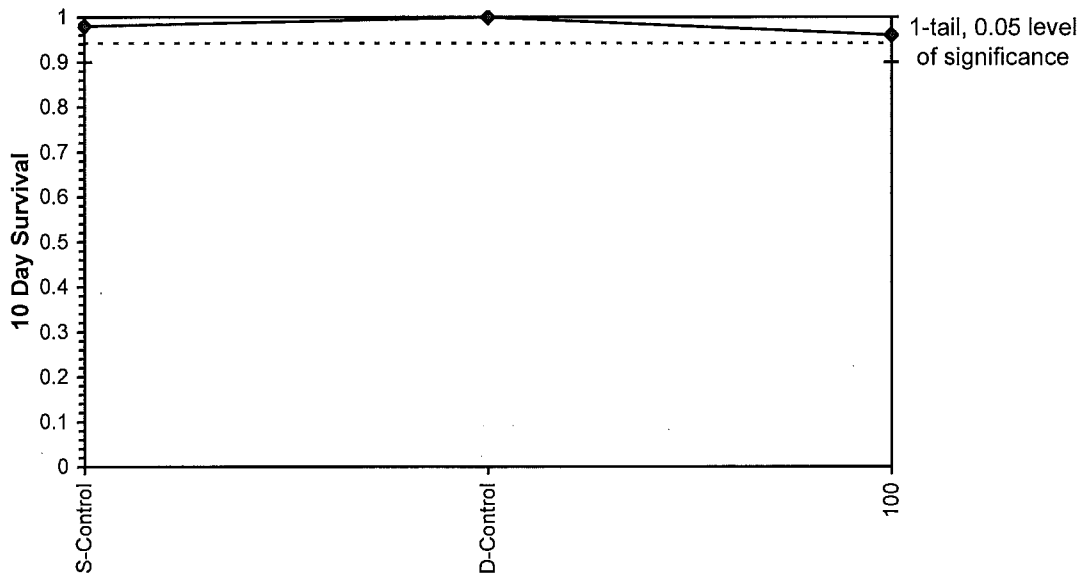
| | | |
|------------------------|----------------------------------|-----------------------------------|
| Start Date: 3/6/2015 | Test ID: 15030309A | Sample ID: CB&I |
| End Date: 3/16/2015 | Lab ID: 15030309 | Sample Type: LH-19 |
| Sample Date: 2/26/2015 | Protocol: E133792-ASTM E 1367-92 | Test Species: MY-Mysidopsis bahia |
| Comments: | [A] EPA-823-B-98-004 | MSE 3-24-15 |

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 |
| D-Control | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 100 | 1.00 | 1.00 | 1.00 | 0.90 | 0.90 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.98 | 0.9800 | 1.3794 | 1.2490 | 1.4120 | 5 | 5 | | | |
| D-Control | 1.00 | 1.0000 | 1.4120 | 1.4120 | 1.4120 | 0 | 5 | * | | |
| 100 | 0.96 | 0.9600 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | 1.633 | 2.132 | 0.0851 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution (p > 0.01) | 0.81451 | 0.781 | -0.6847 | -0.2143 | | |
| Equality of variance cannot be confirmed | | | | | | |
| The control means are not significantly different (p = 0.35) | 1 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Heteroscedastic t Test indicates no significant differences | 0.03331 | 0.03416 | 0.01062 | 0.00398 | 0.14111 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

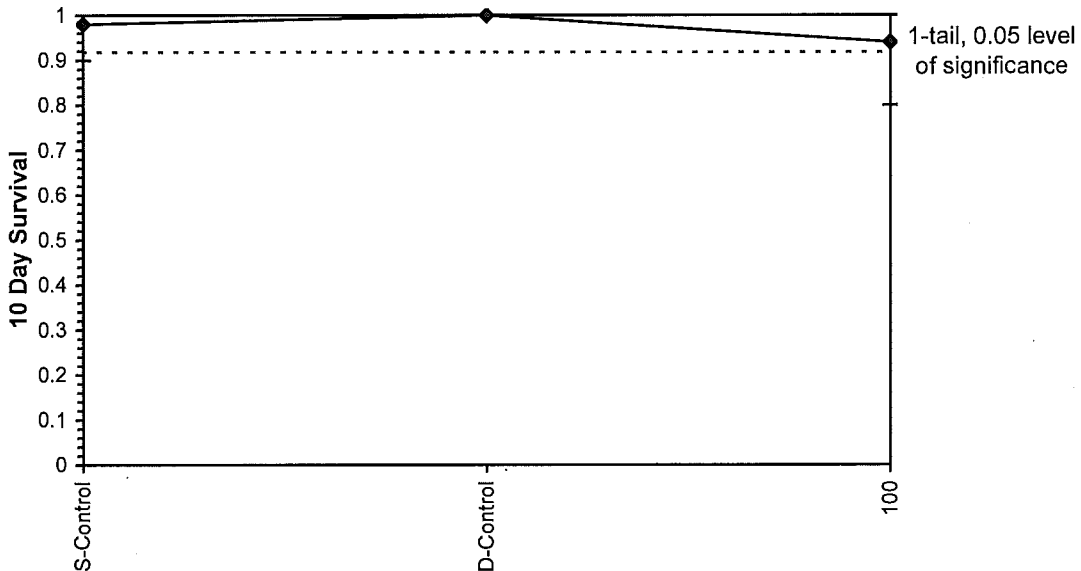
Start Date: 3/6/2015 Test ID: 15030310A Sample ID: CB&I
 End Date: 3/16/2015 Lab ID: 15030310 Sample Type: LH-20
 Sample Date: 2/26/2015 Protocol: ~~E133792-ASTM E 1367-92~~ Test Species: MY-Mysidopsis bahia
 Comments: [A] EPA-823-B-98-004

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 |
| D-Control | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 100 | 0.80 | 1.00 | 0.90 | 1.00 | 1.00 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.98 | 0.9800 | 1.3794 | 1.2490 | 1.4120 | 5 | 5 | | | |
| D-Control | 1.00 | 1.0000 | 1.4120 | 1.4120 | 1.4120 | 0 | 5 | * | | |
| 100 | 0.94 | 0.9400 | 1.3184 | 1.1071 | 1.4120 | 10 | 5 | 1.521 | 2.132 | 0.1312 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.81629 | 0.781 | -1.3155 | 2.58603 | | |
| Equality of variance cannot be confirmed | | | | | | |
| The control means are not significantly different ($p = 0.35$) | 1 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Heteroscedastic t Test indicates no significant differences | 0.05675 | 0.0582 | 0.02189 | 0.00947 | 0.16686 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

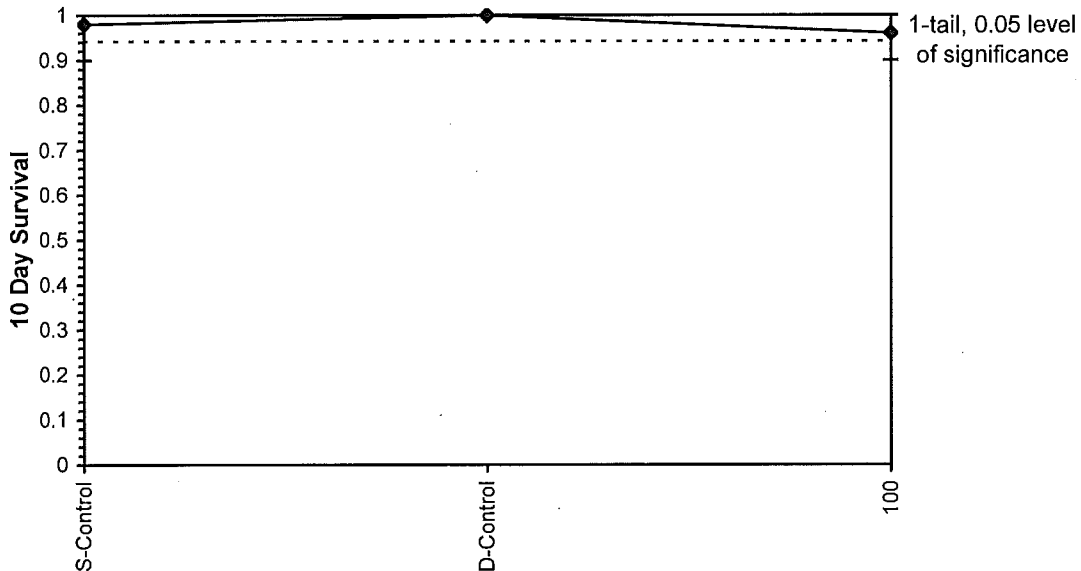
| | | |
|------------------------|----------------------------------|-----------------------------------|
| Start Date: 3/6/2015 | Test ID: 15030311A | Sample ID: CB&I |
| End Date: 3/16/2015 | Lab ID: 15030311 | Sample Type: LH-21 |
| Sample Date: 2/26/2015 | Protocol: E133792-ASTM E 1367-92 | Test Species: MY-Mysidopsis bahia |
| Comments: | [A] EPA-823-B-98-004 | |

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 |
| D-Control | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 100 | 1.00 | 0.90 | 0.90 | 1.00 | 1.00 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.98 | 0.9800 | 1.3794 | 1.2490 | 1.4120 | 5 | 5 | | | |
| D-Control | 1.00 | 1.0000 | 1.4120 | 1.4120 | 1.4120 | 0 | 5 | * | | |
| 100 | 0.96 | 0.9600 | 1.3468 | 1.2490 | 1.4120 | 7 | 5 | 1.633 | 2.132 | 0.0851 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.81451 | 0.781 | -0.6847 | -0.2143 | | |
| Equality of variance cannot be confirmed | | | | | | |
| The control means are not significantly different ($p = 0.35$) | 1 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Heteroscedastic t Test indicates no significant differences | 0.03331 | 0.03416 | 0.01062 | 0.00398 | 0.14111 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

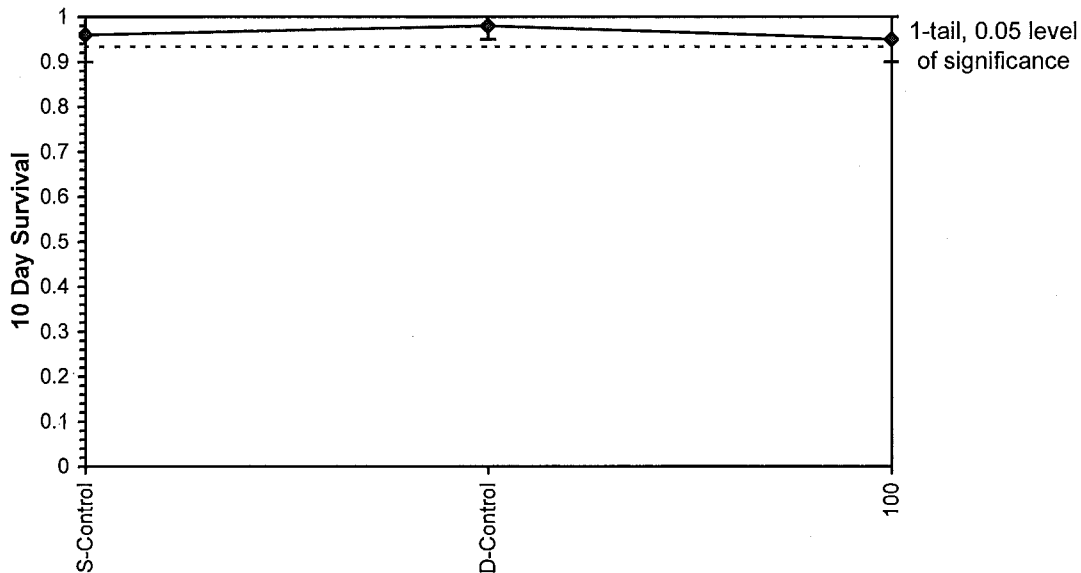
| | | |
|------------------------|----------------------------------|---------------------------------------|
| Start Date: 3/6/2015 | Test ID: 15030309L | Sample ID: CB&I |
| End Date: 3/16/2015 | Lab ID: 15030309 | Sample Type: LH-19 |
| Sample Date: 2/26/2015 | Protocol: E133792-ASTM E 1367-92 | Test Species: Leptocheirus plumulosus |
| Comments: | [A] EPA-823-B-98-004 | |

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.95 | 0.95 | 0.90 | 1.00 | 1.00 |
| D-Control | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| 100 | 0.90 | 1.00 | 0.90 | 1.00 | 0.95 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed | |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|----------|--------|
| | | | Mean | Min | Max | CV% | | | Critical | MSD |
| S-Control | 0.96 | 0.9796 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | | | |
| D-Control | 0.98 | 1.0000 | 1.4134 | 1.3453 | 1.4588 | 4 | 5 | * | | |
| 100 | 0.95 | 0.9694 | 1.3522 | 1.2490 | 1.4588 | 8 | 5 | 1.122 | 1.860 | 0.1014 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|---------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution (p > 0.01) | 0.88644 | 0.781 | -0.0319 | -1.6417 | | |
| F-Test indicates equal variances (p = 0.33) | 2.85003 | 23.1545 | | | | |
| The control means are not significantly different (p = 0.41) | 0.86475 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences | 0.04094 | 0.04197 | 0.00936 | 0.00744 | 0.29443 | 1, 8 |
| Treatments vs D-Control | | | | | | |

Dose-Response Plot



Acute-10-Day Survival

| | | |
|------------------------|----------------------------------|---------------------------------------|
| Start Date: 3/6/2015 | Test ID: 15030310L | Sample ID: CB&I |
| End Date: 3/16/2015 | Lab ID: 15030310 | Sample Type: LH-20 |
| Sample Date: 2/26/2015 | Protocol: E133702-ASTM E 1367-02 | Test Species: Leptocheirus plumulosus |
| Comments: | [A] EPA-823-B-98-004 | |

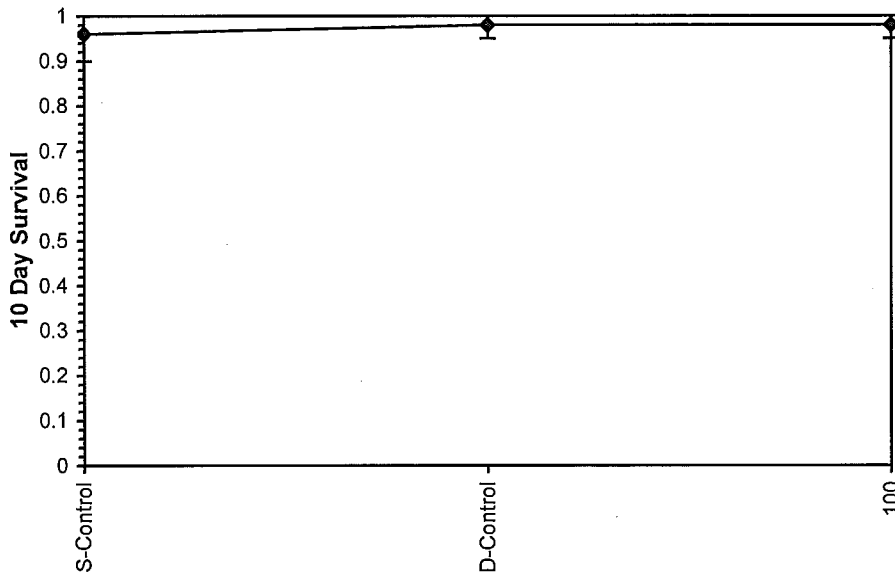
| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.95 | 0.95 | 0.90 | 1.00 | 1.00 |
| D-Control | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| 100 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 |

| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | Rank Sum | 1-Tailed Critical |
|-----------|------|--------|-------------------------------|--------|--------|-----|----------|-------------------|
| | | | Mean | Min | Max | CV% | | |
| S-Control | 0.96 | 0.9796 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | |
| D-Control | 0.98 | 1.0000 | 1.4134 | 1.3453 | 1.4588 | 4 | 5 | * |
| 100 | 0.98 | 1.0000 | 1.4134 | 1.3453 | 1.4588 | 4 | 5 | 27.50 19.00 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt |
|---|-----------|----------|---------|---------|
| Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01) | 0.64015 | 0.781 | -0.4841 | -2.2768 |
| F-Test indicates equal variances (p = 1.00) | 1 | 23.1545 | | |
| The control means are not significantly different (p = 0.41) | 0.86475 | 2.306 | | |

Hypothesis Test (1-tail, 0.05)
 Wilcoxon Two-Sample Test indicates no significant differences
 Treatments vs D-Control

Dose-Response Plot



Acute-10-Day Survival

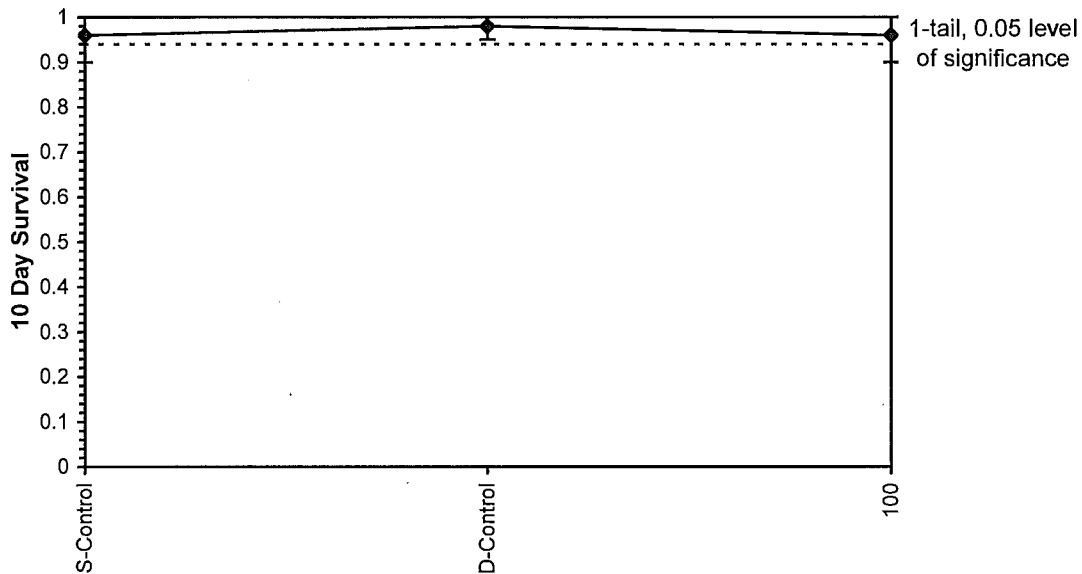
Start Date: 3/6/2015 Test ID: 15030311L Sample ID: CB&I
 End Date: 3/16/2015 Lab ID: 15030311 Sample Type: LH-21
 Sample Date: 2/26/2015 Protocol: ~~E133792-ASTM E 1367-92~~ Test Species: Leptocheirus plumulosus
 Comments: [A] MSE 3-24-15 EPA-823-B-98-004

| Conc-% | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| S-Control | 0.95 | 0.95 | 0.90 | 1.00 | 1.00 |
| D-Control | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| 100 | 1.00 | 0.95 | 1.00 | 0.90 | 0.95 |

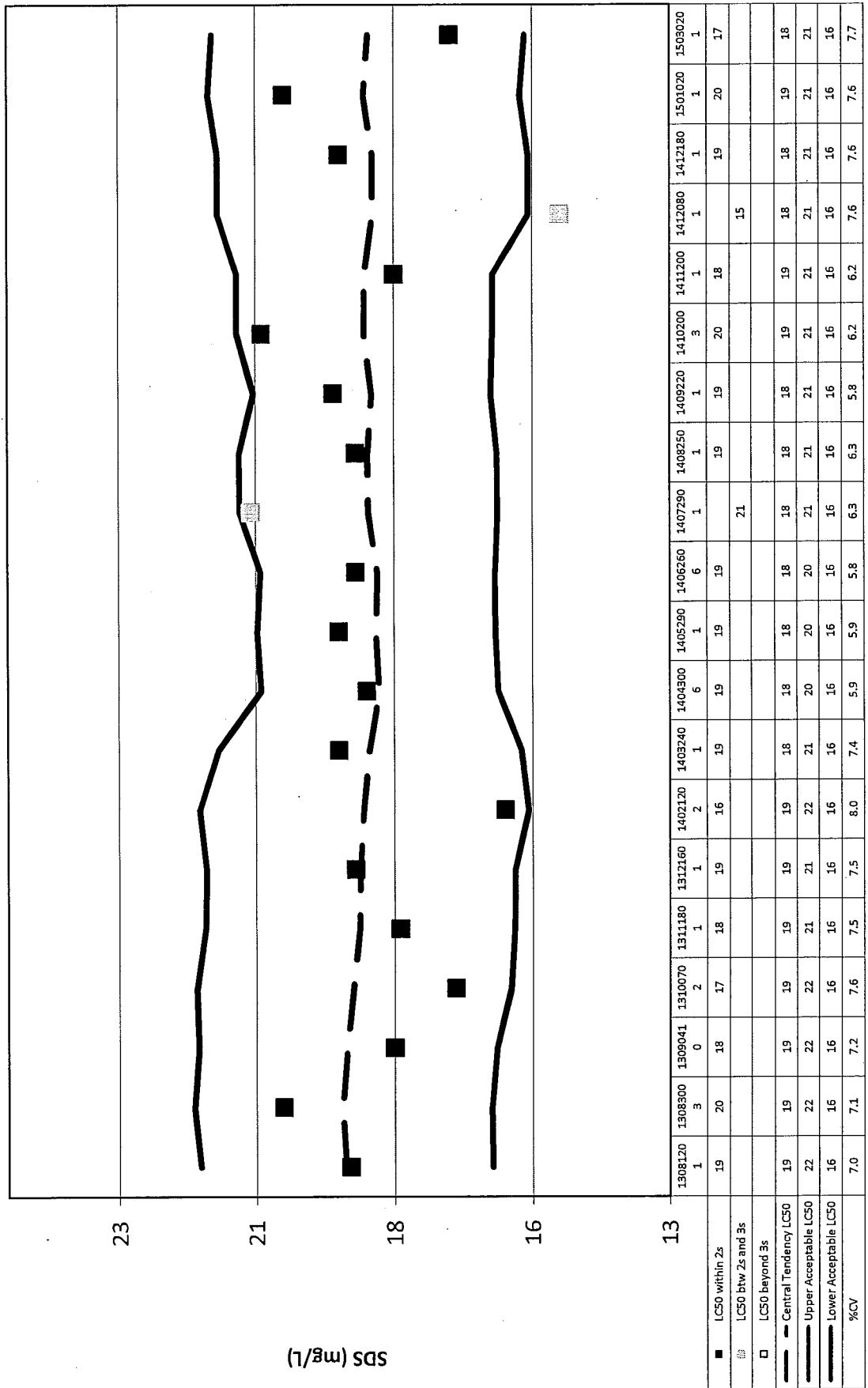
| Conc-% | Mean | N-Mean | Transform: Arcsin Square Root | | | | N | t-Stat | 1-Tailed Critical | MSD |
|-----------|------|--------|-------------------------------|--------|--------|-----|---|--------|-------------------|--------|
| | | | Mean | Min | Max | CV% | | | | |
| S-Control | 0.96 | 0.9796 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | | | |
| D-Control | 0.98 | 1.0000 | 1.4134 | 1.3453 | 1.4588 | 4 | 5 | * | | |
| 100 | 0.96 | 0.9796 | 1.3714 | 1.2490 | 1.4588 | 6 | 5 | 0.865 | 1.860 | 0.0902 |

| Auxiliary Tests | Statistic | Critical | Skew | Kurt | | |
|--|-----------|----------|--------|---------|---------|------|
| Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$) | 0.9143 | 0.781 | -0.326 | -1.1665 | | |
| F-Test indicates equal variances ($p = 0.51$) | 2.04489 | 23.1545 | | | | |
| The control means are not significantly different ($p = 0.41$) | 0.86475 | 2.306 | | | | |
| Hypothesis Test (1-tail, 0.05) | MSDu | MSDp | MSB | MSE | F-Prob | df |
| Homoscedastic t Test indicates no significant differences Treatments vs D-Control | 0.03549 | 0.03639 | 0.0044 | 0.00588 | 0.41235 | 1, 8 |

Dose-Response Plot

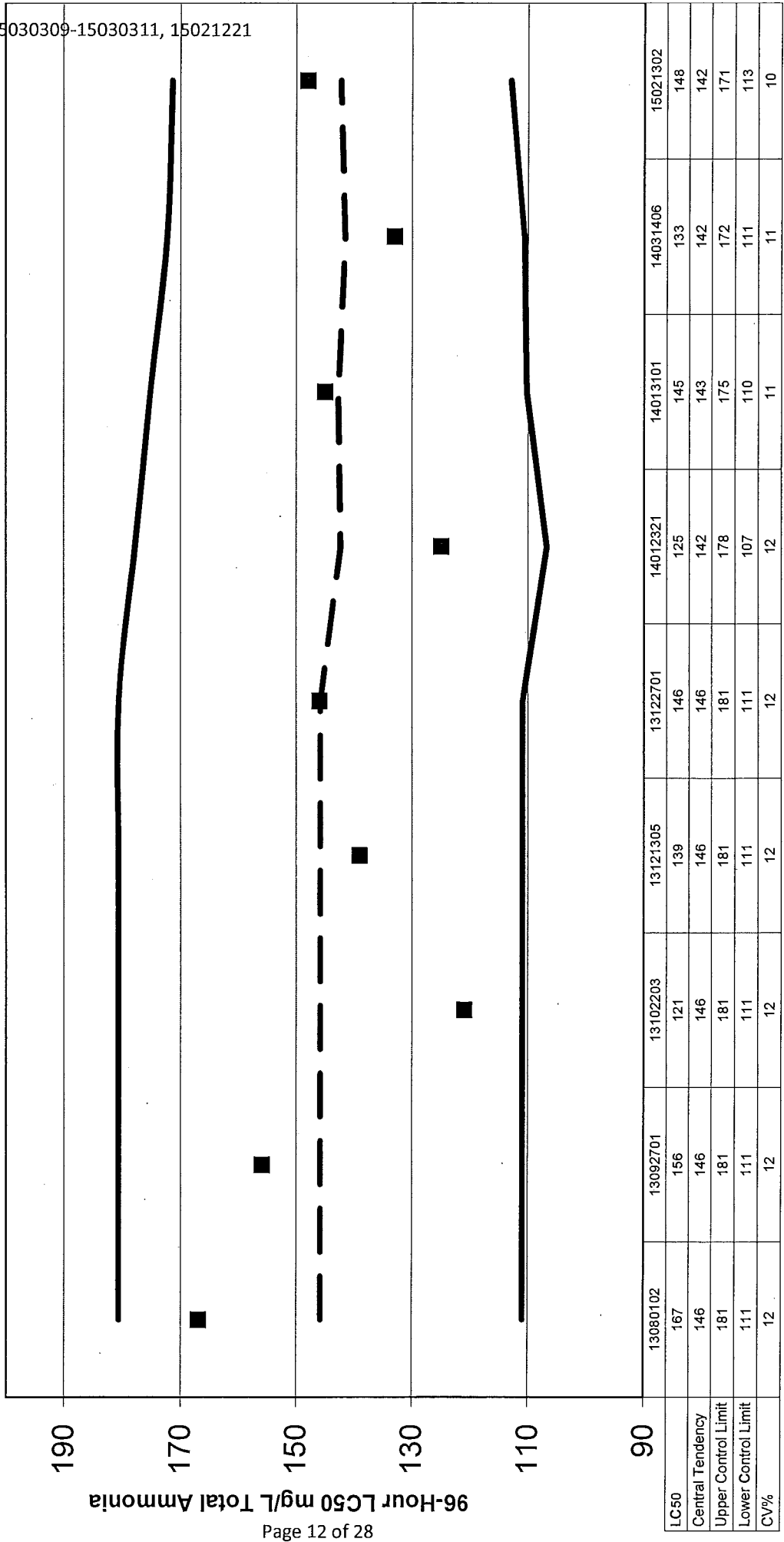


CK Associates
Sodium Dodecyl Sulfate Reference Toxicant Control Chart
96-Hour LC₅₀ for *Mysidopsis bahia*



C-K Associates, LLC
Reference - Water Column 96-Hour Acute Control Chart
Leptocheirus plumulosus
Total Ammonia mg/L

Test ID No.: 15030309-15030311, 15021221



LC50
 Central Tendency
 Upper Control Limit
 Lower Control Limit
 CV%



Survival Data for 10-Day Whole Sediment Toxicity Test
Mysidopsis bahia

Client: CB & I

Template: 2

Sample ID: LH Area

Organism Age: 5 d.o.

QC Review:

Test ID: 15030309-11

Organism Batch: 9047

| |
|-----------------|
| Exposure Period |
| Day |
| Date |
| Time |
| Technician |

| |
|-----------------|
| Test Initiation |
| Fri |
| 3.16.15 |
| 1150 |
| ECH |

| |
|---|
| Observations Made at the End of 10-Day Exposure Period: |
| Mon |
| 3.16.15 |
| 1330 |
| 662 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| Lab Control | 1 |
| | 2 |
| (Culture Sediment) | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 9 |
| 10 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| LH-BG REF Sediment | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| LH-19 | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 10 |
| 10 |

| |
|--------------------------|
| Number of Live Organisms |
| 10 |
| 10 |
| 10 |
| 9 |
| 9 |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID: LH Area

Test ID: 15030309-11

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 10 | 8 |
| | 2 | 10 | 10 |
| LH-20 | 3 | 10 | 9 |
| | 4 | 10 | 10 |
| | 5 | 10 | 10 |

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 10 | 10 |
| | 2 | 10 | 9 |
| LH-21 | 3 | 10 | 9 |
| | 4 | 10 | 10 |
| | 5 | 10 | 10 |

| Technician Observations | | | |
|-------------------------|------|----------|--------------|
| Date | Time | Initials | Observations |
| | | | |
| | | | |
| | | | |
| | | | |



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15030309-11

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

Control - Culture Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.9 | 19 | 8.2 | 7.1 | 2.00 | 03/06/15 | 1150 | ECH |
| 1 | | 26.1 | 20 | 8.1 | 6.3 | 3.51 | 03/07/15 | 1000 | NAG |
| 2 | | 26.3 | 21 | 7.9 | 6.0 | 3.24 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 21 | 8.1 | 6.8 | 1.77 | 03/09/15 | 0940 | ECH |
| 4 | | 26.4 | 22 | 8.0 | 6.3 | 0.37 | 03/10/15 | 1340 | CJT |
| 5 | yes | 25.7 | 22 | 8.1 | 6.4 | 0.18 | 03/11/15 | 1000 | ECH |
| 6 | yes | 25.7 | 22 | 7.9 | 6.3 | 0.37 | 03/12/15 | 0840 | CJT |
| 7 | yes | 25.6 | 21 | 8.0 | 6.5 | 0.28 | 03/13/15 | 1000 | ECH |
| 8 | | 25.3 | 21 | 8.0 | 6.6 | 0.29 | 03/14/15 | 0930 | ECH |
| 9 | | 25.0 | 21 | 8.0 | 6.7 | 0.44 | 03/15/15 | 0930 | ECH |
| 10 | Terminate | 25.3 | 21 | 7.8 | 6.3 | 0.31 | 03/16/15 | 1315 | NAG |

LH-BG Reference Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.9 | 19 | 8.2 | 7.0 | 1.11 | 03/06/15 | 1150 | ECH |
| 1 | | 26.1 | 21 | 8.1 | 6.3 | 1.09 | 03/07/15 | 1000 | NAG |
| 2 | | 26.3 | 20 | 8.2 | 6.5 | 2.22 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 20 | 8.3 | 6.9 | 2.36 | 03/09/15 | 0940 | ECH |
| 4 | | 26.4 | 21 | 8.3 | 6.9 | 2.01 | 03/10/15 | 1340 | CJT |
| 5 | yes | 25.7 | 20 | 8.2 | 6.7 | 1.76 | 03/11/15 | 1000 | ECH |
| 6 | yes | 25.7 | 21 | 8.2 | 6.4 | 1.14 | 03/12/15 | 0840 | CJT |
| 7 | yes | 25.6 | 21 | 8.3 | 6.6 | 1.35 | 03/13/15 | 1000 | ECH |
| 8 | | 25.3 | 22 | 8.2 | 6.7 | 1.64 | 03/14/15 | 0930 | ECH |
| 9 | | 25.0 | 21 | 8.2 | 6.7 | 1.50 | 03/15/15 | 0930 | ECH |
| 10 | Terminate | 25.3 | 20 | 8.2 | 6.4 | 0.91 | 03/16/15 | 1315 | NAG |

Renewal: Conducted every 48 hours AS noted MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15030309-11

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

LH-19

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.5 | 20 | 8.3 | 7.3 | 0.10 | 03/06/15 | 1150 | ECH |
| 1 | | 26.1 | 21 | 8.2 | 6.2 | 1.23 | 03/07/15 | 1000 | NAG |
| 2 | | 26.3 | 21 | 8.2 | 6.3 | 1.77 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 20 | 8.3 | 6.7 | 2.22 | 03/09/15 | 0940 | ECH |
| 4 | | 26.4 | 20 | 8.3 | 6.4 | 1.77 | 03/10/15 | 1340 | CJT |
| 5 | yes | 25.7 | 21 | 8.2 | 6.7 | 1.32 | 03/11/15 | 1000 | ECH |
| 6 | | 25.7 | 21 | 8.2 | 6.7 | 1.50 | 03/12/15 | 0840 | CJT |
| 7 | yes | 25.1 | 21 | 8.1 | 6.4 | 0.28 | 03/13/15 | 1000 | ECH |
| 8 | | 25.3 | 22 | 8.0 | 6.7 | 0.45 | 03/14/15 | 0930 | ECH |
| 9 | | 25.0 | 21 | 8.1 | 6.8 | 0.45 | 03/15/15 | 0930 | ECH |
| 10 | Terminate | 25.3 | 21 | 8.2 | 6.8 | 0.22 | 03/16/15 | 1315 | NAG |

LH-20

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.5 | 20 | 8.4 | 7.3 | 0.12 | 03/06/15 | 1150 | ECH |
| 1 | | 26.1 | 21 | 8.3 | 6.7 | 1.56 | 03/07/15 | 1000 | NAG |
| 2 | | 26.3 | 21 | 8.3 | 6.5 | 1.92 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 21 | 8.3 | 6.5 | 1.50 | 03/09/15 | 0940 | ECH |
| 4 | | 26.4 | 20 | 8.2 | 6.6 | 0.78 | 03/10/15 | 1340 | CJT |
| 5 | yes | 25.7 | 21 | 8.3 | 6.7 | 1.65 | 03/11/15 | 1000 | ECH |
| 6 | | 25.7 | 21 | 8.2 | 6.4 | 0.41 | 03/12/15 | 0840 | CJT |
| 7 | yes | 25.1 | 21 | 8.1 | 6.6 | 1.00 | 03/13/15 | 1000 | ECH |
| 8 | | 25.3 | 20 | 8.2 | 6.4 | 1.78 | 03/14/15 | 0930 | ECH |
| 9 | | 25.0 | 21 | 8.2 | 6.5 | 1.12 | 03/15/15 | 0930 | ECH |
| 10 | Terminate | 25.3 | 21 | 8.3 | 6.6 | 0.44 | 03/16/15 | 1315 | NAG |

Renewal: Conducted every 48 hours AS noted MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

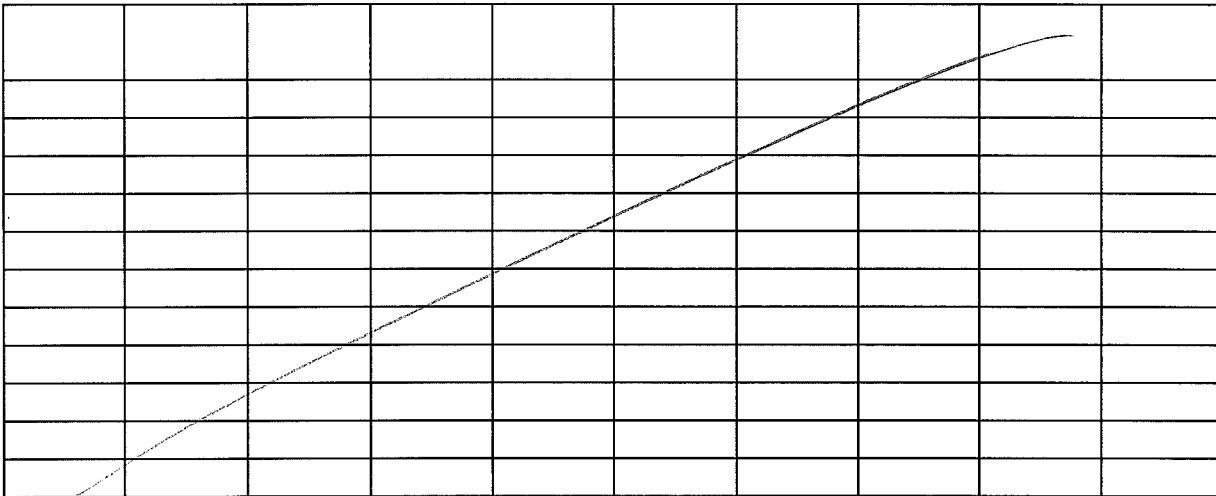
Sample ID LH Area

Lab ID: 15030309-11

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

LH-21

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.5 | 21 | 8.3 | 7.2 | 0.24 | 03/06/15 | 1150 | ECH |
| 1 | | 26.1 | 21 | 8.3 | 6.0 | 1.72 | 03/07/15 | 1000 | NAG |
| 2 | | 26.3 | 21 | 8.3 | 6.4 | 1.68 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 22 | 8.3 | 6.3 | 2.28 | 03/09/15 | 0940 | ECH |
| 4 | | 26.4 | 20 | 8.3 | 6.4 | 1.50 | 03/10/15 | 1340 | CJT |
| 5 | yes | 25.7 | 20 | 8.2 | 6.3 | 2.10 | 03/11/15 | 1000 | ECH |
| 6 | | 25.7 | 21 | 8.3 | 5.6 | 1.34 | 03/12/15 | 0840 | CJT |
| 7 | yes | 25.6 | 21 | 8.2 | 6.0 | 1.83 | 03/13/15 | 1000 | ECH |
| 8 | | 25.3 | 21 | 8.2 | 6.6 | 1.50 | 03/14/15 | 0930 | ECH |
| 9 | | 25.0 | 21 | 8.2 | 6.4 | 1.30 | 03/15/15 | 0930 | ECH |
| 10 | Terminate | 25.3 | 21 | 8.3 | 6.2 | 1.65 | 03/16/15 | 1315 | NAG |



Renewal: Conducted ~~every 48 hours~~ AS NOTED MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Daily Instrument Usage Log
Mysidopsis bahia

Client: CB & I

Sample ID LH Area

Lab ID: 15030309-11

Meter Identification:

| Day | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|--------------------|------------|-------------------|------------|----------------|-------------------|----------|------|---------|
| T-14-2 0 | T-14-1 | M-15-1 | | | DR-890 | 03/06/15 | 1150 | EZH |
| T-14-2 1 | T-14-1 | M-003 | | | DR-890 | 03/07/15 | 1000 | NAG |
| T-14-2 2 | T-14-1 | M-003 | | | DR-890 | 03/08/15 | 1030 | NAG |
| T-14-2 3 | T-14-1 | M-15-1 | | | DR-890 | 03/09/15 | 0940 | EZH |
| EZH 3.9.15 4 | T-14-2 | M-15-1 | | | DR-890 | 03/10/15 | 1340 | CT |
| 5 | T-14-2 | M-003 | | | DR-890 | 03/11/15 | 1000 | EZH |
| 6 | T-14-2 | M-15-1 | | | DR-890 | 03/12/15 | 0840 | CT |
| 7 | T-14-2 | M-003 | | | DR-890 | 03/13/15 | 1000 | EZH |
| 8 | T-14-2 | M-003 | | | DR-890 | 03/14/15 | 0930 | EZH |
| 9 | T-14-2 | M-003 | | | DR-890 | 03/15/15 | 0930 | EZH |
| 10 | T-14-2 | M-15-1 | | | DR-890 | 03/16/15 | 1315 | NAG |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Template: 1

Sample ID: LH Area

Organism Age: 3-5mm

QC Review: 662

Test ID: 15030309-11

Organism Batch: 05477

| |
|-----------------|
| Exposure Period |
| Day |
| Date |
| Time |
| Technician |

| |
|-----------------|
| Test Initiation |
| Fri |
| 3.16.15 |
| 1215 |
| EZH |

| |
|---|
| Observations Made at the End of 10-Day Exposure Period: |
| Mon |
| 3.16.15 |
| 1345 |
| 662 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| Lab Control | 1 |
| | 2 |
| (Culture Sediment) | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 19 |
| 19 |
| 18 |
| 20 |
| 20 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| LH-BG REF Sediment | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 19 |
| 19 |
| 20 |
| 20 |

| Sediment Conc. (%) | Rep |
|--------------------|-----|
| 100% | 1 |
| | 2 |
| LH-19 | 3 |
| | 4 |
| | 5 |

| |
|--------------------------|
| Number of Live Organisms |
| 20 |
| 20 |
| 20 |
| 20 |
| 20 |

| |
|--------------------------|
| Number of Live Organisms |
| 18 |
| 20 |
| 18 |
| 20 |
| 19 |



Survival Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID: LH Area

Test ID: 15030309-11

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 20 | 20 |
| | 2 | 20 | 20 |
| LH-20 | 3 | 20 | 20 |
| | 4 | 20 | 19 |
| | 5 | 20 | 19 |

| Sediment Conc. (%) | Rep | Number of Live Organisms | Number of Live Organisms |
|--------------------|-----|--------------------------|--------------------------|
| 100% | 1 | 20 | 20 |
| | 2 | 20 | 19 |
| LH-21 | 3 | 20 | 20 |
| | 4 | 20 | 18 |
| | 5 | 20 | 19 |

| Technician Observations | | | |
|-------------------------|------|----------|--------------|
| Date | Time | Initials | Observations |
| | | | |
| | | | |
| | | | |
| | | | |



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15030309-11

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

Control - Culture Sediment

CST 3/10/15 CST 3/10/15 CST 3/10/15

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.5 | 19 | 8.3 | 7.4 | 2.00 | 03/06/15 | 1215 | EZH |
| 1 | | 26.1 | 19 | 8.3 | 6.3 | 4.14 | 03/07/15 | 1010 | NAG |
| 2 | | 26.3 | 19 | 8.3 | 6.3 | 3.13 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 20 | 8.2 | 6.9 | 3.09 | 03/09/15 | 1015 | EZH |
| 4 | | 26.4 | 22 | 8.01 | 6.35 | 1.23 | 03/10/15 | 1340 | CST |
| 5 | yes | 25.7 | 21 | 7.8 | 6.3 | 0.27 | 03/11/15 | 1000 | EZH |
| 6 | | 25.7 | 21 | 8.1 | 6.7 | 0.44 | 03/12/15 | 0840 | CST |
| 7 | WPS | 25.10 | 21 | 7.8 | 6.6 | 0.14 | 03/13/15 | 1000 | EZH |
| 8 | | 25.3 | 22 | 7.7 | 6.7 | 0.20 | 03/14/15 | 0930 | EZH |
| 9 | | 25.0 | 21 | 7.8 | 7.0 | 0.14 | 03/15/15 | 0930 | EZH |
| 10 | Terminate | 25.3 | 21 | 8.1 | 6.7 | 0.09 | 03/16/15 | 1325 | NAG |

LH-BG Reference Sediment

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|-----------------------|
| 0 | Initiate | 24.5 | 19 | 8.3 | 7.3 | 1.67 | 03/06/15 | 1215 | EZH EZH |
| 1 | | 26.1 | 19 | 8.3 | 6.3 | 4.27 | 03/07/15 | 1010 | NAG |
| 2 | | 26.3 | 19 | 8.2 | 6.4 | 2.31 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 20 | 8.2 | 6.9 | 2.04 | 03/09/15 | 1015 | EZH |
| 4 | | 26.4 | 21 | 8.3 | 7.0 | 0.96 | 03/10/15 | 1340 | CST |
| 5 | yes | 25.7 | 21 | 8.3 | 6.6 | 1.21 | 03/11/15 | 1000 | EZH |
| 6 | | 25.7 | 21 | 8.2 | 6.9 | 2.06 | 03/12/15 | 0840 | CST |
| 7 | yes | 25.6 | 21 | 8.1 | 6.4 | 1.46 | 03/13/15 | 1000 | EZH |
| 8 | | 25.3 | 21 | 8.1 | 6.5 | 0.74 | 03/14/15 | 0930 | EZH |
| 9 | | 25.0 | 21 | 8.1 | 6.3 | 0.88 | 03/15/15 | 0930 | EZH |
| 10 | Terminate | 25.3 | 22 | 8.0 | 6.7 | 0.63 | 03/16/15 | 1325 | NAG |

EZH 3.6.15

Renewal: Conducted every 48 hours AS noted MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15030309-11

DATA SHEET FOR 10-DAY

Leptocheirus plumulosus

STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

LH-19

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.5 | 19 | 8.3 | 7.5 | 0.10 | 03/06/15 | 1215 | EZH |
| 1 | | 26.1 | 20 | 8.3 | 6.2 | 0.37 | 03/07/15 | 1010 | NAG |
| 2 | | 26.3 | 20 | 8.3 | 6.1 | 0.81 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 21 | 8.3 | 7.1 | 0.99 | 03/09/15 | 1015 | EZH |
| 4 | | 26.4 | 21 | 8.3 | 6.7 | 0.63 | 03/10/15 | 1340 | CJT |
| 5 | yes | 25.7 | 21 | 8.1 | 6.7 | 1.02 | 03/11/15 | 1000 | EZH |
| 6 | | 25.7 | 21 | 8.3 | 6.8 | 0.48 | 03/12/15 | 0840 | CJT |
| 7 | yes | 25.6 | 21 | 8.0 | 6.9 | 0.60 | 03/13/15 | 1000 | EZH |
| 8 | | 25.3 | 22 | 7.9 | 6.9 | 0.33 | 03/14/15 | 0930 | EZH |
| 9 | | 25.0 | 21 | 7.9 | 7.4 | 0.33 | 03/15/15 | 0930 | EZH |
| 10 | Terminate | 25.3 | 22 | 8.2 | 6.7 | 0.10 | 03/16/15 | 1325 | NAG |

LH-20

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.5 | 20 | 8.3 | 7.7 | 0.12 | 03/06/15 | 1215 | EZH |
| 1 | | 26.1 | 21 | 8.3 | 6.3 | 0.48 | 03/07/15 | 1010 | NAG |
| 2 | | 26.3 | 22 | 8.4 | 6.0 | 0.75 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 23 | 8.5 | 7.1 | 1.02 | 03/09/15 | 1015 | EZH |
| 4 | | 26.4 | 22 | 8.4 | 6.6 | 0.66 | 03/10/15 | 1340 | CJT |
| 5 | yes | 25.7 | 22 | 8.2 | 6.8 | 0.67 | 03/11/15 | 1000 | EZH |
| 6 | | 25.7 | 21 | 8.3 | 6.9 | 0.33 | 03/12/15 | 0840 | CJT |
| 7 | yes | 25.6 | 22 | 8.1 | 7.0 | 0.23 | 03/13/15 | 1000 | EZH |
| 8 | | 25.3 | 22 | 8.0 | 7.1 | 6.17 | 03/14/15 | 0930 | EZH |
| 9 | | 25.0 | 21 | 8.0 | 7.4 | 0.16 | 03/15/15 | 0930 | EZH |
| 10 | Terminate | 25.3 | 22 | 8.3 | 6.9 | 0.08 | 03/16/15 | 1325 | NAG |

Renewal: Conducted every 48 hours as noted MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Water Quality Data for 10-Day Whole Sediment Toxicity Test
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

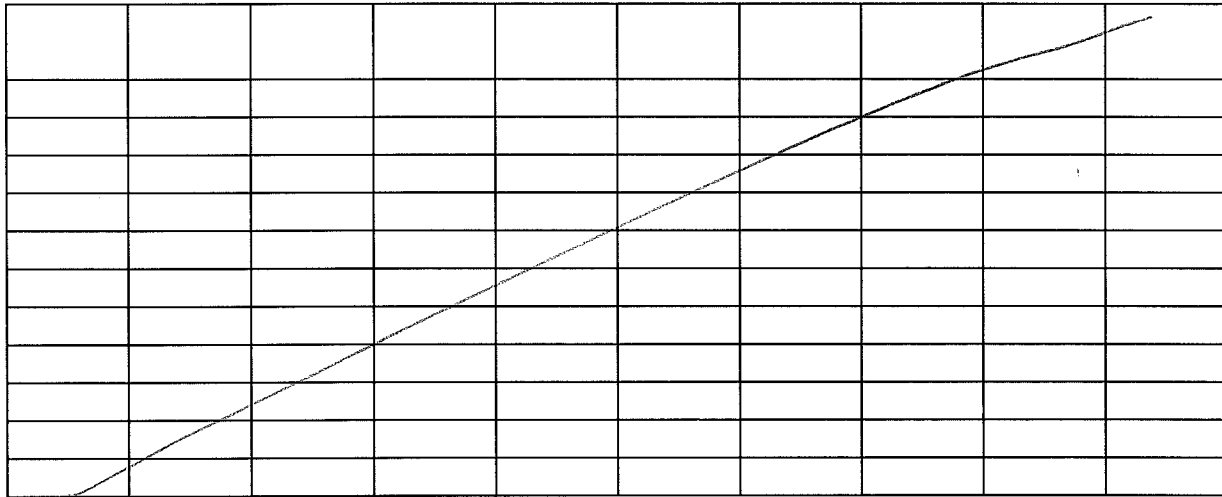
Lab ID: 15030309-11

DATA SHEET FOR 10-DAY
Leptocheirus plumulosus
STATIC WHOLE EFFLUENT SEDIMENT TOXICITY TEST

LH-21

| Day | Water Renewal | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|-----|---------------|---------|----------------|---------|-------------|----------------|----------|------|---------|
| 0 | Initiate | 24.5 | 20 | 8.3 | 7.0 | 0.24 | 03/06/15 | 1215 | ECH |
| 1 | | 26.1 | 21 | 8.3 | 6.3 | 0.52 | 03/07/15 | 1010 | NAG |
| 2 | yes | 26.3 | 21 | 8.3 | 6.0 | 0.90 | 03/08/15 | 1030 | NAG |
| 3 | yes | 24.9 | 22 | 8.4 | 7.1 | 1.35 | 03/09/15 | 1015 | ECH |
| 4 | yes | 26.4 | 21 | 8.4 | 6.8 | 1.08 | 03/10/15 | 1340 | CST |
| 5 | yes | 25.7 | 22 | 8.2 | 6.8 | 1.36 | 03/11/15 | 1006 | ECH |
| 6 | | 25.7 | 21 | 8.3 | 6.7 | 0.86 | 03/12/15 | 0840 | CST |
| 7 | yes | 25.10 | 21 | 8.2 | 6.9 | 1.30 | 03/13/15 | 1000 | ECH |
| 8 | | 25.3 | 22 | 8.0 | 6.9 | 0.86 | 03/14/15 | 0930 | ECH |
| 9 | | 25.0 | 21 | 8.1 | 7.3 | 0.50 | 03/15/15 | 0930 | ECH |
| 10 | Terminate | 25.3 | 22 | 8.3 | 6.7 | 0.13 | 03/16/15 | 1325 | NAG |

ECH
3.11.15
ECH
3.11.15



Renewal: Conducted every 48 hours AS noted MSE 3-24-15

Feeding: Organisms were not fed during the test exposure



Daily Instrument Usage Log
Leptocheirus plumulosus

Client: CB & I

Sample ID LH Area

Lab ID: 15030309-11

Meter Identification:

| Day | Temp °C | Salinity (ppt) | pH (SU) | D.O. (mg/L) | Ammonia (mg/L) | Date | Time | Analyst |
|--------------------|------------|-------------------|------------|----------------|-------------------|----------|------|---------|
| F-14-2 0 | T-14-1 | M-15-1 | | | DR-890 | 03/06/15 | 1215 | EZH |
| F-14-2 1 | T-14-1 | M-003 | | | DR-890 | 03/07/15 | 1010 | NAG |
| F-14-2 2 | T-14-1 | M-003 | | | DR-890 | 03/08/15 | 1030 | NAG |
| F-14-2 3 | T-14-1 | M-15-1 | | | DR-890 | 03/09/15 | 1015 | EZH |
| EZH 3.9.15 4 | T-14-2 | M-15-1 | | | DR-890 | 03/10/15 | 1340 | CJT |
| 5 | T-14-2 | M-003 | | | DR-890 | 03/11/15 | 1000 | EZH |
| 6 | T-14-2 | M-15-1 | | | DR-890 | 03/12/15 | 0840 | CJT |
| 7 | T-14-2 | M-003 | | | DR-890 | 03/13/15 | 1000 | EZH |
| 8 | T-14-2 | M-003 | | | DR-890 | 03/14/15 | 0930 | EZH |
| 9 | T-14-2 | M-003 | | | DR-890 | 03/15/15 | 0930 | EZH |
| 10 | T-14-2 | M-15-1 | | | DR-890 | 03/16/15 | 1325 | NAG |

Site-spec.

Instruct.: Control sediment is lepto culture sediment. Overlying water is 20 ppt ASSW.

Note: All volumes are expressed in milliliters (mL)

Leptocheirus plumulosus

| Sediment Vol/Rep (mL) | Reps/Trt | Org/Rep | ASSW Vol/Rep (mL) |
|-----------------------|----------|---------|-------------------|
| 175 | 5 | 20 | 725 |

Mysidopsis bahia

| Sediment Vol/Rep (mL) | Reps/Trt | Org/Rep | ASSW Vol/Rep (mL) |
|-----------------------|----------|---------|-------------------|
| 50 | 5 | 10 | 150 |

| Conc. | Sediment (mL) | ASSW (mL) |
|-----------------------------|---------------|-----------|
| Lab control | 975 | 3625 |
| LH-BG Ref | 975 | 3625 |
| LH-19 | 975 | 3625 |
| LH-20 | 975 | 3625 |
| LH-21 | 975 | 3625 |
| Total ASSW for Test Renewal | | 18125 |

| Conc. | Sediment (mL) | ASSW (mL) |
|-----------------------------|---------------|-----------|
| Lab control | 250 | 750 |
| LH-BG Ref | 250 | 750 |
| LH-19 | 250 | 750 |
| LH-20 | 250 | 750 |
| LH-21 | 250 | 750 |
| Total ASSW for Test Renewal | | 3750 |

| | |
|-------------------|---------------------|
| Initiation Date: | Fri, March 06, 2015 |
| WQ Parameter Vol: | 100 mL |

Note: Initiation Date = Organism Loading (ASSW, test sample and control sediment are placed in the test chambers the day prior to organism loading.)

Test Preparation Documentation for the Beginning of 10-Day Exposure Period
(ASSW + Sediment)

| | |
|-------------------|-----------|
| Control Sediment | |
| Sediment Batch ID | 150212CUL |

| Field Sediments | LH-BG Ref | LH-19 | LH-20 | LH-21 |
|-----------------|-----------|----------|----------|----------|
| Sample ID | 15021221 | 15030309 | 15030310 | 15030311 |
| Collection Date | 1.28.15 | 2.26.15 | 2.26.15 | 2.26.15 |
| Collection Time | 1410 | 1050 | 1120 | 1315 |

| | |
|-----------------------|--------------------------|
| Date | Thursday, March 05, 2015 |
| Time | 0830 |
| Technician | 662 |
| Synthetic Water Batch | 2431 (Adjust to 20ppt) |



Water Quality Data

Client: CB & I

Sample ID: LH Area

Test ID: 15030309-11

Synthetic Water

| | Batch | Batch | Batch |
|---|-------|-------|-------|
| Parameter | 2431 | 2432 | |
| Dissolved Oxygen (mg/L O ₂) | 7.0 | 6.9 | |
| pH (SU) | 8.1 | 8.3 | |
| Salinity (ppt) | 20 | 20 | |

Test Sediment Preparation

| Sample | Sieved Yes/No (due to Indigenous organisms present) | Sieve Size | Analyst | Date | Time |
|-----------|---|------------|---------|--------|------|
| Reference | No | NA | GBZ | 3.5.15 | 0830 |
| LH-19 | No | ↓ | ↓ | ↓ | ↓ |
| LH-20 | No | ↓ | ↓ | ↓ | ↓ |
| LH-21 | No | ↓ | ↓ | ↓ | ↓ |

**CHAIN OF CUSTODY
AND
ANALYTICAL REQUEST RECORD**

| CLIENT: <u>CRA/CB&I</u> | | SAMPLED BY: | | DATE: <u>2/26/15</u> | | PRESERVATIVE | | ACUTE | | | | | | | | Lab Use Only | | | | | | | | | |
|---|----------------|---|--------|----------------------|-------------------|-------------------|--------------|--------------------|-----------------|-------------------|---------------------|--------------------|-----------------|---|---------------------|---|-----------------|-------------------|---------------------|----------------|------------|---------|--|------|--|
| SAMPLE IDENTIFICATION | DATE Start-End | TIME Start-End | MATRIX | NO. OF CONTAINERS | NO. OF CONTAINERS | MATRIX | PRESERVATIVE | <i>P. promelas</i> | <i>C. dubia</i> | <i>M. bairdii</i> | <i>M. beryllina</i> | <i>R. promelas</i> | <i>C. dubia</i> | <i>M. bairdii</i> | <i>M. beryllina</i> | <i>P. promelas</i> | <i>C. dubia</i> | <i>M. bairdii</i> | <i>M. beryllina</i> | TEMP°C (Rec'd) | C-K LAB ID | | | | |
| LH-19(0-6) | 1050 | 2/26/15 | Soil | 1 | 1 | Soil | — | X | | | | | | | | | | | | 1.3 | 15030309 | | | | |
| LH-20(0-6) | 1120 | ↓ | ↓ | ↓ | ↓ | ↓ | — | X | | | | | | | | | | | | 0.6 | 15030310 | | | | |
| LH-21(0-6) | 1315 | ↓ | ↓ | ↓ | ↓ | ↓ | — | X | | | | | | | | | | | | 0.7 | 15030311 | | | | |
| BD-15(0-6) [A] Do not test per G. Landry if CB&I email attached | 1600 | 2/26/15 | Soil | 1 | 1 | Soil | — | X | | | | | | | | | | | | 0.6 | | | | | |
| <p>Page 27 of 28</p> | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample | | COLOR | ODOR | SOLIDS | OTHER | C-K TEMP METER ID | | | | | | | | | | | | | | | | | | | |
| Env. Conditions | | WEATHER | TEMP | T-14.2 | | | | | | | | | | | | | | | | | | | | | |
| Comments: | | Relinquished by: <u>Kevin Simonsen</u> (Name) (Signature) | | | | | | | | | | Received by: | | Date/Time 2/27/15 - 0950 | | (Name) Robert Waddell (Signature) | | Date/Time 0950 | | | | | | | |
| Relinquished by: (Name) (Signature) | | Received by: | | | | | | | | | | Date/Time | | (Name) (Signature) | | Date/Time | | | | | | | | | |
| Relinquished by: (Name) (Signature) | | Received by laboratory: | | | | | | | | | | Date/Time | | (Name) Robert Waddell (Signature) | | Date/Time 2-27-15 0950 | | | | | | | | | |
| Method of Shipment: | | CB&I | | | | | | | | | | iced | | | | | | | | | | ISCO ID | | -NA- | |
| Condition of samples upon receipt at laboratory: | | | | | | | | | | | | | | | | | | | | | | | | | |

**CHAIN OF CUSTODY
AND
ANALYTICAL REQUEST RECORD**

Test ID No.: 15080309-15030311, 15021221

CLIENT: CPRA/CB+I **P.O. NUMBER:** _____ **SAMPLED BY:** K. Simoneaux
PROJECT NO.: 153673 **LABORATORY*:** _____ **DATE:** C. Paul

| SAMPLE IDENTIFICATION | DATE | TIME | MATRIX | NO. OF CONTAINERS | PRESERVATIVE | ANALYSES AND INSTRUCTIONS |
|-----------------------|---------|------|--------|-------------------|--------------|--|
| LH-17(0-6) | 1/26/15 | 1120 | Soil | 1 | — | Benthic Toxicity 15021217 |
| LH-16(0-6) | 1/26/15 | 1240 | Soil | 1 | — | 15021218 |
| LH-04(0-6) | 1/27/15 | 0830 | Soil | 1 | — | 15021219 |
| LH-08(0-6) | 1/27/15 | 1315 | Soil | 1 | — | 15021220 |
| LH-BG(0-6) | 1/28/15 | 1410 | Soil | 1 | — | Reference sediment 15021221 |
| SI-01(0-6) | 1/28/15 | 0940 | Soil | 1 | — | 15021214 |
| SI-09(0-6) | 1/29/15 | 1200 | Soil | 1 | — | Benthic 15021215 Reference sediment |
| SI-BG(0-6) | 1/29/15 | 1225 | Soil | 1 | — | Benthic Toxicity 15021216 |

| Relinquished by: | (Name) | (Signature) | Date | Time | Received by: | (Name) | (Signature) | Date | Time | Temperature upon receipt |
|------------------|-----------------|-------------|---------|-------|--------------|-----------|-------------|---------|------|--------------------------|
| Kevin Simoneaux | Kevin Simoneaux | [Signature] | 1/30/15 | 12:45 | | | | | | |
| | | [Signature] | | | | Gus Zeske | [Signature] | 1.30.15 | 1245 | |
| | | [Signature] | | | | | [Signature] | | | |

Method of Shipment: _____
 Condition of Samples upon receipt at laboratory: _____
 Please send results and invoice to the attention of Barry Hebert / barry.hebert@cbi.com in our Baton Rouge, Lake Charles, Shreveport, Houston Office
 WHITE COPY TO ACCOMPANY SAMPLE • RETAIN YELLOW COPY FOR FILES • RETAIN PINK COPY FOR FIELD SUPERVISOR
 CK-100